

COMPLETE REVISION HISTORY TO THE 2015 I-CODES[®]

Successful Changes and Public Comments



**Complete Revision History to the 2015 I-Codes: Successful Changes and
Public Comments: 2015 IFC**

First Printing: September 2014

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INTRODUCTION

Why did IFC/2015 section 905.4 change from the 2012 edition? This Complete Revision History to the 2015 I-Codes: Successful Changes and Public Comments: 2015 IFC has been compiled to provide the answers to such questions.

This Complete Revision History to the 2015 I-Codes: Successful Changes and Public Comments: 2015 IFC provides the published documentation for each successful code change in the IFC/2015 since the 2012 edition. Each changed code section is listed in the Table of Changes which contains three headings. The first heading is "2015 IFC" which lists the section number in the 2012 code. If (new) appears after the section number it indicates that the section is new in 2015. If (deleted) is indicated in 2012 it means that the section no longer exists and the second column 2012 IFC will show the section number that was deleted. Also, the second heading will indicate if a section number has changed from 2012 to 2015. If there is nothing indicated in the 2012 column, the section number remained the same. The third heading lists the code change number(s) which affected that particular section. The published material for each change is contained in the Documentation section.

HOW TO USE THE HANDBOOK

This Complete Revision History to the 2015 I-Codes: Successful Changes and Public Comments: 2015 IFC makes it possible for the reader to examine, in one location, all published information about a particular code change. For any given change, the text of the proposed change, committee actions and modifications, assembly actions, successful public comments, and final action can be found by using the following steps:

1. Locate the code section in the Table of Changes beginning on page ix, using the 2012 IFC section number.
2. Note the corresponding proposed code change number(s) from the list.
3. Locate the proposed code change number (listed in numerical order under the appropriate year and letter designation) in the Documentation section to read the complete chronological documentation of the proposed change

SOURCE DOCUMENTS

The code development cycle involves the publication of four documents, the result of 1) public submittal of proposed changes, 2) Report of Committee Action Hearings, 3) Public Comment Hearing Agenda, and 4) final action results. Under each code change number in the Documentation section of this handbook, material corresponding to that individual proposed change has been drawn from each of the four publications. Two code change cycles occurred between published editions of the 2009 and 2012 IFC; therefore, the Documentation section of this handbook contains material collected and collated from the following published documents:

2012 Documentation

2012 Proposed Changes to the International Codes
2012 Report of the Public Hearing on the International Codes
2012 Final Action Agenda on the International Codes
Final Action on 2012 Proposed Changes to the International Codes

2013 Documentation

2013 Proposed Changes to the International Codes
2013 Report of the Public Hearing on the International Codes
2013 Final Action Agenda on the International Codes
Final Action on 2013 Proposed Changes to the International Codes

Unsuccessful proposed changes have not been included since they do not directly affect the final content of the code section.

Code Change No: F192-13

Code change numbers are identified with a letter and a year designation. For instance, **F192-13** is proposed change number 192 to the *International Fire Code* and was submitted in the **13** (2013) code change cycle. (See “Code Change Numbers” on page v for a discussion of code committees)

Original Proposal

This is the proposal as published in the 2013 Proposed Changes to the International Codes. It includes the section number(s), proponent’s name, who they are representing, the text of the proposed change and their reason for the change. This is a change to IFC Sections 909.12, 909.12.1 and 909.20.6.

Public Hearing Results

This is the result of the Code Development Hearing held to consider the change, as published in the 2013 Report of the Public Hearing to the International Codes. It includes the committee’s action (Disapproved) and reason for the action and also identifies if there was an assembly motion (none).

Public Comments

This is text of the submitted public comment, as published in the 2015 Final Action Agenda to the International Codes. It includes the public commenter’s name and affiliation, the requested action to be considered at the Final Action Hearing (Approved as Modified) and the reason.

Final Hearing Results

This is the action taken by the eligible voting members of the ICC at the Final Action Hearing, as published in the Final Action on 2013 Proposed Changes to the International Codes. The Final Action was AMPC which means the eligible voting members of ICC overturned the committee’s action and approved the change based on the submitted public comment.

CODE CHANGE NUMBERS

The following is the legend for code change numbers, along with the applicable committee and the committee’s primary area of responsibility relative to the IFC.

Prefix	Code Committee	Primary IFC Chapters Affected
F	IFC Code Committee	Chapters 1-9; 11-44
FG	IFGC Code Committee	Chapter 1
E	IBC Means of Egress Committee	Chapter 10
FS	IBC Fire Safety Committee	Chapter 9
G	IBC General Committee	Chapters 2, 4

Although most changes to the IFC are found under proposed change numbers beginning with an F, some changes to the IFC are published within a proposed change to the other *International Codes*, and therefore are found under a proposed code change number beginning with one of the other letters listed above. Use the table of contents to locate appropriate sections by year and letter designation.

CODE SECTION NUMBER DIFFERENCES

For editorial reasons, some code section numbers in the 2015 edition have changed from the 2012 edition. The numbering of code sections is an editorial task which takes place outside of the normal code development cycle, and is necessary to avoid duplicate or non-sequential section numbers.

The Table of Changes typically references the 2012 code section numbers that have been deleted. (See Introduction)

In most cases the section numbers have not changed from the 2012 to the 2015 edition. However, the reader should remember that it is always the 2012 code section which appear in the material contained in the Documentation section. This is due to proposed changes which have as their basis, a section number in the 2012 edition. Since an attempt to correlate code sections by number may lead to confusion, the user is advised to rely on the section content rather than the numbers to locate and compare parallel sections in the two editions.

ABBREVIATIONS FOR ACTIONS

In the Documentation section, the following abbreviations are used to signify committee or final action:

Legend for 2012 and 2015 Documentation:

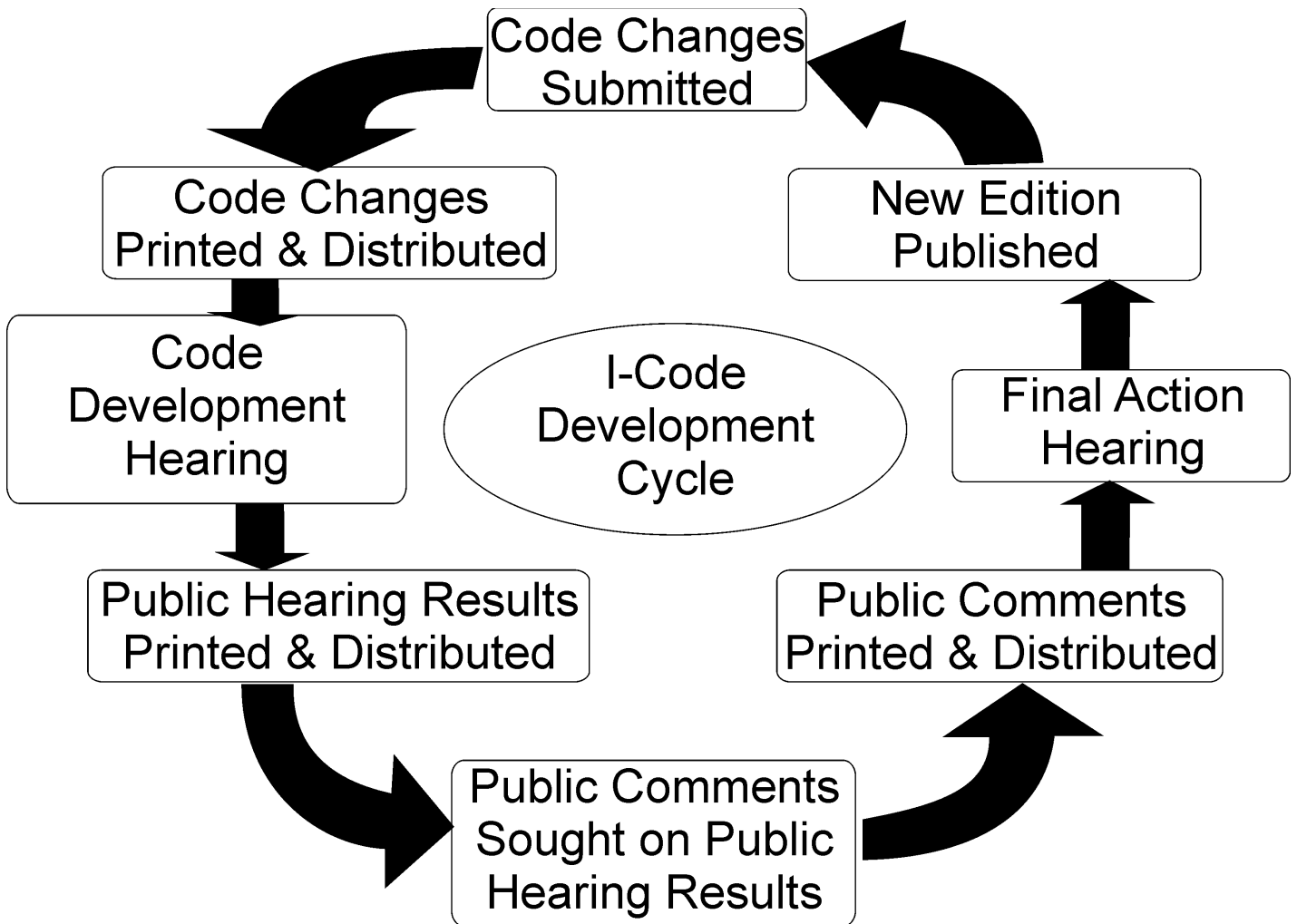
AS	=	Approved as Submitted
D	=	Disapproved
AM	=	Approved as Modified by the Code Committee
AMPC	=	Approved as Modified by a Public Comment
WP	=	Withdrawn by Proponent

CODE CORRELATION COMMITTEE

During the course of the code development process, there are editorial issues, issues related to code correlation problems arising from code changes, and issues related to the appropriate committee that should consider certain topics. These issues are placed before the ICC Code Correlation Committee for resolution. During the development of the 2015 Code, from 2012 to 2014, the Code Correlation Committee met 2 times to discuss and resolve these issues. Code Correlation Committee actions are posted on the ICC website in the Code Development Section.

ICC CODE DEVELOPMENT PROCESS

The following depicts the key steps in ICC's Code Development Process:



The procedures governing ICC Code Development are entitled Code Development Process for the International Codes. These procedures are updated periodically and therefore not included here. To obtain the current version, visit ICC's website at www.iccsafe.org.

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INTERNATIONAL FIRE CODE TABLE OF CHANGES

CHAPTER 1 ADMINISTRATION

CHAPTER 2 - continued

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
[A] 101.3		ADM6-13, Part I AMPC
[A] 102.6		F213-13
[A] 103.4		ADM21-13 Part I
[A] 103.4.1		ADM21-13 Part I
[A] 104.3		ADM22-13 Part I
[A] 104.3.1		ADM22-13 Part I
[A] 104.7.2		ADM22-13 Part I
[A] 104.9		ADM23-13 Part I
[A] 105.1.1		ADM22-13 Part I
[A] 105.1.4 (New)		ADM25-13 Part I
[A] 105.1.5 (New)		ADM25-13 Part I
[A] 105.1.6 (New)		ADM26-13 Part I
[A] 105.1.6.1 (New)		ADM26-13 Part I
[A] 105.4.5		ADM30-13 Part I
[A] 105.6.4		F310.13
Table [A] 105.6.9	Table [A] 105.6.8	F310-13
[A] 105.6.31 (New)		ADM31-13
[A] 105.6.41	[A] 105.6.39	ADM31-13
[A] 105.6.45	[A] 105.6.43	F269-13
[A] 105.7.9 (New)		ADM32-13
[A] 105.7.12	[A] 105.7.11	ADM33-13
[A] 105.7.13	[A] 105.7.12	ADM33-13
[A] 105.7.14 (New)		ADM35-13
[A] 105.7.15	[A] 105.7.13	ADM33-13
[A] 105.7.16	[A] 105.7.14	ADM33-13
[A] 105.7.18	[A] 105.7.16	F269-13
Deleted	[A] 107.2.1	ADM43-13 Part I
[A] 107.3 (New)		ADM43-13 Part I
[A] 109.2		ADM22-13 Part I
[A] 109.3.1		ADM22-13 Part I
[A] 109.3.2		ADM22-13 Part I
[A] 110.4		ADM22-13 Part I
[A] 111.2		ADM22-13 Part I
[A] 112.1		ADM22-13 Part I

CHAPTER 2 DEFINITIONS

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
[B] 24-HOUR BASIS		G1-12, G31-12
AEROSOL CONTAINER		F299-13
AGRO-NATURAL (New)		F350-13 AMPC
BIOMASS (New)		F350-13 AMPC
[B] CARE SUITE		G70-12
[B] COMMON PATH OF EGRESS TRAVEL		E1-12
[M] CHIMNEY		G7-12

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
Factory-built chimney		G7-12
Masonry chimney		G7-12
Metal chimney		G7-12
COMBUSTIBLE GAS DETECTOR		F282-13
[B] CUSTODIAL CARE		G31-12 Part I
CRITICAL CIRCUIT (New)		F57-13 AMPC1, 2
DECORATIVE MATERIALS		F3-13
DUTCH DOOR (New)		F239-13 AMPC2,4
[B] EQUIPMENT PLATFORM		E2-12
[B] EXIT		E2-12 Part I
[B] EXIT ACCESS DOORWAY		E2-12 Part I, G87-12
[B] EXIT ACCESS RAMP		E4-12 AMPC, E7-12 AMPC
[B] EXIT ACCESS STAIRWAY		E4-12 AMPC, E7-12 AMPC
Deleted	[B] EXIT, HORIZONTAL	G9-12
[B] EXTERIOR EXIT RAMP (New)		E4-12 AMPC
[B] EXTERIOR EXIT STAIRWAY (New)		E4-12 AMPC
[B] FLOOR AREA, GROSS		E2-12 Part I
[B] FLOOR AREA, NET		E2-12 Part I
FLAMMABLE SOLID		F6-13
GASEOUS HYDROGEN SYSTEM (New)		G14-13
[B] GROUP HOME		G31-12 Part I
[B] GUEST ROOM (New)		G40-12
[B] HORIZONTAL EXIT		G9-12
Deleted	HPM FLAMMABLE LIQUID	F263-13
HYDORGEN FUEL GAS ROOM (New)		G14-13
[A] LABELED		S117-12
[B] LODGING HOUSE (New)		G40-12
[B] LOW ENERGY POWER-OPERATED HOUSE		E57-12 AMPC
OCCUPANCY CLASSIFICATION		
Accessory with places of religious worship		G27-12
[B] Business Group B		G28-12 AMPC
[E] Educational Group E		G27-12
[F] Factory Industrial Group F		G28-12 AMPC
High-hazard Group H-3		F288-13
Industrial Group I-1		G31-12 Part I, G34-12
Industrial Group I-2		G31-12, G257-12
Residential Group R-3		G40-12
Residential Group R-4		G31-12, G34-12
[B] Storage Group S		G42-12
[B] OPEN-ENDED CORRIDOR (New)		E153-12
[A] PERMIT		ADM55-13 Part I
[M] PLENUM		F18-13, F75-13
[B] POWER-OPERATED DOOR		E57-12 AMPC
[B] POWER-ASSISTED DOOR		E57-12 AMPC
[B] SCISSOR STAIRWAY		E2-12 Part I
SKY LATERN (New)		F13-13
[B] SMOKEPROOF ENCLOSURE		E5-12, CCC12-62
SOLID BIOFUEL (New)		F350-13 AMPC

SOLID BIOMASS FEEDSTOCK (New)..... F350-13 AMPC

CHAPTER 2 - continued

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
Deleted	STAIRWAY, INTERIOR	E4-12 AMPC
STATIC PILES		F350-13 AMPC
[B] STAIRWAY, SCISSOR (New)		E2-12 Part I
TEMPORARY STAGE CANOPY (New)		F269-13

**CHAPTER 3
GENERAL PRECAUTIONS AGAINST FIRE**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
305.5 (New)		F9-13
308.1.6.3 (New)		F13-13
310.3.1 (New)		F14-13
311.6	408.11.3	F25-13
312.3		F15-13
315.3.3		F47-13
315.6 (New)		F18-13
318.1		F19-13

**CHAPTER 4
EMERGENCY PLANNING AND PREPAREDNESS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
403.1	408.1	F25-13
403.2	408.2	F25-13
403.2.1	408.2.1	F25-13
403.2.3 (New)		F25-13
403.2.4 (New)		F25-13
403.3 (New)		F26-13
403.3.1 (New)		F26-13
403.3.2 (New)		F26-13
403.3.3	408.5.2	ADM43-13 Part II, F26-13
403.3.4		F26-13
403.4 (New)		F25-13, F26-13
403.5	408.3	F25-13
Deleted	408.3.2	F25-13
403.5.2	408.3.3	F25-13
403.6 (New)		F25-13
403.7 (New)		F25-13
403.7.1	408.4	F25-13
403.7.1.2	408.4.2	F25-13
403.7.1.3	408.4.3	F25-13
403.8 (New)		F25-13
403.8.1	408.5	F25-13
403.8.1.1	408.5.1	F25-13
403.8.1.1.1 (New)		F30-13 AMPC
403.8.1.1.2 (New)		F30-13 AMPC
403.8.1.2	408.5.2	F25-13
403.8.1.3	408.5.3	F30-13 AMPC
403.8.1.4	408.5.4	F32-13
403.8.1.5 (New)		F25-13
403.8.1.6	408.5.5	F30-13 AMPC
403.8.1.7 (New)		F30-13 AMPC
403.8.2	408.6	F27-13
Deleted	408.6.1	F27-13
Deleted	408.6.2	F27-13

403.8.2.1 (New)..... F27-13

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2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
403.8.2.2 (New)		F27-13
403.8.2.3 (New)		F27-13
408.8.3 (New)		F27-13
403.8.3	408.7	F25-13
403.8.3.1	408.7.1	F25-13
403.8.3.2	408.7.2	F25-13
403.8.3.3	408.7.3	F25-13
403.9 (New)		F25-13
403.10 (New)		F25-13
403.10.1	408.8	F25-13
403.10.2	408.9	F25-13
403.10.2.1 (New)		F25-13
403.10.2.1.1 (New)		F25-13
403.10.2.1.2 (New)		F25-13
403.10.2.2	408.9.1	F25-13
403.10.2.2.1 (New)		F25-13
403.10.2.2.2	408.9.3	F25-13
403.10.2.2.3	408.9.4	F25-13
403.10.2.3 (New)		F25-13
403.10.3	408.10	F25-13
403.10.3.1	408.10.1	F25-13
403.10.3.1.1 (New)		F30-13 AMPC
403.10.3.2	408.10.2	ADM43-13 Part II, F25-13
403.10.3.4	408.10.4	F32-13
403.10.3.5 (New)		F25-13
403.10.3.6	408.10.5	F25-13, F30-13 AMPC
403.11 (New)		F25-13
403.11.1	408.11	F25-13
403.11.1.1 (New)		F25-13
403.11.1.2	408.11.1	F25-13
403.11.1.3	408.11.1.1	F25-13
403.11.1.4	408.11.1.2	F25-13
403.11.1.5	408.11.2	F25-13
403.11.1.6 (New)		F25-13
403.11.2 (New)		F25-13
403.11.3 (New)		F25-13
403.11.4 (New)		F34-13
403.12 (New)		F25-13
403.12.1	403.1	F25-13
Deleted	403.1.1	F25-13
403.12.1.1 (New)		F25-13
403.12.1.2 (New)		F25-13
403.12.2	403.2 & 403.2.1	F22-13, F25-13
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403.12.3.1 (New)		F23-13, F25-13
403.12.3.2 (New)		F24-13
403.12.3.3 (New)		F24-13
404.1		F25-13
Deleted	404.2	F25-13
404.2.1	404.3.1	F26-13, F27-13, F28-13
404.2.2	404.3.2	F26-13, F27-13, F30-13 AMPC
405.1		F25-13
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406.1		F25-13

406.2 ADM43-13 Part II

F72-13, RM96-13 Part I

CHAPTER 4 - continued

605.11.1.2.1 (New)..... F62-13

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
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406.3.3	406.3.4	F25-13
406.4	406.3.3	F25-13

**CHAPTER 5
FIRE SERVICE FEATURES**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
----------	----------	-----------------------

503.1.1		F37-13, F38-13
503.2.2		F39-13
503.4		F41-13
503.4.1		F42-13
505.1		F43-13 Part I
507.5.2		ADM43-13 Part II
507.5.3		ADM43-13 Part II
508.1.5		F47-13
508.1.6	E2-12 Part III AMPC,	F47-13
510.4.2.3		F59-13 Part I AMPC

**CHAPTER 6
BUILDING SERVICES AND SYSTEMS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
----------	----------	-----------------------

603.8.6		F220-13
603.8.7		F220-13
604.1		F53-13
604.1.2 thru 604.1.8 (New)		F53-13, F54-13 AMPC
Deleted	604.2.1	F59-13 Part I
604.2.1 (New)		F59-13 Part I
604.2.2 (New)		F59-13 Part I
604.2.3 (New)		F59-13 Part I
Deleted	604.2.5	F59-13 Part I
Deleted	604.2.6	F59-13 Part I
604.2.5	604.2.3	F59-13 Part I
604.2.7	604.2.16	F59-13 Part I
604.2.8		F59-13 Part I
604.2.9		F59-13 Part I
604.2.10		F59-13 Part I
604.2.12	604.2.4	F59-13 Part I
Deleted	604.2.13	F59-13 Part I
604.2.14		F59-13 Part I
Deleted	604.2.14.1 thru 604.2.14.3	F59-13 Part I
604.2.15 (New)		G80-12 AMPC1
604.2.16	604.2.2	F59-13 Part I
604.2.17	604.2.15	F59-13 Part I
Deleted	604.2.15.1 thru 604.2.15.2.1	F59-13 Part I
Deleted	604.2.17	F59-13 Part I
604.2.18 (New)		F59-13 Part I
604.3 (New)		F57-13 AMPC1, 2
604.4.2	604.3.2	ADM43-13 Part II
604.6.1.1	604.5.1.1	ADM43-13, Part II
604.6.2.1	604.5.2.1	ADM43-13 Part II
605.11		F62-13, F352-13
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605.11.1.2	605.11.3.2	F62-13, F64-13,

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2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
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605.11.1.2.2	605.11.3.2.1	F62-13, F64-13, F73-13
605.11.1.2.3	605.11.3.2.2	F62-13, F64-13
605.11.1.2.4	605.11.3.2.3	F62-13, F64-13
605.11.1.2.5	605.11.3.2.4	F62-13, F64-13
605.11.1.3	605.11.3.3	F62-13, F64-13, F72-13
605.11.1.3.1	605.11.3.3.1	F62-13, F64-13
605.11.1.3.2	605.11.3.3.2	F64-13, F73-13, F74-13
605.11.1.3.3	605.11.3.3.3	F64-13, F74-13
605.12 (New)		F75-13
606.6		ADM43-13 Part II
606.10		F78-13
606.10.2	606.9.2	F77-13
606.12		F79-13
606.13.1 (New)		F80-13 AMPC
606.13.1.1 (New)		F80-13 AMPC
606.13.2 (New)		F79-13
606.13.3	606.12.1	F79-13
606.13.4	606.12.2	F79-13
606.13.5	606.12.3	F79-13, F81-13
606.13.7	606.12.5	F59-13 Part I, F79-13
606.13.8	606.12.6	F79-13
606.16	606.15	ADM43-13 Part II
607.2	604.2.18	F59-13 Part I
607.5 (New)		F82-13
607.6 (New)		F83-13
[M] 609.2		F90-13
609.3.3.2		F91-13
609.3.3.3		ADM43-13
609.3.3.1 (New)		F93-13
609.4 (New)		F94-13
610.1		F95-13 AMPC
610.2		F95-13 AMPC
610.3 (New)		F95-13 AMPC
610.4	610.3	F95-13 AMPC
610.4.1 (New)		F95-13 AMPC
610.4.2 (New)		F95-13 AMPC
610.5	610.4	F95-13 AMPC
610.5.1 thru 610.6 (New)		F95-13 AMPC
610.7	610.5	F95-13 AMPC
611 thru 611.2 (New)		F96-13

**CHAPTER 7
FIRE-RESISTANCE RATED CONSTRUCTION**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
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701.1		F97-13
703.1		ADM43-13
703.4		ADM43-13

**CHAPTER 8
INTERIOR FINISH, DECORATIVE
MATERIALS AND FURNISHINGS**

CHAPTER 9 - continued

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
803.5.1		F99-13
Deleted	803.5.1.1	F99-13
803.7 (New)		F101-13
805.1		F102-13
805.3.2.2 (New)		F103-13
805.3.2.2.1	805.3.2.2	F103-13
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806.2		F106-13
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807.2	807.1.1	F106-13, F109-3
807.3	807.1.2	F106-13
807.4	807.2	F106-13
807.4.2.2		F106-13
807.5	807.4	F106-13
Deleted	807.4.1	F109-13
807.5.1.2	807.4.2.2	F106-13
807.5.1.4	807.3	F109-13
807.5.2	807.4.3	F109-13
807.5.2.1	807.4.3.1	F109-13
807.5.2.3 (New)		F109-13
807.5.3	807.4.4	F109-13
807.5.3.1	807.4.4.1	F109-13
807.5.3.2	807.4.4.2	F109-13
807.5.3.3 (New)		F109-13
807.5.4 (New)		F109-13
807.5.5 (New)		F109-13
807.5.6 (New)		F109-13

**CHAPTER 9
FIRE PROTECTION SYSTEMS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
901.4.1		F113-13
901.4.6		F115-13
Table 901.6.1		F195-13
901.6.2		ADM43-13
901.6.2.1		ADM43-13
901.8.2 (New)		F150-13
902.1		
AUTOMATIC WATER MIST SYSTEM (New)		F144-13
903.2.1	F118-13, F120-13	AMPC1
903.2.1.1	F118-13, F120-13	AMPC1
903.2.1.2	F118-13, F120-13	AMPC1
903.2.1.3	F118-13, F120-13	AMPC1
903.2.1.4	F118-13, F120-13	AMPC1
903.2.1.6 (New)	F124-13	AMPC1, 2
[F] 903.2.6		G31-12 Part II
[F] 903.2.8.1		G31-12 Part II
[F] 903.2.8.2		G31-12 Part II
[F] 903.2.8.3 (New)		G31-12 Part II
[F] 903.2.8.3.1 (New)		G31-12 Part II
[F] 903.2.8.3.2 (New)		G31-12 Part II

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
903.2.9		F128-13
903.2.9.1		F128-13
903.2.11.3		F131-13, F132-13
Table 903.2.11.6		F146-13
903.3.1.1.2 (New)		F133-13
903.3.1.2	F134-13, F135-13	
903.3.1.2.1		F136-13
903.3.1.2.2 (New)		F137-13
[F] 903.3.1.3		G31-12 Part II
903.3.5		F45-13
Deleted	903.3.5.1.1	F138-13
903.3.5.2	903.3.5.1.2	F138-13
Deleted	903.3.5.3	F138-13
903.3.7		F140-13
903.3.8 (New)		F138-13
903.3.8.1 thru 903.3.8.5 (New)		F138-13
903.4		F138-13
904.2		F144-13
904.2.1 (New)		F144-13
904.2.2	904.2.1	F144-13
904.5		ADM43-13
904.6		ADM43-13
904.7		ADM43-13
904.8		ADM43-13
904.9		ADM43-13
904.10		ADM43-13
904.12 thru 904.12.3 (New)		F144-13
904.13 thru 904.13.2		F146-13
905.1		F141-13
905.2		F141-13
905.3.3	E2-12	Part II AMPC1,2
905.4	E2-12	Part III AMPC1, 2, F148-13
905.4.1	E2-12	Part III AMPC1,2
906.2		G71-12
Table 906.3(1)		G71-12
Table 906.3(2)		G71-12
907.1.2		F152-13
907.2.3		F157-13, F158-13
907.2.6	G71-12	Part II, F160-13
907.2.6.1	G31-12	Part II
907.2.6.2		F348-13
907.2.9.3		F161-13
907.2.10.1	G71-12	Part II
907.2.11.2		F163-13
907.2.11.3 (New)		F359-13
907.2.11.4 (New)		F359-13
907.2.11.6	907.2.11.4	F359-13
907.2.11.7 (New)		F163-13
907.2.13.2	ES-12	Part III AMPC
907.2.14		F167-13
907.2.22.1 (New)		F168-13
907.2.22.2 (New)		F168-13
907.4.2.1		F170-13
907.5.2.1		F160-13
907.5.2.2	E2-12	Part III AMPC
907.5.2.2.5		F59-13
907.5.2.3		F160-13
907.5.2.3.1	907.5.2.3.2	F171-13

907.6	F173-13
907.6.3 (New)	F174-13
907.6.3.1 (New)	F174-13

CHAPTER 9 - continued

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
907.8		ADM43-13 Part II
907.8.2		ADM43-13
907.8.5		ADM43-13
Deleted	908.7	F180-13
908.7 (New)		F310-13
909.4.6		F184-13
909.4.7 (New)		F185-13
909.5		F186-13
909.5.1		F186-13
909.5.2 (New)		F186-13
909.5.3	909.5.2	F187-13, F188-13
909.5.3.1 (New)		F187-13
909.6.3 (New)		F189-13
909.7		F190-13
Deleted	909.7.1	F190-13
909.7.1	909.7.2	F190-13
909.11		F59-13
909.11.1		F59-13
909.12.1		F192-13 AMPC
909.18.8		S113-12
909.18.8.1		S113-12
909.18.8.2		S117-12
909.18.8.3		S117-12
909.20.2		ADM43-13 Part II
909.20.6 (New)		F192-13
[B] 909.21 thru [B] 909.21.11 (New)		F59-13, F194-13, S113-12
910.1		F195-13
910.2		F195-13
910.2.1		F195-13
910.2.2		F195-13
910.3		F195-13
Deleted	Table 910.3	F199-13
910.3.1		F195-13
Deleted	910.3.2 thru 901.3.3	F195-13
910.3.2	910.3.4	F195-13
910.3.3 (New)		F195-13
Deleted	910.3.5 thru 910.3.5.2	F195-13
910.4		F195-13
910.4.1 thru 910.4.5 (New)		F195-13
Deleted	910.4.1 thru 910.4.3	F195-13
910.4.6	910.4.4	F195-13
Deleted	910.4.5	F195-13
910.47	910.4.6	F195-13
910.5		F195-13
910.5.1 thru 910.5.2.4 (New)		F195-13
Table 911.1		F199-13
912.3 (New)		F141-13
912.7	912.6	ADM43-13 Part II
913.2.2 (New)		F204-13 AMPC
913.5		ADM43-13 Part II
913.5.2		ADM43-13 Part II
913.5.3		ADM43-13 Part II
914.3.1.2		G4-13
914.8.2 (New)		F206-13
914.8.3	914.8.2	F206-13
915 (New)		F180-13, F182-13, F360-13 AMPC1

**CHAPTER 10
MEANS OF EGRESS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
[B] 1004.3		ADM22-13 Part I
1030.2.1		F208-13
1030.3.1		F209-13
1030.8		ADM43-13 Part II

**CHAPTER 11
CONSTRUCTION REQUIREMENTS FOR EXISTING BUILDINGS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
1102.1		
DUTCH DOOR (New)		F239-13
Table 1103.1		F225-13, F236-13, F237-13
1103.1.1 (New)		F213-13
1103.3 (New)		F216-13
1103.3.1 (New)		F216-13
1103.3.2	1103.3	E2-12 Part II AMPC, F215-13, F216-13
1103.4		F217-13
1103.4.1		F217-13
1103.4.2		F217-13
1103.4.3		F217-13
1103.4.4		F217-13
1103.4.8 (New)		F217-13
1103.4.9 thru 1103.4.10 (New)		F220-13
1103.5.2		F237-13
1103.5.3 (New)		F225-13
1103.7.2		F227-13
1103.7.3		F237-13
1103.7.6		F228-13 AMPC1
1103.8.1		F229-13
1103.10		F230-13
1104.2		F231-13
1104.5	E2-12 Part III AMPC,	F232-13
1104.5.1	F59-13,	F240-13
1104.6.1	E2-12 Part III AMPC	
1104.7		F240-13
1104.8		F234-13
1104.9	E2-12 Part III AMPC	
1104.10	E2-12 Part III AMPC	
1104.10.1	E2-12 Part III AMPC	
1104.12	E2-12 Part III AMPC	
1104.15		F240-13
1104.16 thru 1104.16.7		E2-12 Part III AMPC
1104.17		F239-13 AMPC2, 4
1104.18	1104.17.2	F240-13
Table 1104.18	Table 1104.17.2	F240-13, F242-13
1104.21	1104.20	E2-12 Part III AMPC
1104.22	1104.21	E2-12 Part III AMPC
1104.23	1104.22	F235-13, F240-13
1104.24	1104.23	E2-12 Part III AMPC
1105 thru 1105.10.2 (New)		F237-12, F239-13 AMPC2, 4, F240-13, F241-13 AMPC2, F242-13, F243-13

CHAPTER 12 through CHAPTER 19 (Reserved)		
CHAPTER 20 AVIATION FACILITIES		
2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
2004.7		F244-13
2006.5.3.2.2		ADM43-13 Part II
2006.6.4		ADM43-13 Part II

CHAPTER 23 MOTOR FUEL-DISPENSING FACILITIES AND REPAIR GARAGES		
2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
2305.2.1		ADM43-13 Part II
2306.2.1.1		ADM43-13 Part II
2306.8.1 (New)		F246-13
2306.8.2 (New)		F246-13
2307.4		F250-13 AMPC
2307.5		F251-13
2307.6		F251-13
2307.6.1 thru 2307.7 (New)		F251-13
2307.8	2307.7	F251-13
2309.4.1		F255-13
2309.6 thru 2309.6.3.1 (New)		F256-13
2310.5.3		F257-13
2311.8		F256-13

CHAPTER 26 FUMIGATION AND THERMAL INSECTICIDAL FOGGING		
2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
2603.5		F106-13

CHAPTER 27 SEMICONDUCTOR FABRICATION FACILITIES		
2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
Deleted	2702.1 HPM FLAMMABLE LIQUID	F263-13
2703.15		F59-13 Part I
2705.2.3.1		F26-13

CHAPTER 28 LUMBER YARDS AND WOODWORKING FACILITIES		
2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)

NUMBER(S)	
Chapter 28	F35-13 AMPC

CHAPTER 28 - continued		
2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
2801.1		F265-13, F350-13
2802.1		
AGRO-INDUSTRIAL (New)		F350-13 AMPC
BIOMASS (New)		F350-13 AMPC
SOLID BIOFUEL (New)		F350-13 AMPC
SOLID BIOMASS FEEDSTOCK (New)		F350-13 AMPC
2804.1		F350-13 AMPC
2808.3		F264-13
2808		F350-13 AMPC
2808.1		F350-13 AMPC
2808.2		F350-13 AMPC
2808.6		ADM43-13 Part II
2809		F350-13 AMPC
2809.1		F350-13 AMPC
2809.2		F350-13 AMPC
2809.4		F350-13 AMPC

CHAPTER 31 TENTS AND OTHER MEMBRANE STRUCTURES		
2015 IFC	2012 IFC NUMBER(S)	CODE CHANGE
3101.1		F266-13, F269-13
3102.1 TEMPORARY STAGE CANOPY		F269-13
3103.1		F266-13
3103.10.4		F59-13 Part I
3104.2		F106-13
3105 thru 3105.8 (New)		F269-13

CHAPTER 32 HIGH-PILED COMBUSTIBLE STORAGE		
2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
3203.2		F271-13
3203.4		F349-13 AMPC
Table 3206.2		F195-13
3206.4.1 (New)		F272-13
3206.4.1.1 (New)		F272-13
3206.6.1.1		F273-13
3206.7		F195-13
3206.9.3		F274-13
3208.2.1		F272-13
3208.2.2		F276-13

CHAPTER 33 FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION		
2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
3304.2		F278-13 AMPC
3304.2.1 (New)		F278-13 AMPC

3304.2.2 (New)	F278-13 AMPC
3304.2.3 (New)	F278-13 AMPC, F279-13 AMPC
3304.3 (New)	F278-13 AMPC
3306.2 (New)	F280-13

CHAPTER 33 - continued

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
3306.2.1 (New)		F280-13
3313.1	E2-12, Part I AMPC, F281-13	

**CHAPTER 35
WELDING AND OTHER HOT WORK**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
3504.1.7		F282-13
3510.1		F282-13
3510.2		F282-13

**CHAPTER 36
MARINAS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
3603.4		F283-13

**CHAPTER 37 (WAS CHAPTER 52)
COMBUSTIBLE FIBERS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
Chapter 37	Chapter 52	F301-13
3703.7 (New)		F300-13 AMPC
3703.7.1 (New)		F300-13 AMPC
3703.7.2 (New)		F300-13 AMPC
3704.1	5204.1	F300-13

**CHAPTER 38
Through
CHAPTER 49
(Reserved)**

**CHAPTER 50
HAZARDOUS MATERIAL – GENERAL PROVISIONS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
5001.1		F284-13
Table 5003.1.1(1)		F284-13, F288-13, F289-13, F291-13, F290-13
Table 5003.1.1(2)		F284-13
5003.2.1		F294-13
5003.2.9		ADM43-13 Part II
5003.3.1.1		ADM43-13 Part II
5003.8.4		F290-13
5003.11.3.11		F356-13

5004.7	F59-13 Part I, F298-13
5004.7.1 (New)	F59-13 Part I
5004.7.2 (New)	F59-13 Part I
5005.1.5	F59-13 Part I

CHAPTER 50 - continued

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
5005.1.5.1 (New)		F59-13 Part I

**CHAPTER 51
AEROSOLS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
5101.4		F299-13
5104.1		F299-13

**CHAPTER 52
(Reserved)**

**CHAPTER 53
COMPRESSED GASES**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
5301.1		F303-13, F304-13, F357-13
5303.6.2		F304-13
5305.7		F303-13
5306		F306-13
5306.1		F306-13
5306.2.1		F308-13
5306.4 (New)		F306-13
5306.5	5306.4	F306-13, F309-13
5307 thru 5307.5.2		F310-13
5308 thru 5308.2	5307 thru 5307.2	F310-13

**CHAPTER 55
CRYOGENIC FLUIDS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
5501.1		F311-13
5503.1.3.1		F311-13
5503.2.6		F313-13
Table 5504.3.1.1		F313-13

**CHAPTER 56
EXPLOSIVES AND FIREWORKS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
5601.1.3		F313-13
5601.3		F312-13
5601.8.1.1	3301.8.1.1	CCC10-IFC-13
5601.8.1.2	3301.8.1.2	CCC10-IFC-13
5601.8.1.3	3301.8.1.3	CCC10-IFC-13
5603.2		ADM43-13 Part II

5606	3306	CCC10-IFC-14
5606.1	3306.1	CCC10-IFC-14
5606.4	3306.4	CCC10-IFC-14
5606.4.1	3306.4.1	CCC10-IFC-14
5606.4.2	3306.4.1	CCC10-IFC-14

CHAPTER 56 - continued

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
5606.4.3	3306.4.2	CCC10-IFC-14
5606.5	3306.5	CCC10-IFC-14
5606.5.1	3306.5.1	CCC10-IFC-14
5606.5.1.1	3306.5.1.1	CCC10-IFC-14
5606.5.2	3306.5.2	CCC10-IFC-14

**CHAPTER 57
FLAMMABLE AND COMBUSTIBLE LIQUIDS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
5701.2	F95-13 AMPC, F284-13	
5704.2.5		F314-13
5704.2.7.1		F315-13
Deleted	5704.2.7.3.6	F316-13
5704.2.7.6		F282-13
5704.2.9.4	E2-12 Part III AMPC	
Deleted	5704.2.9.7.3	F317-13
Deleted	5704.2.11.1	F315-13
5704.2.11.4.1	5704.2.11.5.1	ADM43-13 Part II, F315-13
5704.3.3.2		F318-13
Table 5704.3.6.3(7)		F319-13
Table 5704.3.7.5.1		F319-13
5704.3.8.5		F319-13
5705.5		F320-13
5705.5.1		F320-13
5706.5.1.13	E2-12 Part III AMPC	
5706.5.4.5	ADM43-13, Part II	

**CHAPTER 58
FLAMMABLE GASES AND FLAMMABLE CRYOGENIC FLUIDS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
508.1.1		F323-13
5802.1		
GASEOUS HYDROGEN SYSTEM (New)		G14-13
HYDROGEN FUEL GAS ROOM		G14-13
5803.1.1		F324-13
5806.4.8.2	ADM43-13 Part II	
5808 thru 5808.7		G14-13

**CHAPTER 60
HIGHLY TOXIC AND TOXIC MATERIALS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
6003.1.4.1		F325-13
6003.1.5.2		F326-13
6003.1.5.3		F326-13

6004.2.2.8	F59-13 Part I
6004.2.2.8.1 (New)	F59-13 Part I

**CHAPTER 61
LIQUEFIED PETROLEUM GASES**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
6105.2		F329-13
6106.2		F330-13
6107.4		F331-13
6109.13		F331-13

**CHAPTER 62
ORGANIC PEROXIDES**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
6204.1.11		F59-13 Part I
6204.1.11.1 (New)		F59-13 Part I

**CHAPTER 63
OXIDIZERS, OXIDIZING GASES AND OXIDIZING CRYOGENIC FLUIDS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
6303.1.1.2		F334-13
6303.2		F334-13
Table 6303.2	Table 6304.1.7(1)	F334-13
Deleted	6304.1.1	F334-13
Deleted	6304.1.2	F334-13
6304.1.2	6304.1.4	F334-13
Deleted	Table 6304.1.2	F334-13
6304.1.5	6304.1.7	F334-13
Table 6304.1.5(1)	Table 6304.1.7(2)	F334-13
Table 6304.1.5(2)	Table 6304.1.7(3)	F334-13
6304.1.6	6304.1.8	F334-13
6304.1.8 (New)		F334-13
6304.1.8.1 (New)		F334-13
Deleted	6304.2.1	F334-13

**CHAPTER 80
REFERENCED STANDARDS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
CHAPTER 80	CHAPTER 80	ADM62-13
ASTM		F95-13 AMPC, F103-13
NFPA		F45-13
UL		F57-13 AMPC1, 2, F95-13 AMPC

**APPENDIX B
FIRE-FLOW REQUIREMENTS FOR BUILDINGS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
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B105.1.....	F340-13
Table B105(1) (New).....	F340-13
B105.2.....	F340-13
Table B105(2) (New).....	F340-13
B105.3 (New).....	F340-13

APPENDIX B - continued

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
Table B105(3).....	Table B105(1)	F340-13
B106.....		F340-13

**APPENDIX C
GROUP U – AGRICULTURAL BUILDINGS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
C101.1.....		F337-13
Deleted.....	C102	F337-13
Deleted.....	C102.1	F337-13
C102.....	C103	F337-13
Deleted.....	C104	F337-13
Deleted.....	C104.1	F337-13
C103.....	C105	F337-13
C103.1.....	C105.1	F337-13
C103.2 (New).....		F337-13
C103.3 (New).....		F337-13
Table C102.1.....	C105.1	F337-13
C104 thru C104.1 (New)		F337-13

**APPENDIX D
FIRE APPARATUS ACCESS ROADS**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
D103.5.....		F339-13
D106.3 (New).....		F341-13
D107.1.....		F342-13
D107.2 (New).....		F342-13

**APPENDIX E
HAZARD CATEGORIES**

2015 IFC	2012 IFC	CODE CHANGE NUMBER(S)
E102.1.7.1		F343-13

**APPENDIX K (NEW)
CONSTRUCTION REQUIREMENTS FOR EXISTING
AMBULATORY CARE FACILITIES**

2015 IFC	CODE CHANGE NUMBER(S)
K101.1 thru K105 (New).....	F344-13

**APPENDIX L (NEW)
REQUIREMENTS FOR FIREFIGHTER AIR
REPLENISHMENT SYSTEMS**

2015 IFC	CODE CHANGE NUMBER(S)
L101 thru L107 (New).....	F346-13

**APPENDIX M (NEW)
HIGH-RISE BUILDINGS-RETROACTIVE AUTOMATIC
SPRINKLER REQUIREMENT**

2015 IFC	CODE CHANGE NUMBER(S)
M101.1 thru M103.1 (New).....	F347-13

Code Change No: **F3-13**

Original Proposal

Section(s): 202 (IBC [F] 202)

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

SECTION 202 (IBC [F] 202) GENERAL DEFINITIONS

DECORATIVE MATERIALS. All materials applied over the building interior finish for decorative, acoustical or other effect (~~such as including, but not limited to,~~ curtains, draperies, fabrics, and streamers and surface coverings), and all other materials utilized for decorative effect (~~such as including, but not limited to,~~ bulletin boards, artwork, posters, photographs, paintings, batting, cloth, cotton, hay, stalks, straw, vines, leaves, trees, moss and similar items), including foam plastics and materials containing foam plastics. Decorative materials do not include wall coverings, ceiling coverings, floor coverings, ordinary window shades, interior finish and materials 0.025 inch (0.64 mm) or less in thickness applied directly to and adhering tightly to a substrate.

Reason: This is just a small cleanup in the definition of decorative materials to be consistent with section 807 of the code.

Cost Impact: Minimal

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The revision to the definition of combustible decorative materials correlates with the revisions to F109-13. F109-13 clarifies and reorganizes Section 807 dealing with decorative materials. Some concern was expressed with regard to the increase in the laundry list of items and specifically with the addition of the term 'bulletin boards' due to the variety of materials that could be used for bulletin boards..

Assembly Action:

None

Final Hearing Results

F3-12

AS

Code Change No: F6-13

Original Proposal

Section(s): 202 (IBC [F] 202)

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

SECTION 202 (IBC [F] 202) GENERAL DEFINITIONS

FLAMMABLE SOLID. A solid, other than a blasting agent or *explosive*, that is capable of causing fire through friction, absorption of moisture, spontaneous chemical change or retained heat from manufacturing or processing, or which has an ignition temperature below 212°F (100°C) or which burns so vigorously and persistently when ignited as to create a serious hazard. A chemical shall be considered a flammable solid as determined in accordance with the test method of CPSC 16 CFR Part 1500.44, if it ignites and burns with a self-sustained flame at a rate greater than ~~0.4~~ 0.0866 inch (~~2.5 mm~~ 2.2 mm) per second along its major axis.

Reason: The definition proposed is in line with GHS [Globally Harmonized System] which is now adopted by OSHA. When an MSDS is prepared today, a material classified as "Flammable Solids" is typically based on this definition and not the previous definition [existing language in the Fire Code]. For additional details please see <http://www.osha.gov/dsg/hazcom/ghs.html>.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The disapproval was based on the committee's judgment that the code change could be the beginning of a trend toward acceptance of OSHA definitions which are much different than IFC definitions and are focused on worker and work-place safety only.

Assembly Action:

None

Public Comment

Public Comment:

Elley Klausbruckner, representing Klausbruckner & Associates Inc., requests Approval as Submitted.

Commenter's Reason: The issue that this code change is attempting to resolve has nothing to do with trends but is a practical one. Chemicals are classified by using data in the Materials Safety Data Sheet [MSDS]. Unlike flammable/combustible liquids, where locations are provided data entry of flashpoint and boiling point, data on combustibility of a dust, as well as method of testing, is typically not found on an MSDS. The MSDS will simply indicate "Combustible Dust" in the MSDS. The MSDS typically follows the definitions of OSHA as well as GHS. Therefore the person classifying the material [whether it be an AHJ or an industry] cannot determine for certain whether the dust is combustible based on the definitions in the fire code. Whether an individual classifies a material as Combustible Dust or not, based on the statement in an MSDS, it will subject that person classifying the product to liability.

Given that the definitions between OSHA and the Fire Code are close [self-sustained flame at a rate greater than 0.1 0.0866 inch (2.5 mm 2.2 mm) per second] this would be a minor adjustment in definitions.

Final Hearing Results

F6-12

AS

Code Change No: **F9-13**

Original Proposal

Section(s): 305.5 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

305.5 Unwanted Fire Ignitions. Where acts or processes have caused repeated ignitions of unwanted fires, the act or process shall be modified to prevent future ignitions.

Reason: Many industrial processes have the potential to produce nuisance fires that generate unwanted alarms necessitating emergency responses which risk health and safety of firefighters and citizens. No other section of the code currently empowers the fire code official to mitigate such nuisance fires.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and because reducing repeated unnecessary emergency responses will increase community and firefighter safety.

Assembly Action:

None

Final Hearing Results

F9-12

AS

Code Change No: F13-13

Original Proposal

Section(s): 308.1.6.3 (New), 202 (New)

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Add new text as follows:

308.1.6.3 Sky lanterns. No person shall release or cause to be released an untethered sky lantern.

Add new definition as follows:

SECTION 202 GENERAL DEFINITIONS

SKY LANTERN. An unmanned device with a combustible fuel source that incorporates an open flame in order to make the device airborne.

Reason: Sky lanterns contain an open flame used to heat the air inside the device to make it airborne. Once airborne, these devices are subject to winds and other atmospheric conditions so that the location of the landfall is completely unknown and uncontrolled by the user. Obviously, uncontrolled open flame devices descending out of the sky have the significant potential to start wildfires and structural fires.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

SKY LANTERN. An unmanned device with a ~~combustible~~ fuel source that incorporates an open flame in order to make the device airborne.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee approved the code change based on the proponent's reason statement that untethered flaming sky effects pose an uncontrollable ignition hazard. The modification recognizes that the fuel package may not be limited to combustible fuel but could include flammable fuels as well.

Assembly Action:

None

Final Hearing Results

F13-13

AM

Code Change No: F14-13

Original Proposal

Section(s): 310.3.1 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

310.3.1 Group I-2. In Group I-2 occupancies where smoking is prohibited, "No Smoking " signs are not required in interior locations of the facility where signs are displayed at all major entrances into the facility.

Reason: This proposal will provide correlation with NFPA 101 Section 19.7.4.2 which contains an exception for healthcare occupancies that allows for a facility to not install secondary "No Smoking Signs" throughout a facility if primary signs are prominently displayed at all major entrances. This exception is not currently included in the IFC. Since healthcare facilities already prohibit smoking, where signs are posted at the entrances it is redundant and unnecessary to also require the signs to be posted throughout a facility that does not permit smoking, has a staff trained to monitor and policies in place to quickly stop or prevent the action.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

Cost impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and felt that it was a common sense change.

Assembly Action:

None

Final Hearing Results

F14-13

AS

Code Change No: F15-13

Original Proposal

Section(s): 312.3

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

SECTION 312 VEHICLE IMPACT PROTECTION

312.1 General. Vehicle impact protection required by this code shall be provided by posts that comply with Section 312.2 or by other *approved* physical barriers that comply with Section 312.3.

312.2 Posts. Guard posts shall comply with all of the following requirements:

1. Constructed of steel not less than 4 inches (102 mm) in diameter and concrete filled.
2. Spaced not more than 4 feet (1219 mm) between posts on center.
3. Set not less than 3 feet (914 mm) deep in a concrete footing of not less than a 15-inch (381 mm) diameter.
4. Set with the top of the posts not less than 3 feet (914 mm) above ground.
5. Located not less than 3 feet (914 mm) from the protected object.

312.3 Other barriers. ~~Physical barriers shall be a minimum of 36 inches (914 mm) in height and shall resist a force of 12,000 pounds (53 375 N) applied 36 inches (914 mm) above the adjacent ground surface.~~ Barriers other than posts specified in Section 312.2 that are designed to resist, deflect or visually deter vehicular impact commensurate with an anticipated impact scenario shall be permitted when approved.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Contrary to what one might assume by reading the code, the current text of Section 312.3 is not a performance-based alternative design basis for the prescriptive provisions in Section 312.2. Instead, the two sections provide redundant and unrelated approaches to providing impact barriers, and there is no known technical relationship between the two design approaches. Section 312.2 was sourced from the Uniform Fire Code, and it was included in the IFC so that jurisdictions transitioning from the Uniform Fire Code to the IFC would not be forced into having to follow new barrier design criteria. Likewise, Section 312.3 was sourced from the BOCA National Fire Prevention Code, and it was included in the IFC so that jurisdictions transitioning from the BOCA National Fire Prevention Code to the IFC would not be forced into having to follow new barrier design criteria. Given that the 2015 IFC will be the 6th IFC edition following the consolidation of legacy codes; it no longer makes sense to retain this inconsistency. The prescriptively specified bollards specified by Section 312.2 are well-established as the default norm for compliance.

This change revises Section 312.3 so that it is truly a performance option to Section 312.2. The text deliberately establishes a broad set of goals that must be achieved by the designer to fit a site-specific application, and the requirement places the onus on the designer to demonstrate selection of a satisfactory design scenario and a suitable solution to achieve approval by the fire code official. Although one might argue that Section 312.3 might simply be deleted in favor of relying on Section 104.9 (alternate materials and methods), it makes more sense to include the suggested guidance in Section 312.3. In reviewing this proposal, some may wonder whether it is appropriate to maintain the currently specified 12,000 pound "force" criteria. The answer is "no." This was deliberately deleted for a couple reasons. First, the 12,000-pound "force" is actually specified as a static load, i.e. a load with no associated impact velocity or acceleration. Without knowing an intended impact velocity, the

kinetic energy resistance for a barrier cannot be accurately calculated. It is more appropriate for a performance requirement to accommodate determination of a suitable vehicle weight and impact speed as a design basis.

Cost Impact: This code change proposal will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and because the proposal provides a more performance oriented and workable approach than the current text. The proposal was also supported by tests of the methodology (see also code change F331-13). The revision will give the fire code official greater flexibility in dealing with impact protection.

Assembly Action:

None

Final Hearing Results

F15-13

AS

Code Change No: F18-13

Original Proposal

Section(s): 315.6 (New), 202 (New)

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

315.6 Storage in Plenums in Group I Occupancies. Storage shall not be permitted in plenums in Group I occupancies. Abandoned material in plenums in Group I occupancies shall be deemed to be storage and shall be removed. The accessible portion of abandoned cables in plenums in Group I occupancies that are not identified for future use with a tag shall be deemed storage and shall be removed.

SECTION 202 GENERAL DEFINITIONS

[M] PLENUM. An enclosed portion of the building structure, other than an occupiable space being conditioned, that is designed to allow air movement, and thereby serve as part of an air distribution system.

Reason: This new section is intended to introduce a concept that has been in the National Electrical Code (as well as in NFPA 90A) for a long time: plenums are intended for a specific use (see definition below), namely to be a part of the air distribution system so as to allow air movement. Plenums are also used (legitimately) for stringing communications and data cables as well as pipes and sprinkler pipes and other similar products. However, in actual fact, it is a common practice not to make the effort to remove products when they become obsolete. Examples include when an updated data system is being installed in the facility (and that typically occurs every 18-24 months). Normally, as the building is being rewired the old wires are cut off the grid but they are left in place and a new wiring system is added on top of them.

The tiles that often support plenums are not intended to support any significant weight and they can, therefore easily be overwhelmed by the added weight of storage or abandoned materials (such as abandoned cables). Recently, Bob Davidson and Sean DeCrane (Plenum Space Fuel Load, NFPA Annual Meeting 2009, M33) did an analysis that showed how the safety of firefighters is compromised by the weight of these abandoned cables. They point out that: "Plenum space fuel loads and wiring issues are a serious concern for fire fighters during interior firefighting operations." Their key recommendation was: "Take out the abandoned wiring!!"

Although the primary reason to recommend the removal of abandoned materials in plenums is weight, fire safety should also be taken into account.

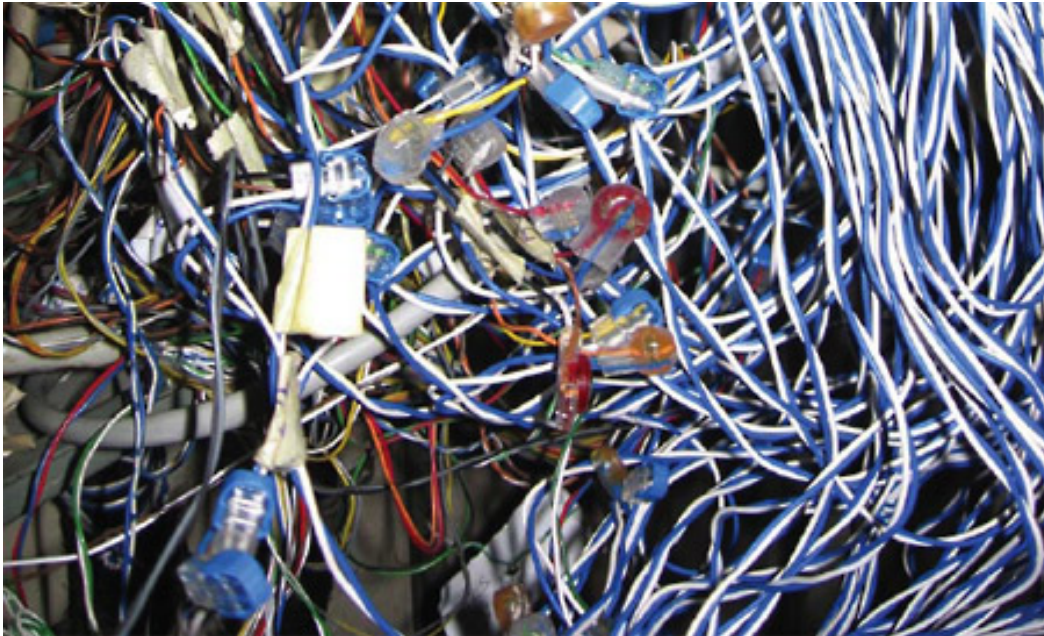
The introduction of a requirement such as the one being proposed here has long been believed not to be enforceable. This is probably true if it were to apply to all occupancies, primarily because fire code inspectors would rarely spend their time looking into plenums in existing buildings. However, the inspection of I occupancies occurs with enough regularity that there should be no significant difficulty in having inspectors identify the existence of abandoned products, especially abandoned cables, classify them as storage and demand their removal.

The proposal recommends that only the "accessible portions" of abandoned cables be removed, because there is no intent to cause potential damage to the building or facility by attempting to remove cables or circuits that are strung through walls, floors or other building elements.

This is a safety issue associated with the safety of firefighters and not an issue of the construction of the plenums (or of the use of materials installed in plenums) and is, therefore, suitable for the IFC and not the IMC. Note that the IMC does not specifically prohibit the use of plenums for storage, presumably because such a requirement would not be associated with the construction of the plenums. This issue is associated with General Safety Provisions and is, therefore, primarily suitable for the IFC.

Duplicating the IMC definition of PLENUM in the IFC will assist the fire code official in enforcement of this section.

Photographs of typical wiring in plenums, as found by Davidson and DeCrane, follow:



Cost Impact: Minimal

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

315.6 Storage in Plenums in ~~Group I Occupancies~~. Storage shall not be permitted in plenums in ~~Group I occupancies~~. Abandoned material in plenums in ~~Group I occupancies~~ shall be deemed to be storage and shall be removed. The accessible portion of abandoned cables in plenums in ~~Group I occupancies~~ that are not identified for future use with a tag shall be deemed storage and shall be removed.

Committee Reason: The committee approved the code change based on the proponent's reason statement. The modification recognizes that the problem is not limited to only Group I occupancies.

Assembly Action:

None

Final Hearing Results

F18-13

AM

Code Change No: F19-13

Original Proposal

Section(s): 318.1

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

318.1 Laundry carts with a capacity of 1 cubic yard or more. Laundry carts with an individual capacity of 1 cubic yard [200 gallons (0.76 m³)] or more, used in laundries within Group B, E, F-1, I, M and R-1 occupancies shall be constructed of noncombustible materials or materials having a peak rate of heat release not exceeding 300 kW/m² at a flux of 50 kW/m² when tested in a horizontal orientation in accordance with ASTM E 1354.

Exceptions:

1. Laundry carts in areas protected by an *approved automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1.
2. Laundry carts in coin-operated laundries.
3. Laundry carts in day care facilities.

Reason: Laundry carts are likely to be equally (if not more) hazardous in Group E and M occupancies as in B occupancies. The addition of these occupancies should improve fire safety.

Cost Impact: Minimal

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

318.1 Laundry carts with a capacity of 1 cubic yard or more. Laundry carts with an individual capacity of 1 cubic yard [200 gallons (0.76 m³)] or more, used in laundries within Group B, E, F-1, I, M and R-1 occupancies shall be constructed of noncombustible materials or materials having a peak rate of heat release not exceeding 300 kW/m² at a flux of 50 kW/m² when tested in a horizontal orientation in accordance with ASTM E 1354.

Exceptions:

1. Laundry carts in areas protected by an *approved automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1.
2. Laundry carts in coin-operated laundries.
3. ~~Laundry carts in day care facilities.~~

Committee Reason: The committee approved the code change based on the proponent's reason statement. The modification reflects the committee's opinion that the hazard is the same in day care facilities and they should not get an exception.

Assembly Action:

None

Final Hearing Results

F19-13

AM

Code Change No: F22-13

Original Proposal

Section(s): 403.2

Proponent: Stephen DiGiovanni, Clark County, NV Fire Department, representing self.

Revise as follows:

403.2 Public safety plan. ~~In other than Group A or E occupancies, w~~Where the fire code official determines that an indoor or outdoor gathering of persons has an adverse impact on public safety through diminished access to buildings, structures, fire hydrants and fire apparatus access roads or where such gatherings adversely affect public safety services of any kind, the fire code official shall have the authority to order the development of, or prescribe a plan for, the provision of an approved level of public safety.

Reason: The exception that eliminates this section from applying to Group A and E occupancies is removed. The majority of crowd management issues occur in places that are considered assembly occupancies. As such, this section would most reasonably apply to Group A occupancies. In addition, Group E occupancy buildings typically are public buildings that are used for a variety of functions that involve gathering of persons. These may be school functions or other community functions, such as voting locations, religious functions, etc. As such, this section would also apply to Group E occupancies. Removing this phrase permits the fire code official to address safety concerns stemming from public gatherings in all buildings, not just a select few.

Cost Impact: This proposal would increase the costs of holding indoor and outdoor gatherings in Group A and Group E occupancies where required by the fire code official to have a public safety plan.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and felt that the change will give the fire code official more flexibility in dealing with gatherings.

Assembly Action:

None

Final Hearing Results

F22-13

AS

Code Change No: F24-13

Original Proposal

Section(s): 403.3.1 (New), 403.3.2 (New)

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

403.3.1 Training. Training for crowd managers shall be approved.

403.3.2 Duties. The duties of crowd managers shall include, but not be limited to:

1. Conduct an inspection of the area of responsibility and identify and address any egress barriers.
2. Conduct an inspection of the area of responsibility to identify and mitigate any fire hazards.
3. Verify compliance with all permit conditions, including those governing pyrotechnics and other special effects.
4. Direct and assist the event attendees in evacuation during an emergency.
5. Assist emergency response personnel where # requested.
6. Other duties required by the fire code official.
7. Other duties as specified in the fire safety plan

Reason: The Code requires "trained crowd managers", but doesn't provide any guidance or describe what that training should include. This has been an ongoing issue for enforcement personnel. This change is intended to address that void.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change provides needed specific guidance in the duties for crowd managers in support of the changes made in code change F23-13.

Assembly Action:

None

Final Hearing Results

F24-13

AS

Code Change No: F25-13

Original Proposal

Section(s): 403, 404, 405, 406.1.1, 406.3.3, 408, 311.6

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

SECTION 403 408 **~~USE AND OCCUPANCY RELATED EMERGENCY PREPAREDNESS REQUIREMENTS~~**

~~403.1 408.1~~ General. In addition to the requirements of Section 401, occupancies, uses and outdoor locations shall comply with the emergency preparedness requirements set forth in Sections 403.2 through 403.11. Where a firesafety and evacuation plan is required by Sections 403.2 through 403.11, evacuation drills shall be in accordance with Section 405 and employee training shall be in accordance with Section 406. In addition to the other requirements of this chapter, the provisions of this section are applicable to specific occupancies listed herein.

~~403.2 408.2~~ Group A occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group A occupancies, other than those occupancies used exclusively for purposes of religious worship with an occupant load less than 2,000, and for buildings containing both a Group A occupancy and an atrium. Group A occupancies shall also comply with the requirements of Sections 403.2.1 through 403.2.4 408.2.1 and 408.2.2 and Sections 401 through 406.

~~403.2.1 408.2.1~~ Seating plan. In addition to the requirements of Section 404.2, the fire safety and evacuation plans for assembly occupancies shall include the information required by Section 404.3 and a detailed seating plan, occupant load and occupant load limit. Deviations from the approved plans shall be allowed provided the occupant load limit for the occupancy is not exceeded and the aisles and exit accessways remain unobstructed.

~~403.2.2 408.2.2~~ Announcements. *(No change to current text)*

~~403.2.3~~ Fire watch personnel. Fire watch personnel shall be provided where required by Section 403.11.1.

~~403.2.4~~ Crowd managers. Crowd managers shall be provided where required by Section 403.11.3.

~~403.3~~ Group B occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group B occupancy where the Group B occupancy has an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.

~~403.4~~ Group E occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group E occupancies and for buildings containing both a Group E occupancy and an atrium. Group E occupancies shall also comply with Section 403.4.1

~~403.4.1 408.3~~ Group E occupancies and Group R-2 college and university buildings. Group E occupancies shall comply with the requirements of Sections 403.4.1.1 through 403.4.1.3 408.3.1 through

~~408.3.4 and Sections 401 through 406. Group R-2 college and university buildings shall comply with the requirements of Sections 408.3.1 and 408.3.3 and Sections 401 through 406.~~

403.4.1.1 408.3.1 First emergency evacuation drill. *(No change to current text)*

~~**408.3.2 Emergency evacuation drill deferral.** In severe climates, the *fire code official* shall have the authority to modify the emergency evacuation drill frequency specified in Section 405.2.~~

403.4.1.2 408.3.3 Time of day. Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or gymnastic periods, or during other times to avoid distinction between drills and actual fires. ~~In Group R-2 college and university buildings, one required drill shall be held during hours after sunset or before sunrise.~~

403.4.1.3 408.3.4 Assembly points. *(No change to current text)*

403.5 Group F occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group F occupancy where the Group F occupancy has an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge .

403.6 Group H Occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group H occupancies. Group H-5 occupancies shall also comply with Section 403.6.1.

403.6.1 408.4 Group H-5 occupancies. ~~Group H-5 occupancies shall comply with the requirements of Sections 403.6.1.1 through 403.6.1.4 408.4.1 through 408.4.4 and Sections 401 through 407.~~

403.6.1.1 408.4.1 Plans and diagrams. *(No change to current text)*

403.6.1.2 408.4.2 Plan updating. The plans and diagrams required by Section 404, 403.6.1.1 and 407.6~~408.4.1~~ shall be maintained up to date and the *fire code official* and fire department shall be informed of all major changes.

403.6.1.3 408.4.3 Emergency response team. Responsible persons shall be designated ~~the~~ as an on-site emergency response team and trained to be liaison personnel for the fire department. These persons shall aid the fire department in preplanning emergency responses, identifying locations where HPM is stored, handled and used, and be familiar with the chemical nature of such material. An adequate number of personnel for each work shift shall be designated.

403.6.1.4 408.4.4 Emergency drills. *(No change to current text)*

403.7 Group I occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group I occupancies. Group I occupancies shall also comply with Sections 403.7.1 through 403.7.3

403.7.1 408.5 Group I-1 occupancies. ~~Group I-1 occupancies shall comply with the requirements of Sections 403.7.1.1 through 403.7.1.6 408.5.1 through 408.5.5 and Sections 401 through 406.~~

403.7.1.1 408.5.1 Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special staff-employee actions, including fire protection procedures necessary for residents, and shall be amended or revised upon admission of any resident with unusual needs.

403.7.1.2 408.5.2 Staff-Employee training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by ~~the staff~~

employees at intervals not exceeding ~~least every two months~~. A copy of the plan shall be readily available at all times within the facility.

403.7.1.3 ~~408-5.3~~ Resident training. *(No change to current text)*

403.7.1.4 ~~408-5.4~~ Drill frequency. *(No change to current text)*

403.7.1.5 ~~Drills times~~. Drills times are not required to comply with ~~the time requirements~~ of Section 405.4.

403.7.1.6 ~~408-5.5~~ Resident participation in drills. *(No change to current text)*

403.7.2 ~~408-6~~ Group I-2 occupancies. Group I-2 occupancies shall comply with ~~the requirements of Sections 403.7.2.1 through 403.7.2.3~~ ~~408-6.1 and 408-6.2~~ and ~~Sections 401 through 406~~.

403.7.2.1 ~~Drills times~~. Drills times are not required to comply with ~~the time requirements~~ of Section 405.4.

403.7.2.2 ~~408-6.1~~ Evacuation not required. *(No change to current text)*

403.7.2.3 ~~408-6.2~~ Coded alarm signal. *(No change to current text)*

403.7.3 ~~408-7~~ Group I-3 occupancies. Group I-3 occupancies shall comply with ~~the requirements of Sections 403.7.3.1 through 403.7.3.4~~ ~~408-7.1 through 408-7.4~~ and ~~Sections 401 through 406~~.

403.7.3.1 ~~408-7.1~~ Employee training. Employees shall be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment. Training of new ~~staff~~ employees shall be provided promptly upon entrance on duty. Refresher training shall be provided at least annually.

403.7.3.2 ~~408-7.2~~ Employee sStaffing. Group I-3 occupancies shall be provided with 24-hour staffing. ~~Staff~~ An employee shall be within three floors or 300 feet (91 440 mm) horizontal distance of the access door of each resident housing area. In ~~Use-Conditions 3, 4 and 5~~, as defined in "Occupancy Classification – Institutional Group I-3" in Chapter 2, the arrangement shall be such that the ~~staff~~ employee involved can start release of locks necessary for emergency evacuation or rescue and initiate other necessary emergency actions within 2 minutes of an alarm.

Exception: ~~An employee~~ Staff shall not be required to be within three floors or 300 feet (9144 mm) in areas in which all locks are unlocked remotely and automatically in accordance with Section 408.4 of the *International Building Code*.

403.7.3.3 ~~408-7.3~~ Notification. Provisions shall be made for residents in ~~Use-Conditions 3, 4 and 5~~, as defined in "Occupancy Classification – Institutional Group I-3" in Chapter 2, to readily notify ~~an employee~~ staff of an emergency.

403.7.3.4 ~~408-7.4~~ Keys. Keys necessary for unlocking doors installed in a *means of egress* shall be individually identifiable by both touch and sight.

403.8 ~~Group M~~ occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group M occupancy, where the Group M occupancy has an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge, and for buildings containing both a Group M occupancy and an atrium.

403.9 ~~Group R~~ occupancies.

403.9.1 ~~408-8~~ Group R-1 occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-1 occupancies. Group R-1 occupancies shall also comply with the requirements of Sections 403.9.1.1 through 403.9.1.3 ~~408-8.1 through 408-8.3~~ and ~~Sections 401 through 406~~.

403.9.1.1 ~~408-8.1~~ Evacuation diagrams. (No change to current text)

403.9.1.2 ~~408-8.2~~ Emergency duties. (No change to current text)

403.9.1.3 ~~408-8.3~~ Fire safety and evacuation instructions. (No change to current text)

403.9.2 ~~408-9~~ Group R-2 occupancies. Group R-2 occupancies shall comply with the requirements of Sections 403.9.2.1 through 403.9.2.3~~408-9.1 through 408-9.4~~ and Sections ~~401 through 406~~.

403.9.2.1 ~~408-9.1~~ College and University Buildings. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-2 college and university buildings. Group R-2 college and university buildings shall also comply with Sections 403.9.2.1 and 403.9.2.2.

403.9.2.1.1 ~~408-9.1.1~~ First emergency evacuation drill. The first emergency evacuation drill of each school year shall be conducted within 10 days of the beginning of classes.

403.9.2.1.2 ~~408-9.1.2~~ Time of day. Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or gymnastic periods, or during other times to avoid distinction between drills and actual fires. One required drill shall be held during hours after sunset or before sunrise.

403.9.2.2 ~~408-9.2~~ Emergency guide. Fire emergency guides shall be provided for Group R-2 occupancies. Guide contents, maintenance and distribution shall comply with Sections 403.9.2.2.1 through 403.9.2.2.3

403.9.2.2.1 ~~408-9.2.1~~ Guide contents. A fire emergency guides shall be provided which describes the location, function and use of fire protection equipment and appliances accessible to residents, including fire alarm systems, smoke alarms, and portable fire extinguishers. The guides shall also include an emergency evacuation plan for each *dwelling unit*.

403.9.2.2.2 ~~408-9.2.2~~ Emergency guide maintenance. Emergency guides shall be reviewed and approved by the *fire code official* in accordance with Section 401.2. Evacuation diagrams shall be reviewed and updated in accordance with Section 404.4.

403.9.2.2.3 ~~408-9.2.3~~ Emergency guide distribution. (No change to current text)

403.9.2.3 ~~408-9.3~~ Evacuation diagrams for dormitories. A diagram depicting two evacuation routes shall be posted on or immediately adjacent to every required egress door from each dormitory sleeping unit. Evacuation diagrams shall be reviewed and updated as needed to maintain accuracy.

403.9.3 ~~408-10~~ Group R-4 occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-4 occupancies. Group R-4 occupancies shall also comply with the requirements of Sections 403.9.3.1 through 403.9.3.6~~408-10.1 through 408-10.5~~ and Sections 401 through 406.

403.9.3.1 ~~408-10.1~~ Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special ~~staff~~ *employee* actions, including fire protection procedures necessary for residents, and shall be amended or revised upon admission of a resident with unusual needs.

403.9.3.2 ~~408-10.2~~ Staff-Employee training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by employees at intervals not exceeding ~~the staff at least every~~ two months. A copy of the plan shall be readily available at all times within the facility.

403.9.3.3 ~~408-10.3~~ Resident training. (No change to current text)

403.9.3.4 408-10.4 Drill frequency. (No change to current text)

403.9.3.5 Drill times. Drills times are not required to comply with the time requirements of Section 405.4.

403.9.3.6 408-10.5 Resident participation in drills. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All required exits shall be used during emergency evacuation drills.

Exception: Actual exiting from windows shall not be required. Opening the window and signaling for help shall be an acceptable alternative.

403.10 Special uses. Special uses shall be in accordance with Sections 403.10.1 through 403.10.3.

403.10.1 408-11 Covered and open mall buildings. Covered and open mall buildings shall comply with the provisions-requirements of Sections 403.10.1.1 through 403.10.1.6~~408-11.1 through 408-11.3.~~

403.10.1.1 Malls and mall buildings exceeding 50,000 square feet. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for covered malls exceeding 50,000 square feet (4645 m²) in aggregate floor area and for open mall buildings exceeding 50,000 square feet (4645 m²) in aggregate area within the perimeter line.

403.10.1.2 408-11.1 Lease plan. In addition to the requirements of Section 404.2.2, a lease plan that includes the following information shall be prepared for each covered and open mall building:~~The plan shall include the following information in addition to that required by Section 404.3.2:~~

1. Each occupancy, including identification of tenant.
2. *Exits* from each tenant space.
3. Fire protection features, including the following:
 - 3.1. Fire department connections.
 - 3.2. *Fire command center.*
 - 3.3. Smoke management system controls.
 - 3.4. Elevators, elevator machine rooms and controls.
 - 3.5. Hose valve outlets.
 - 3.6. Sprinkler and standpipe control valves.
 - 3.7. Automatic fire-extinguishing system areas.
 - 3.8. Automatic fire detector zones.
 - 3.9. *Fire barriers.*

403.10.1.3 408-11.1.4 Lease plan approval. (No change to current text)

403.10.1.4 408-11.1.2 Lease plan revisions. (No change to current text)

403.10.1.5 408-11.2 Tenant identification. Tenant identification shall be provided for secondary exits from occupied tenant spaces that lead to an *exit corridor* or directly to the exterior of the building. ~~Each occupied tenant space provided with a secondary exit to the exterior or exit corridor shall be provided with tenant identification by~~ Tenant identification shall be posted on the exterior side of the exit or exit access door and shall identify the business name and/or address. ~~Letters and numbers shall be posted on the corridor side of the door, be~~ using plainly legible letters and numbers that and shall contrast with their background.

Exception: Tenant identification is not required for anchor stores.

(Section 408.11.3 Moved to new Section 311.6)

403.10.1.6 Unoccupied tenant spaces. The fire safety and evacuation plan shall provide for compliance with the requirements for unoccupied tenant spaces in Section 311.

403.10.2 High-rise buildings. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for high-rise buildings.

403.10.3 Underground buildings. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for underground buildings.

403.11 Special requirements for public safety. Special requirements for public safety shall be in accordance with Sections 403.11.1 through 403.11.3.1.

SECTION 403 PUBLIC ASSEMBLAGES AND EVENTS

403.11.1403.4 Fire watch personnel. When, in the opinion of the *fire code official*, it is essential for public safety in a place of assembly or any other place where people congregate, because of the number of persons, or the nature of the performance, exhibition, display, contest or activity, the *owner*, agent or lessee shall provide one or more fire watch personnel, as required and *approved*. Fire watch personnel shall comply with Sections 403.11.1.1 and 403.11.1.2, to remain on duty during the times such places are open to the public, or when such activity is being conducted.

403.1.1 Duties. ~~Fire watch personnel shall keep diligent watch for fires, obstructions to means of egress and other hazards during the time such place is open to the public or such activity is being conducted and take prompt measures for remediation of hazards, extinguishment of fires that occur and assist in the evacuation of the public from the structures.~~

403.11.1.1 Duty Times. Fire watch personnel shall remain on duty during the times places requiring a fire watch are open to the public, or when an activity requiring a fire watch is being conducted.

403.11.1.2 Duties. On-duty fire watch personnel shall have the following duties:

1. Keep diligent watch for fires, obstructions to means of egress and other hazards
2. Take prompt measures for remediation of hazards and extinguishment of fires that occur
3. Take prompt measures to assist in the evacuation of the public from the structures.

403.11.2 403.2 Public safety plan for gatherings. In other than Group A or E occupancies, where the *fire code official* determines that an indoor or outdoor gathering of persons has an adverse impact on public safety through diminished access to buildings, structures, fire hydrants and fire apparatus access roads or where such gatherings adversely affect public safety services of any kind, the *fire code official* shall have the authority to order the development of or prescribe a public safety plan that provides an approved level of public safety and addresses the following items; ~~or prescribe a plan for, the provision of an approved level of public safety.~~

403.2.1 Contents. ~~The public safety plan, where required by Section 403.2, shall address such items~~

- ~~1. as Emergency vehicle ingress and egress~~
- ~~2. Fire protection~~
- ~~3. Emergency egress or escape routes~~
- ~~4. Emergency medical services~~
- ~~5. Public assembly areas~~
- ~~6. and The directing of both attendees and vehicles, (including the parking of vehicles)~~
- ~~7. Vendor and food concession distribution~~
- ~~8. and The need for the presence of law enforcement~~
- ~~9. and The need for fire and emergency medical services personnel at the event.~~

403.11.3.1 ~~403.3~~ **Crowd managers for gatherings exceeding 1,000 people.** Trained crowd managers shall be provided for ~~Where~~ facilities or events ~~involve a gathering of where~~ more than 1,000 ~~people,~~ crowd managers shall be provided in accordance with Section 403.11.3.1 ~~persons congregate.~~ The minimum number of crowd managers shall be established at a ratio of one crowd manager to every 250 persons. ~~Where approved by the fire code official,~~ the ratio of crowd managers shall be permitted to be reduced where the facility is equipped throughout with an ~~approved automatic sprinkler system~~ or based upon the nature of the event.

403.11.3.1 Number of crowd managers. The minimum number of crowd managers shall be established at a ratio of one crowd manager ~~for~~ to every 250 persons.

Exception: Where *approved* by the *fire code official*, the ~~ratio number~~ of crowd managers shall be permitted to be reduced where the facility is equipped throughout with an *approved automatic sprinkler system* or based upon the nature of the event.

SECTION 404 FIRE SAFETY, ~~AND~~ EVACUATION AND LOCKDOWN PLANS

404.1 General. Where required by Section 403, fire safety, evacuation and lockdown plans and associated drills shall comply with the requirements of Sections 404.2 through ~~404.4.1~~404.5.1.

404.2 Where required. An ~~approved~~ fire safety and evacuation plan shall be prepared and maintained for the following occupancies and buildings:

- ~~1. Group A, other than Group A occupancies used exclusively for purposes of religious worship that have an occupant load less than 2,000.~~
- ~~2. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.~~
- ~~3. Group E.~~
- ~~4. Group F buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.~~
- ~~5. Group H.~~
- ~~6. Group I.~~
- ~~7. Group R-1.~~
- ~~8. Group R-2 college and university buildings.~~
- ~~9. Group R-4.~~
- ~~10. High-rise buildings.~~
- ~~11. Group M buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.~~
- ~~12. Covered malls exceeding 50,000 square feet (4645 m²) in aggregate floor area.~~
- ~~13. Open mall buildings exceeding 50,000 square feet (4645 m²) in aggregate area within perimeter line.~~
- ~~14. Underground buildings.~~
- ~~15. Buildings with an atrium and having an occupancy in Group A, E or M.~~

SECTION 405 EMERGENCY EVACUATION DRILLS

405.1 General. Emergency evacuation drills complying with ~~the provisions of this section.~~ Sections 405.2 through 405.9 shall be conducted at least annually ~~in the occupancies listed in Section 404.2~~ where firesafety and evacuation plans are required by Section 403 or when required by the *fire code official*. Drills shall be designed in cooperation with the local authorities.

405.2 Frequency. *(No change to current text)*

405.3 Leadership. *(No change to current text)*

405.4 Time. (No change to current text)

405.5 Record keeping. Records shall be maintained of required emergency evacuation drills and include the following information:

1. Identity of the person conducting the drill.
2. Date and time of the drill.
3. Notification method used.
4. ~~Staff members~~ Employees on duty and participating.
5. Number of occupants evacuated.
6. Special conditions simulated.
7. Problems encountered.
8. Weather conditions when occupants were evacuated.
9. Time required to accomplish complete evacuation.

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B ^c	Annually	Employees
Group E	Monthly ^a	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees ^b
Group R-1	Quarterly on each shift	Employees
Group R-2 ^d	Four annually	All occupants
Group R-4	Quarterly on each shift	Employees ^b
High-rise buildings	Annually	Employees

- a. ~~In severe climates, the fire code official shall have the authority to modify the emergency evacuation drill frequency.~~The frequency shall be allowed to be modified in accordance with Section 408.3.2.
- b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 403.9.3.6 ~~408-10.5~~. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.
- c. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
- d. Applicable to Group R-2 college and university buildings in accordance with Section 403.9.2.1 ~~408-3~~.

406.1 General. Where fire safety and evacuation plans are required by Section 403, ~~E~~employees in the occupancies listed in Section 404.2 shall be trained in the fire emergency procedures described in their fire evacuation and fire safety plans. Training shall be based on plans prepared in accordance with Section 404, ~~these plans and as described in Section 404.3.~~

406.3.3 Emergency lockdown training. Where a facility has a lockdown plan, employees shall be trained on their assigned duties and procedures in the event of an emergency lockdown. (moved to Section 406.4)

406.3.4 406.3.3 Fire safety training. (No change to current text)

406.4 ~~406.3.3~~ Emergency lockdown training. (No change to current text)

Revise as follows:

311.1 General. Temporarily unoccupied buildings, structures, premises or portions thereof, including tenant spaces, shall be safeguarded and maintained in accordance with Sections 311.1.1 through 311.5.65.

311.6. ~~408.11.3~~ MaintenanceUnoccupied tenant spaces in mall buildings. Unoccupied tenant spaces in covered and open mall buildings shall be:

1. Kept free from the storage of any materials.
2. Separated from the remainder of the building by partitions of at least 0.5-inch-thick (12.7 mm) gypsum board or an *approved* equivalent to the underside of the ceiling of the adjoining tenant spaces.
3. Without doors or other access openings other than one door that shall be kept key locked in the closed position except during that time when opened for inspection.
4. Kept free from combustible waste and be broomswept clean.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal restructures Chapter 4 to place all of the core requirements in the front of the chapter in Section 403. The current code splits such requirements between Section 404.2 and Section 408, making the code difficult to follow and apply. Section 403 in this proposal includes the requirements previously included in Sections 404.2 and 408, which have been merged by occupancy classification or as otherwise appropriate.

The overall intent of this proposal is editorial revision. Provisions have been relocated and text has been edited in an effort to clarify what is believed to be the current intent without technical change and to improve readability. One section dealing with maintenance of unoccupied tenant spaces in malls was determined to be improperly located in Chapter 4 and was moved to Chapter 3 with other vacant use regulations.

In preparing this proposal, it was noted that the provisions for emergency evacuation drills for Group I-1 (403.7.1.6 of the rewrite) and Group R-4 (403.9.3.6 of the rewrite) are not consistent. This may have been deliberate when Chapter 4 was originally written, but it warrants a review to determine if the inconsistency is appropriate.

One change that was made corrects an error made by the Code Correlation Committee when they made what was believed to be an editorial addition to the code in Section 408.9.3 of the 2012 edition. That addition referenced Section 404.4 for review and updating of evacuation diagrams for any Group R-2 dormitory. The reference to Section 404.4 was incorrect because that section only relates to fire safety and evacuation plans, which are not required for Group R-2 except for college and university buildings. This error has been fixed in Section 403.9.2.3.

Because of the complexity of these revisions in legislative format, a clean copy of the final text is provided below to allow an easier review of the proposed text for the 2015 code:

SECTION 403 EMERGENCY PREPAREDNESS REQUIREMENTS

403.1 General. In addition to the requirements of Section 401, occupancies, uses and outdoor locations shall comply with the emergency preparedness requirements set forth in Sections 403.2 through 403.11. Where a firesafety and evacuation plan is required by Sections 403.2 through 403.11, evacuation drills shall be in accordance with Section 405 and employee training shall be in accordance with Section 406.

403.2 Group A occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group A occupancies, other than those occupancies used exclusively for purposes of religious worship with an *occupant load* less than 2,000, and for buildings containing both a Group A occupancy and an atrium. Group A occupancies shall also comply with Sections 403.2.1 through 403.2.4.

403.2.1 Seating plan. In addition to the requirements of Section 404.2, the fire safety and evacuation plans for assembly occupancies shall include a detailed seating plan, *occupant load* and *occupant load* limit. Deviations from the *approved* plans shall be allowed provided the *occupant load* limit for the occupancy is not exceeded and the *aisles* and exit accessways remain unobstructed.

403.2.2 Announcements. In theaters, motion picture theaters, auditoriums and similar assembly occupancies in Group A used for noncontinuous programs, an audible announcement shall be made not more than 10 minutes prior to the start of each program to notify the occupants of the location of the exits to be used in the event of a fire or other emergency.

Exception: In motion picture theaters, the announcement is allowed to be projected upon the screen in a manner *approved* by the *fire code official*.

403.2.3 Fire watch personnel. Fire watch personnel shall be provided where required by Section 403.11.1.

403.2.4 Crowd managers. Crowd managers shall be provided where required by Section 403.11.3.

403.3 Group B occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group B occupancy where the Group B occupancy has an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge*.

403.4 Group E occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group E occupancies and for buildings containing both a Group E occupancy and an atrium. Group E occupancies shall also comply with Section 403.4.1

403.4.1 Group E occupancies. Group E occupancies shall comply with Sections 403.4.1.1 through 403.4.1.3

403.4.1.1 First emergency evacuation drill. The first emergency evacuation drill of each school year shall be conducted within 10 days of the beginning of classes.

403.4.1.2 Time of day. Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or gymnastic periods, or during other times to avoid distinction between drills and actual fires.

403.4.1.3 Assembly points. Outdoor assembly areas shall be designated and shall be located a safe distance from the building being evacuated so as to avoid interference with fire department operations. The assembly areas shall be arranged to keep each class separate to provide accountability of all individuals.

403.5 Group F occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group F occupancy where the Group F occupancy has an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge*.

403.6 Group H Occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group H occupancies. Group H-5 occupancies shall also comply with Section 403.6.1.

403.6.1 Group H-5 occupancies. Group H-5 occupancies shall comply with Sections 403.6.1.1 through 403.6.1.4

403.6.1.1 Plans and diagrams. In addition to the requirements of Section 404 and Section 407.6, plans and diagrams shall be maintained in *approved* locations indicating the approximate plan for each area, the amount and type of HPM stored, handled and used, locations of shutoff valves for HPM supply piping, emergency telephone locations and locations of exits.

403.6.1.2 Plan updating. The plans and diagrams required by Section 404, 403.6.1.1 and 407.6 shall be maintained up to date and the *fire code official* and fire department shall be informed of major changes.

403.6.1.3 Emergency response team. Responsible persons shall be designated as an on-site emergency response team and trained to be liaison personnel for the fire department. These persons shall aid the fire department in preplanning emergency responses, identifying locations where HPM is stored, handled and used, and be familiar with the chemical nature of such material. An adequate number of personnel for each work shift shall be designated.

403.6.1.4 Emergency drills. Emergency drills of the on-site emergency response team shall be conducted on a regular basis but not less than once every three months. Records of drills conducted shall be maintained.

403.7 Group I occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group I occupancies. Group I occupancies shall also comply with Sections 403.7.1 through 403.7.3

403.7.1 Group I-1 occupancies. Group I-1 occupancies shall comply with Sections 403.7.1.1 through 403.7.1.6

403.7.1.1 Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special employee actions, including fire protection procedures necessary for residents, and shall be amended or revised upon admission of any resident with unusual needs.

403.7.1.2 Employee training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by employees at intervals not exceeding two months. A copy of the plan shall be readily available at all times within the facility.

403.7.1.3 Resident training. Residents capable of assisting in their own evacuation shall be trained in the proper actions to take in the event of a fire. The training shall include actions to take if the primary escape route is blocked. Where the resident is given rehabilitation or habilitation training, training in fire prevention and actions to take in the event of a fire shall be a part of the rehabilitation training program. Residents shall be trained to assist each other in case of fire to the extent their physical and mental abilities permit them to do so without additional personal risk.

403.7.1.4 Drill frequency. Emergency evacuation drills shall be conducted at least six times per year, two times per year on each shift. Twelve drills shall be conducted in the first year of operation.

403.7.1.5 Drill times. Drill times are not required to comply with Section 405.4.

403.7.1.6 Resident participation in drills. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point.

403.7.2 Group I-2 occupancies. Group I-2 occupancies shall comply with Sections 403.7.2.1 through 403.7.2.3.

403.7.2.1 Drill times. Drill times are not required to comply with Section 405.4.

403.7.2.2 Evacuation not required. During emergency evacuation drills, the movement of patients to safe areas or to the exterior of the building is not required.

403.7.2.3 Coded alarm signal. When emergency evacuation drills are conducted after visiting hours or when patients or residents are expected to be asleep, a coded announcement is allowed instead of audible alarms.

403.7.3 Group I-3 occupancies. Group I-3 occupancies shall comply with Sections 403.7.3.1 through 403.7.3.4.

403.7.3.1 Employee training. Employees shall be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment. Training of new employees shall be provided promptly upon entrance on duty. Refresher training shall be provided at least annually.

403.7.3.2 Employee staffing. Group I-3 occupancies shall be provided with 24-hour staffing. An employee shall be within three floors or 300 feet (91 440 mm) horizontal distance of the access door of each resident housing area. In Conditions 3, 4 and 5, as defined in "Occupancy Classification – Institutional Group I-3" in Chapter 2, the arrangement shall be such that the employee involved can start release of locks necessary for emergency evacuation or rescue and initiate other necessary emergency actions within 2 minutes of an alarm.

Exception: An employee shall not be required to be within three floors or 300 feet (9144 mm) in areas in which all locks are unlocked remotely and automatically in accordance with Section 408.4 of the *International Building Code*.

403.7.3.3 Notification. Provisions shall be made for residents in Conditions 3, 4 and 5, as defined in "Occupancy Classification – Institutional Group I-3" in Chapter 2, to readily notify an employee of an emergency.

403.7.3.4 Keys. Keys necessary for unlocking doors installed in a *means of egress* shall be individually identifiable by both touch and sight.

403.8 Group M occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group M occupancy, where the Group M occupancy has an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge*, and for buildings containing both a Group M occupancy and an atrium.

403.9 Group R occupancies.

403.9.1 Group R-1 occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-1 occupancies. Group R-1 occupancies shall also comply with Sections 403.9.1.1 through 403.9.1.3.

403.9.1.1 Evacuation diagrams. A diagram depicting two evacuation routes shall be posted on or immediately adjacent to every required egress door from each hotel or motel sleeping unit.

403.9.1.2 Emergency duties. Upon discovery of a fire or suspected fire, hotel and motel employees shall perform the following duties:

1. Activate the fire alarm system, where provided.
2. Notify the public fire department.
3. Take other action as previously instructed.

403.9.1.3 Fire safety and evacuation instructions. Information shall be provided in the fire safety and evacuation plan required by Section 404 to allow guests to decide whether to evacuate to the outside, evacuate to an *area of refuge*, remain in place, or any combination of the three.

403.9.2 Group R-2 occupancies. Group R-2 occupancies shall comply with Sections 403.9.2.1 through 403.9.2.3.

403.9.2.1. College and University Buildings. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-2 college and university buildings. Group R-2 college and university buildings shall also comply with Sections 403.9.2.1 and 403.9.2.2.

403.9.2.1.1 First emergency evacuation drill. The first emergency evacuation drill of each school year shall be conducted within 10 days of the beginning of classes.

403.9.2.1.2 Time of day. Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or gymnastic periods, or during other times to avoid distinction between drills and actual fires. One required drill shall be held during hours after sunset or before sunrise.

403.9.2.2 Emergency guide. Fire emergency guides shall be provided for Group R-2 occupancies. Guide contents, maintenance and distribution shall comply with Sections 403.9.2.2.1 through 403.9.2.2.3

403.9.2.2.1 Guide contents. Fire emergency guides shall describe the location, function and use of fire protection equipment and appliances accessible to residents, including fire alarm systems, smoke alarms, and portable fire extinguishers. Guides shall also include an emergency evacuation plan for each *dwelling unit*.

403.9.2.2.2 Emergency guide maintenance. Emergency guides shall be reviewed and *approved* by the *fire code official*.

403.9.2.2.3 Emergency guide distribution. A copy of the emergency guide shall be given to each tenant prior to initial occupancy.

403.9.2.3 Evacuation diagrams for dormitories. A diagram depicting two evacuation routes shall be posted on or immediately adjacent to every required egress door from each dormitory sleeping unit. Evacuation diagrams shall be reviewed and updated as needed to maintain accuracy.

403.9.3 Group R-4 occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-4 occupancies. Group R-4 occupancies shall also comply with Sections 403.9.3.1 through 403.9.3.6.

403.9.3.1 Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special employee actions, including fire protection procedures necessary for residents, and shall be amended or revised upon admission of a resident with unusual needs.

403.9.3.2 Employee training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by employees at intervals not exceeding two months. A copy of the plan shall be readily available at all times within the facility.

403.9.3.3 Resident training. Residents capable of assisting in their own evacuation shall be trained in the proper actions to take in the event of a fire. The training shall include actions to take if the primary escape route is blocked. Where the resident is given rehabilitation or habilitation training, training in fire prevention and actions to take in the event of a fire shall be a part of the rehabilitation training program. Residents shall be trained to assist each other in case of fire to the extent their physical and mental abilities permit them to do so without additional personal risk.

403.9.3.4 Drill frequency. Emergency evacuation drills shall be conducted at least six times per year, two times per year on each shift. Twelve drills shall be conducted in the first year of operation.

403.9.3.5 Drill times. Drills times are not required to comply with Section 405.4.

403.9.3.6 Resident participation in drills. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All required exits shall be used during emergency evacuation drills.

Exception: Actual exiting from windows shall not be required. Opening the window and signaling for help shall be an acceptable alternative.

403.10 Special uses.

403.10.1 Covered and open mall buildings. Covered and open mall buildings shall comply with the requirements of Sections 403.10.1.1 through 403.10.1.6.

403.10.1.1 Malls and mall buildings exceeding 50,000 square feet. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for covered malls exceeding 50,000 square feet (4645 m²) in aggregate floor area and for open mall buildings exceeding 50,000 square feet (4645 m²) in aggregate area within perimeter line.

403.10.1.2 Lease plan. In addition to the requirements of Section 404.2.2, a lease plan that includes the following information shall be prepared for each covered and open mall building:

1. Each occupancy, including identification of tenant.
2. *Exits* from each tenant space.

3. Fire protection features, including the following:
 - 3.1. Fire department connections.
 - 3.2. *Fire command center*.
 - 3.3. Smoke management system controls.
 - 3.4. Elevators, elevator machine rooms and controls.
 - 3.5. Hose valve outlets.
 - 3.6. Sprinkler and standpipe control valves.
 - 3.7. Automatic fire-extinguishing system areas.
 - 3.8. Automatic fire detector zones.
 - 3.9. *Fire barriers*.

403.10.1.3 Lease plan approval. The lease plan shall be submitted to the *fire code official* for approval, and shall be maintained on site for immediate reference by responding fire service personnel.

403.10.1.4 Lease plan revisions. The lease plans shall be revised annually or as often as necessary to keep them current. Modifications or changes in tenants or occupancies shall not be made without prior approval of the *fire code official* and building official.

403.10.1.5 Tenant identification. Tenant identification shall be provided for secondary exits from occupied tenant spaces that lead to an *exit corridor* or directly to the exterior of the building. Tenant identification shall be posted on the exterior side of the exit or exit access door and shall identify the business name and/or address using plainly legible letters and numbers that contrast with their background.

Exception: Tenant identification is not required for anchor stores.

403.10.1.6 Unoccupied tenant spaces. The fire safety and evacuation plan shall provide for compliance with the requirements for unoccupied tenant spaces in Section 311.

403.10.2 High-rise buildings. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for high-rise buildings.

403.10.3 Underground buildings. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for underground buildings.

403.11 Special requirements for public safety.

403.11.1 Fire watch personnel. When, in the opinion of the *fire code official*, it is essential for public safety in a place of assembly or any other place where people congregate, because of the number of persons or the nature of the performance, exhibition, display, contest or activity, the *owner*, agent or lessee shall provide one or more fire watch personnel, as required and *approved*. Fire watch personnel shall comply with Sections 403.11.1.1 and 403.11.1.2.

403.11.1.1 Duty Times. Fire watch personnel shall remain on duty during the times places requiring a fire watch are open to the public, or when an activity requiring a fire watch is being conducted.

403.11.1.2 Duties. On-duty fire watch personnel shall have the following duties:

1. Keep diligent watch for fires, obstructions to *means of egress* and other hazards
2. Take prompt measures for remediation of hazards and extinguishment of fires that occur
3. Take prompt measures to assist in the evacuation of the public from the structures.

403.11.2 Public safety plan for gatherings. In other than Group A or E occupancies, where the *fire code official* determines that an indoor or outdoor gathering of persons has an adverse impact on public safety through diminished access to buildings, structures, fire hydrants and fire apparatus access roads or where such gatherings adversely affect public safety services of any kind, the *fire code official* shall have the authority to order the development of or prescribe a public safety plan that provides an approved level of public safety and addresses the following items:

1. Emergency vehicle ingress and egress
2. Fire protection
3. Emergency egress or escape routes
4. Emergency medical services
5. Public assembly areas
6. The directing of both attendees and vehicles, including the parking of vehicles
7. Vendor and food concession distribution
8. The need for the presence of law enforcement
9. The need for fire and emergency medical services personnel.

403.11.3 Crowd managers for gatherings exceeding 1,000 people. Where facilities or events involve a gathering of more than 1,000 people, crowd managers shall be provided in accordance with Section 403.11.3.1.

403.11.3.1 Number of crowd managers. The minimum number of crowd managers shall be established at a ratio of one crowd manager for every 250 persons.

Exception: Where *approved* by the *fire code official*, the number of crowd managers shall be permitted to be reduced where the facility is equipped throughout with an *approved automatic sprinkler system* or based upon the nature of the event.

Revise Section 404 as follows:

SECTION 404 FIRE SAFETY, EVACUATION AND LOCKDOWN PLANS

404.1 General. Where required by Section 403, fire safety, evacuation and lockdown plans shall comply with Sections 404.2 through 404.4.1.

(existing Section 404.2 is relocated and merged into Section 403 with the remaining sections renumbered)

Revise Section 405 as follows:

SECTION 405 EMERGENCY EVACUATION DRILLS

405.1 General. Emergency evacuation drills complying with Sections 405.2 through 405.9 shall be conducted at least annually where firesafety and evacuation plans are required by Section 403 or when required by the *fire code official*. Drills shall be designed in cooperation with the local authorities.

405.2 Frequency. Required emergency evacuation drills shall be held at the intervals specified in Table 405.2 or more frequently where necessary to familiarize all occupants with the drill procedure.

405.3 Leadership. Responsibility for the planning and conduct of drills shall be assigned to competent persons designated to exercise leadership.

405.4 Time. Drills shall be held at unexpected times and under varying conditions to simulate the unusual conditions that occur in case of fire.

405.5 Record keeping. Records shall be maintained of required emergency evacuation drills and include the following information:

1. Identity of the person conducting the drill.
2. Date and time of the drill.
3. Notification method used.
4. Employees on duty and participating.
5. Number of occupants evacuated.
6. Special conditions simulated.
7. Problems encountered.
8. Weather conditions when occupants were evacuated.
9. Time required to accomplish complete evacuation.

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B ^c	Annually	Employees
Group E	Monthly ^a	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees ^b
Group R-1	Quarterly on each shift	Employees
Group R-2 ^d	Four annually	All occupants
Group R-4	Quarterly on each shift	Employees ^b
High-rise buildings	Annually	Employees

- a. In severe climates, the *fire code official* shall have the authority to modify the emergency evacuation drill frequency.
- b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 403.9.3.6. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.
- c. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
- d. Applicable to Group R-2 college and university buildings in accordance with Section 403.9.2.1.

405.6 Notification. Where required by the *fire code official*, prior notification of emergency evacuation drills shall be given to the *fire code official*.

405.7 Initiation. Where a fire alarm system is provided, emergency evacuation drills shall be initiated by activating the fire alarm system.

405.8 Accountability. As building occupants arrive at the assembly point, efforts shall be made to determine if all occupants have been successfully evacuated or have been accounted for.

405.9 Recall and reentry. An electrically or mechanically operated signal used to recall occupants after an evacuation shall be separate and distinct from the signal used to initiate the evacuation. The recall signal initiation means shall be manually operated and under the control of the person in charge of the premises or the official in charge of the incident. No one shall reenter the premises until authorized to do so by the official in charge.

Revise Section 406 as follows

406.1 General. Where fire safety and evacuation plans are required by Section 403, employees shall be trained in fire emergency procedures based on plans prepared in accordance with Section 404.

406.2 Frequency. Employees shall receive training in the contents of fire safety and evacuation plans and their duties as part of new employee orientation and at least annually thereafter. Records shall be kept and made available to the *fire code official* upon request.

406.3 Employee training program. Employees shall be trained in fire prevention, evacuation and fire safety in accordance with Sections 406.3.1 through 406.3.4.

406.3.1 Fire prevention training. Employees shall be apprised of the fire hazards of the materials and processes to which they are exposed. Each employee shall be instructed in the proper procedures for preventing fires in the conduct of their assigned duties.

406.3.2 Evacuation training. Employees shall be familiarized with the fire alarm and evacuation signals, their assigned duties in the event of an alarm or emergency, evacuation routes, areas of refuge, exterior assembly areas and procedures for evacuation.

(moved to Section 406.4)

406.3.3 Fire safety training. Employees assigned firefighting duties shall be trained to know the locations and proper use of portable fire extinguishers or other manual fire-fighting equipment and the protective clothing or equipment required for its safe and proper use.

406.4 Emergency lockdown training. Where a facility has a lockdown plan, employees shall be trained on their assigned duties and procedures in the event of an emergency lockdown.

Delete Section 408 (existing Section 408 has been relocated to Section 403):

Revise Section 311.1 as follows:

311.1 General. Temporarily unoccupied buildings, structures, premises or portions thereof, including tenant spaces, shall be safeguarded and maintained in accordance with Sections 311.1.1 through 311.5.6.

Add a Section 311.6 as follows:

311.6. Unoccupied tenant spaces in mall buildings. Unoccupied tenant spaces in covered and open mall buildings shall be:

1. Kept free from the storage of any materials.
2. Separated from the remainder of the building by partitions of at least 0.5-inch-thick (12.7 mm) gypsum board or an *approved* equivalent to the underside of the ceiling of the adjoining tenant spaces.
3. Without doors or other access openings other than one door that shall be kept key locked in the closed position except during that time when opened for inspection.
4. Kept free from combustible waste and be broom swept clean.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and that it provides correlation with the changes made in code changes F22-, F23- and F24-13.

Assembly Action:

None

Final Hearing Results

F25-13

AS

Code Change No: F26-13

Original Proposal

Section(s): 404.2, 404.3.1, 404.3.2, Table 405.2, 408.3 (New), 408.3.1 (New), 408.3.2 (New), 408.3.3 (New), 408.3.4 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Revise as follows:

404.2 Where required. An *approved* fire safety and evacuation plan shall be prepared and maintained for the following occupancies and buildings:

1. Group A, other than Group A occupancies used exclusively for purposes of religious worship that have an *occupant load* less than 2,000.
2. Group B.
 - 2.1. Buildings having an ambulatory care facility.
 - 2.2. Buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
- 3 through 15 (No change to current text)

404.3.1 Fire evacuation plans. Fire evacuation plans shall include the following:

1. Emergency egress or escape routes and whether evacuation of the building is to be complete, ~~or, where approved, by selected floors or areas only, or with a defend-in-place response.~~
- 2 through 9 (No change to current text)

404.3.2 Fire safety plans. Fire safety plans shall include the following:

1. The procedure for reporting a fire or other emergency.
2. The life safety strategy including the following:
 - 2.1 and p Procedures for notifying occupants, including areas with a private mode alarm system.
 - 2.2 Procedures for relocating occupants under a defend-in-place response.
 - 2.3 Procedures ~~or~~ for evacuating occupants, including occupants who need assistance in evacuation.
- 3 through 7 (No change to current text)

405.2 Frequency. Required emergency evacuation drills shall be held at the intervals specified in Table 405.2 or more frequently where necessary to familiarize all occupants with the drill procedure.

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group B ^{c,d}	Annually	Employees
Group R-2 ^{e,e}	Four annually	All occupants

(Portions of table not shown remain unchanged)

- a. The frequency shall be allowed to be modified in accordance with Section 408.3.2.

- b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.
- c. Emergency evacuation drills are required in Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
- d. Emergency evacuation drills are required in ambulatory care facilities in accordance with Section 408.3.
- e. Applicable to Group R-2 college and university buildings in accordance with Section 408.3.

Add new text as follows:

408.3 Ambulatory Care Facilities. Ambulatory care facilities shall comply with the requirements of Sections 408.3.1 through 408.3.3 and Section 401 through 406.

408.3.1 Fire evacuation plan. The fire safety and evacuation plan required by Section 404 shall include a description of special staff actions. This shall include procedures for stabilizing patients in a defend in place response, staged evacuation, or full evacuation in conjunction with the entire building if part of a multi-tenant facility.

408.3.2 Fire safety plan. A copy of the plan shall be maintained at the facility at all times. Plan shall include the all of following in addition to the requirements of Section 404:

1. Locations where patients are located who are rendered incapable of self preservation.
2. Maximum number of patients rendered incapable of self preservation.
3. Area and extent of each Ambulatory Care Facility.
4. Location of adjacent smoke compartments or refuge areas, where required.
5. Path of travel to adjacent smoke compartments.
6. Location of any special locking, delayed egress or access control arrangements.

408.3.3 Staff training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by the staff at least every two months. A copy of the plan shall be readily available at all times within the facility.

408.3.4 Emergency Evacuation Drills. Emergency evacuation drills shall comply with Section 405. Emergency evacuation drills shall be conducted at least four times per year.

Exceptions: The movement of patients to safe areas or to the exterior of the building is not required.

(ReNUMBER subsequent sections)

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

This code change proposal clarifies the code by accurately describing the documentation needed to understand the typical "defend in place" method of occupant protection. Defend-in-place is a widely used approach to protecting occupants who are bedridden, unconscious or otherwise unable to self-preserve in a fire event. The method relies on both active and passive fire protection systems as well as the actions of trained staff and responders. The heavy emphasis on staff action requires a comprehensive fire safety and evacuation plan.

Any building containing an ambulatory healthcare occupancy will, by definition, contain occupants who may be incapable of self-preservation. The intent of the current IBC requirements for ambulatory care is to create a type of defend-in-place environment. Fire safety and evacuation plans must be developed, reviewed and approved to support this strategy.

The reference to "defend-in-place" is added in Section 404.3.1 to recognize the defend-in-place method. This is not a new concept. The IBC and legacy codes have been written to support this concept for years, yet the code did not name or describe the concept until this cycle. Group A code change G68-12 was approved in 2012 to define the concept, with the understanding that this change would follow.

Fire safety plans should describe in the life safety strategy the method of notifying occupants, including the use of a private mode alarm system as allowed by code. Procedures for dealing with occupants in a defend-in-place strategy should also be

described so that it is clear what the staff will be trained on and what the first responders should expect to encounter.

The new Section 408.3 adds requirements for how to create fire safety and evacuation plans for Ambulatory Care Facilities. This section does not include great detail, as there are many successful ways to approach a defend in place response. Rather, this section describes the minimum amount of information necessary aid in the review of facility and the plan. Fire evacuations plan are required to describe the special actions of staff, especially staff that must stabilize a patient prior to moving. This will be the basis of the staff education and training. This will also help the code official understand the expected performance of the building.

It is imperative that the building and fire official know the size and location of the facility as well as the number of patients who are incapable of self-preservation. This information will help the building official determine the proper classification and mitigations required. It will also allow the fire official to preplan the response for a particular building. Any special characteristics of the means of egress, such as path to the adjacent smoke compartment and special locking arrangements should also be described to aid in verifying code compliance. Practically these documents will be the basis for staff training as well.

Fire safety plans are required to show the location of area where incapable patients are likely to be. They are required to show the location of smoke compartments, routes of travel, patient movement elevators and any locking constraints that might affect the horizontal evacuation of patients. All of these will be essential to robust staff training as well as operational planning for first responders.

Finally, the requirements for emergency evacuation drill have been merged into a single subsection for clarity. The only functional change is to delete the exception which would have allowed drills to not comply with the time requirements of Section 405.4. The committee felt that holding drill at unexpected time and varying conditions was a crucial component of staff training.

These requirements, while new to the fire code, have been a widely accepted practice in the facilities for years. This code change proposal has been reviewed by representatives from both the hospital and nursing home industry who have given their support to these changes.

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and that the proposal brings the IFC into correlation with effective current healthcare industry defend-in-place strategy.

Assembly Action:

None

Final Hearing Results

F26-13

AS

Code Change No: F27-13

Original Proposal

Section(s): 404.3.1, 404.3.2, 408.6, 408.6.1, 408.6.2, 408.6.3 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

404.3 Contents. Fire safety and evacuation plan contents shall be in accordance with Sections 404.3.1 and 404.3.2.

404.3.1 Fire evacuation plans. Fire evacuation plans shall include the following:

1. Emergency egress or escape routes and whether evacuation of the building is to be complete, ~~or, where approved,~~ by selected floors or areas only, or with a defend-in-place response.
- 2 through 9 (No change to current text)

404.3.2 Fire safety plans. Fire safety plans shall include the following:

1. The procedure for reporting a fire or other emergency.
2. The life safety strategy including the following:
 - 2.1. and Procedures for notifying occupants, including areas with a private mode alarm system. ;
 - 2.2 Procedures for relocating occupants under a defend-in-place response.
 - 2.3 Procedures ~~or~~ for evacuating occupants, including occupants who need assistance in evacuation.
- 3 through 7 (No change to current text)

408.6 Group I-2. Group I-2 occupancies shall comply with the requirements of Sections 408.6.1 through 408.6.3 and Section 401 through 406. ~~Drills are not required to comply with the time requirements of Section 405.4.~~

408.6.1 Evacuation not required. During emergency evacuation drills, the movement of patients to safe areas ~~or to the exterior of the building is not required.~~

408.6.2 Coded alarm signal. When emergency evacuation drills are conducted after visiting hours or when patients or residents are expected to be asleep, a coded announcement is allowed instead of audible alarms.

Add new text as follows:

408.6.1 Fire evacuation plans. The fire safety and evacuation plans required by Section 404 shall include a description of special staff actions. Plan shall include all of the following in addition to the requirements of Section 404.

1. Procedures for evacuation for patients with needs for containment or restraint and post evacuation containment, where present.
2. A written plan for maintenance of the means of egress.
3. Procedure for a defend-in-place strategy.

4. Procedures for a full floor or building evacuation, where necessary.

408.6.2 Fire safety plans. A copy of the plan shall be maintained at the facility at all times. Plans shall include all of the following in addition to the requirements of Section 404:

1. Location and number of any patient sleeping rooms and operating rooms.
2. Location of adjacent smoke compartments or refuge areas.
3. Path of travel to adjacent smoke compartments.
4. Location of any special locking, delayed egress or access control arrangements.
5. Location of elevators utilized for patient movement in accordance with the fire safety plan, where provided.

408.6.3 Emergency Evacuation Drills. Emergency evacuation drills shall comply with Section 405.

Exceptions:

1. The movement of patients to safe areas or to the exterior of the building is not required.
2. Where emergency evacuation drills are conducted after visiting hours or where patients or residents are expected to be asleep, a coded announcement shall be an acceptable alternative to audible alarms.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held 25 meetings – all open to the public. In 2012, three of the 25 face-to-face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

This code change proposal clarifies the code by accurately describing the documentation needed to understand the typical "defend in place" method of occupant protection. Defend-in-place is a widely used approach to protecting occupants who are bedridden, unconscious or otherwise unable to self-preserve in a fire event. The method relies on both active and passive fire protection systems as well as the actions of trained staff and responders. The heavy emphasis on staff action requires a comprehensive fire safety and evacuation plan.

The reference to "defend-in-place" is added in Section 404.3.1 to recognize the defend- in-place method. This is not a new concept. The IBC and legacy codes have been written to support this concept for years, yet the code did not name or describe the concept until this cycle. Group A code change G68-12 was approved in 2012 to define the concept, with the understanding that this change would follow.

Fire safety plans should describe in the life safety strategy the method of notifying occupants, including the use of a private mode alarm system as allowed by code. Procedures for dealing with occupants in a defend-in-place strategy should also be described so that it is clear what the staff will be trained on and what the first responders should expect to encounter.

It is imperative that the building and fire code officials know the size and location of the facility as well as the number of patients who are incapable of self-preservation. This information will help the building official determine the proper classification and mitigations required. It will also allow the fire official to preplan the response for a particular building. Any special characteristics of the means of egress, such as path to the adjacent smoke compartment and special locking arrangements should also be described to aid in verifying code compliance. Practically these documents will be the basis for staff training as well.

Section 408.6 has been rewritten to accurately reflect the needs and the current practice for Group I-2 occupancies. This section requires the facility to describe the special actions of staff. Due to the special nature of some facilities, specific requirements are made locations where patients are restrained. Since these facilities contain a large number of carts, beds, and other mobile equipment a written plan for maintenance of the means of egress is required. This would address the practical operational needs of the facility while ensuring that the means of egress can be maintained free of obstructions. While these facilities are defend in place, catastrophic failure may require full evacuation. Facilities are asked to describe this procedure so that the first responders can preplan.

Fire safety plans are required to show the location of area where incapable patients are likely to be. They are required to show the location of smoke compartments, routes of travel, patient movement elevators and any locking constraints that might affect the

horizontal evacuation of patients. All of these will be essential to robust staff training as well as operational planning for first responders.

Finally, the requirements for emergency evacuation drill have been merged into a single subsection for clarity. The only functional change is to delete the exception which would have allowed drills to not comply with the time requirements of Section 405.4. The committee felt that holding drill at unexpected time and varying conditions was a crucial component of staff training.

These requirements, while new to the fire code, have been a widely accepted practice in the facilities for years. This code change proposal has been reviewed by representatives from both the hospital and nursing home industry who have given their support to these changes.

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and because the proposal brings the IFC into correlation with effective current healthcare industry evacuation procedures and practices.

Assembly Action:

None

Final Hearing Results

F27-12

AS

Code Change No: F28-13

Original Proposal

Section(s): 404.3.1

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc.
(bdblack@neii.org)

Revise as follows:

404.3.1 Fire evacuation plans. Fire evacuation plans shall include the following:

1. Emergency egress or escape routes and whether evacuation of the building is to be complete or, where *approved*, by selected floors or areas only.
2. Procedures for employees who must remain to operate critical equipment before evacuating.
3. Procedures for the use of elevators to evacuate the building where occupant evacuation elevators complying with Section 3008 of the *International Building Code* are provided.
- ~~34.~~ Procedures for assisted rescue for persons unable to use the general means of egress unassisted.
- ~~45.~~ Procedures for accounting for employees and occupants after evacuation has been completed.
- ~~56.~~ Identification and assignment of personnel responsible for rescue or emergency medical aid.
- ~~67.~~ The preferred and any alternative means of notifying occupants of a fire or emergency.
- ~~78.~~ The preferred and any alternative means of reporting fires and other emergencies to the fire department or designated emergency response organization.
- ~~89.~~ Identification and assignment of personnel who can be contacted for further information or explanation of duties under the plan.
- ~~910.~~ A description of the emergency voice/alarm communication system alert tone and preprogrammed voice messages, where provided.

Reason: Where Occupant Evacuation Elevators are included in a building design, their use must be specifically spelled out in the building's fire evacuation plan.

Cost Impact: This code change proposal will not increase construction costs.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change because it provides important correlation with the similar provision contained in IBC Section 3008.1.2. The proposal also correlates with code change F34-13.

Assembly Action:

None

Final Hearing Results

F28-12

AS

Code Change No: F30-13

Original Proposal

Section(s): 404.3.2, Table 405.2, 408.5.1.1 (New), 408.5.1.2 (New), 408.5.3, 408.5.5, 408.5.6 (New), 408.10.1.1 (New), 408.10.5, 408.10.6 (New)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee
(cbaldassarra@RJAGroup.com)

Revise as follows:

404.3.2 Fire safety plans. Fire safety plans shall include the following:

1. The procedure for reporting a fire or other emergency.
2. The life safety strategy and procedures for notifying, relocating or evacuating occupants, including occupants who need assistance.
3. Site plans indicating the following:
 - 3.1. The occupancy assembly point.
 - 3.2. The locations of fire hydrants.
 - 3.3. The normal routes of fire department vehicle access.
4. Floor plans identifying the locations of the following:
 - 4.1. Exits.
 - 4.2. Primary evacuation routes.
 - 4.3. Secondary evacuation routes.
 - 4.4. Accessible egress routes.
 - 4.5. Areas of refuge.
 - 4.6 **Refuge areas**
 - 4.7 **4-6.** Exterior areas for assisted rescue.
 - 4.8 **4-7.** Manual fire alarm boxes.
 - 4.9 **4-8.** Portable fire extinguishers.
 - 4.10 **4-9.** Occupant-use hose stations.
 - 4.11 **4-10.** Fire alarm annunciators and controls.
5. A list of major fire hazards associated with the normal use and occupancy of the premises, including maintenance and housekeeping procedures.
6. Identification and assignment of personnel responsible for maintenance of systems and equipment installed to prevent or control fires.
7. Identification and assignment of personnel responsible for maintenance, housekeeping and controlling fuel hazard sources.

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B ^c	Annually	Employees
Group E	Monthly ^a	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift ^a	Employees ^b
Group R-1	Quarterly on each shift	Employees
Group R-2 ^d	Four annually	All occupants
Group R-4	Quarterly on each shift ^a	Employees ^b

High-rise buildings	Annually	Employees
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- a. The frequency shall be allowed to be modified in accordance with Sections 408.3.2, 408.5.6 and 408.10.6.
- b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.
- c. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
- d. Applicable to Group R-2 college and university buildings in accordance with Section 408.3.

408.5.1.1 Fire evacuation plan. The fire evacuation plan required by Section 404 shall include a description of special staff actions. Plans shall include the following in addition to the requirements of Section 404.

1. In Group I-1 Condition 2 occupancies, procedures for evacuation through a refuge area in an adjacent smoke compartment and then to an exterior assembly point.

408.5.1.2 Fire safety plans. A copy of the plan shall be maintained at the facility at all times. Plans shall include the following in addition to the requirements of Section 404:

1. Location and number of any residents sleeping rooms.
2. Location of any special locking or egress control arrangements.

408.5.3 Resident training. Residents capable of assisting in their own evacuation shall be trained in the proper actions to take in the event of a fire. In Group I-1 Condition 2 occupancies training shall include evacuation through an adjacent smoke compartment and then to an exterior assembly point. The training shall include actions to take if the primary escape route is blocked. Where the resident is given rehabilitation or habilitation training, training in fire prevention and actions to take in the event of a fire shall be a part of the rehabilitation training program. Residents shall be trained to assist each other in case of fire to the extent their physical and mental abilities permit them to do so without additional personal risk.

408.5.5 Resident participation. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All required exits shall be used during emergency evacuation drills.

408.5.6 Emergency evacuation drill deferral. In severe climates, the fire code official shall have the authority to modify the emergency evacuation drill frequency specified in Section 405.2.

408.10.1.1 Fire safety plans. A copy of the plan shall be maintained at the facility at all times. Plans shall include the following in addition to the requirements of Section 404:

1. Location and number of any residents sleeping rooms.
2. Location of any special locking or egress control arrangements.

408.10.5 Resident participation. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All required exits shall be used during emergency evacuation drills.

Exception: Actual exiting from emergency escape and rescue windows shall not be required. Opening the emergency escape and rescue window and signaling for help shall be an acceptable alternative.

408.10.6 Emergency evacuation drill deferral. In severe climates, the fire code official shall have the authority to modify the emergency evacuation drill frequency specified in Section 405.2.

Reason: The intent of this proposal is to clarify the requirements for Group I-1 and R-4 assembly points. It also clarifies the implementation of smoke compartments in the new Group I-1 Condition 2 as was approved for the 2015 IBC in the G 31-12. Finally it proposes severe climate flexibility for fire drill frequency.

The proposed change clarifies that Group I-1 Condition 2 "smoke compartment" refuge areas, as required in the G 31-12 Section 420, can be used as a temporary "refuge area" during evacuation prior to complete building evacuation..

The proposed code change allows for severe climate deferrals, similar to current Group E deferrals that are already allowed. This takes into consideration the possible danger to seniors inhabiting these occupancies, when they are required to go outside during fire drills when possible inclement weather is occurring. The proposal allows the fire code official to modify drill frequency. The provision is left as a general provision purposely due to the variations of severe climate throughout the country, whether it be hot or cold, winter or summer or from storms. It leaves up to local discretion, the opportunity to allow modifications. (This is reflected in the additional section references in Note a to Table 405.2.) The modifications in actual practice may also include still conducting the drill, while not requiring residents to actually go outside during the drill at certain times of the year. The residents would still be trained to go outside to the outdoor assembly point during a real emergency situation.

The assembly point aspects of the proposed change are more clerical. The revisions are proposed essentially from the current wording in Group E clarifying that an assembly point is outdoors coinciding with the building evacuation concepts of both Group I-1 and R-4 irrelevant of the "Condition."

These changes are stand alone but have been coordinated with the Ad Hoc committee proposed IFC changes for Group I-2 so as not to conflict with those proposed changes. These changes have also been coordinated with the separate CTC proposed IFC changes for the Table 405.2 for fire and safety evacuation drills for both Groups I-1 and R-4.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement that it clarifies the text and provides the fire code official with flexibility in requiring drills during inclement weather.

Assembly Action:

None

Public Comments

Public Comment:

Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee and Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, request Approval as Modified by this Public Comment.

Modify the proposal as follows:

404.3.2 Fire safety plans. Fire safety plans shall include the following:

1. The procedure for reporting a fire or other emergency.
2. The life safety strategy and procedures for notifying, relocating or evacuating occupants, including occupants who need assistance.
3. Site plans indicating the following:
 - 3.1. The occupancy assembly point.
 - 3.2. The locations of fire hydrants.
 - 3.3. The normal routes of fire department vehicle access.
4. Floor plans identifying the locations of the following:
 - 4.1. Exits.
 - 4.2. Primary evacuation routes.
 - 4.3. Secondary evacuation routes.
 - 4.4. Accessible egress routes.
 - 4.4.1 4-5. Areas of refuge.
 - 4.4.2 4-7. Exterior areas for assisted rescue.
 - 4.5 4-6 Refuge areas associated with smoke barriers and horizontal exits
 - 4.6 4-8. Manual fire alarm boxes.
 - 4.7 4-9. Portable fire extinguishers.
 - 4.8 4-10 Occupant-use hose stations.
 - 4.9 4-14. Fire alarm annunciators and controls.

5. A list of major fire hazards associated with the normal use and occupancy of the premises, including maintenance and housekeeping procedures.
6. Identification and assignment of personnel responsible for maintenance of systems and equipment installed to prevent or control fires.
7. Identification and assignment of personnel responsible for maintenance, housekeeping and controlling fuel hazard sources.

(Portions of proposal not shown remain unchanged.)

Reason: There was concern that the three terms, “areas of refuge”, “exterior area for assisted rescue” and “refuge area”, may be confused. However, all three are necessary information for the fire safety plan. The relocation will eliminate confusion and clarify the distinction between the elements that can be found in a building.

This proposal is co-sponsored by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Final Hearing Results

F30-13

AMPC

Code Change No: F31-13

Original Proposal

Section(s): Table 405.2

Proponent: Dave Frable representing U.S. General Services Administration, Public Buildings Service

Revise as follows:

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B ^e	Annually	Employees
<u>Group B^c (transient^e)</u>	<u>Annually</u>	<u>Employees</u>
<u>Group B^c (nontransient^f)</u>	<u>Annually</u>	<u>All occupants</u>
Group E	Monthly ^a	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees ^b
Group R-1	Quarterly on each shift	Employees
Group R-2 ^d	Four annually	All occupants
Group R-4	Quarterly on each shift	Employees ^b
High-rise buildings	Annually	Employees

a. through d. (No changes to current text)

e. Applicable to Group B occupancies primarily used by occupants for short term use for less than 30 days.

f. Applicable to Group B occupancies primarily used by occupants for long term use for more than 30 days.

Reason: The intent of this code change is to provide occupants who are working in a Group B occupancy for more than 30 days to have an opportunity to participate in an annual fire and evacuation drill. Currently, only the employees (i.e., building staff) in a Group B occupancy have an opportunity to participate in an annual fire and evacuation drill. Having building occupants participate in an annual drill will provide educational instruction and practice for the building occupants evacuating/relocating as well as serve as a verification tool that the fire safety and evacuation plan, as developed, is functional. An additional benefit is that practice makes perfect when it comes to effective occupant egress during an evacuation and enables occupants to be familiar with egress routes and the fire safety and evacuation plan's details.

It should also be emphasized it is not the intent of this code change to require occupants in all Group B occupancies to participate in fire and evacuation drills. In certain Group B occupancies where occupants are staying or working for less than 30 days, occupants will not be required to participate in an emergency egress and relocation drill. For example, it would not be practical or reasonable for patients in an ambulatory health care facility (considered a Group B occupancy) to participate in a periodic evacuation drill. For these types of circumstances, building employees will still provide the necessary procedures in case of fire to occupants prior to an emergency and facilitate and direct occupants during the emergency regardless of whether the occupants participate in the annual fire and emergency drill.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

Replace the proposal as follows:

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B ^c	Annually	Employees <u>All Occupants</u>
<u>Group B^c (Ambulatory Care Facilities)</u>	<u>Annually</u>	<u>Employees</u>
<u>Group B^c (Clinic, Outpatient)</u>	<u>Annually</u>	<u>Employees</u>
Group E	Monthly ^a	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees ^b
Group R-1	Quarterly on each shift	Employees
Group R-2 ^d	Four annually	All occupants
Group R-4	Quarterly on each shift	Employees ^b
High-rise buildings	Annually	Employees

a. through d. (No changes to current text)

Committee Reason: The modification recognizes and includes the new categories of health care facilities now recognized in the IBC and will provide correlation with the efforts of the Ad Hoc Committee on Healthcare.

Assembly Action:

None

Final Hearing Results

F31-13

AM

Code Change No: F32-13

Original Proposal

Section(s): Table 405.2, 408.5.4, 408.10.4

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee
(cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 405 EMERGENCY EVACUATION DRILLS

405.2 Frequency. Required emergency evacuation drills shall be held at the intervals specified in Table 405.2 or more frequently where necessary to familiarize all occupants with the drill procedure.

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B ^{a,b}	Annually	Employees
Group E	Monthly ^a	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees ^b
Group I -1	Twice on each shift per year	All occupants
Group I -2	Quarterly on each shift	Employees
Group I -3	Quarterly on each shift	Employees
Group I -4	Monthly	All occupants
Group R-1	Quarterly on each shift	Employees
Group R-2 ^{a,c}	Four annually	All occupants
Group R-4	Quarterly on each shift—Twice on each shift per year	Employees ^b All occupants
High-rise buildings	Annually	Employees

a. The frequency shall be allowed to be modified in accordance with Section 408.3.2.

b. ~~Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.~~

b.e. ~~Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.~~

c.d. ~~Applicable to Emergency evacuation drills in Group R-2 college and university buildings shall be in accordance with Section 408.3. Other Group R-2 occupancies shall be in accordance with Section 408.9.~~

408.5.4 Drill frequency. ~~Emergency evacuation drills shall be conducted at least six times per year, two times per year on each shift. In addition to the evacuation drills in required in Section 405.2, employees shall participate in an additional two times a year on each shift. Twelve drills with all occupants shall be conducted in the first year of operation. Drills are not required to comply with the time requirements of Section 405.4.~~

408.10.4 Drill frequency. ~~Emergency evacuation drills shall be conducted at least six times per year, two times per year on each shift. In addition to the evacuation drills in required in Section 405.2, employees~~

shall participate in an additional two times a year on each shift. Twelve drills with all occupants shall be conducted in the first year of operation. Drills are not required to comply with the time requirements of Section 405.4.

Reason: The intent is to clarify the requirements for Group I-1, I-4 and R-4 fire and safety evacuation drill requirements. Table 405.2 is expanded to indicate clearly when employees and residents/children are required to participate in the drills. Group I-1 and R-4 require resident's participation for 6 drills a year (common practice). The Group I-4 should have drills consistent with Group E facilities.

Current footnote b does not make logical sense to reference Group R-4 drill participation for residents for Group I facilities. The requirement has been specifically addressed in the appropriate use group section.

Revisions to current footnote d is a clarification for dorms vs. apartments.

Group I-1, must use the provisions in Section 404 in addition to the concerns specific to Group I-1. In Section 408.5.4, staff is required to have additional practice drills. This will equal what was in the table for staff to do quarterly drills on each shift. Section 408.5.5 resident participation is coordinated with Group R-4 language in Section 408.10.5.

In Section 408.10.4, staff is required to have additional practice drills. This will equal what was in the table for staff to do quarterly drills on each shift.

The Adhoc Health Care committee has proposals to fire and safety evacuation plans and drills for Group I-2 and Ambulatory Care Facilities. This proposal can be accepted independently, but would also work in conjunctions with these proposals.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B ^b	Annually	Employees
Group E	Monthly ^a	All occupants
Group F	Annually	Employees
Group I -1	Twice on each shift per year <u>Semi-annually on each shift</u>	All occupants
Group I -2	Quarterly on each shift	Employees
Group I -3	Quarterly on each shift	Employees
Group I -4	Monthly <u>on each shift</u>	All occupants
Group R-1	Quarterly on each shift	Employees
Group R-2 ^c	Four annually	All occupants
Group R-4	Twice on each shift per year <u>Semi-annually on each shift</u>	All occupants
High-rise buildings	Annually	Employees

(Portions of the table and remainder of proposal not shown remain unchanged.)

Committee Reason: The committee approved the code change based on the proponent's reason statement. The modifications clarify the drill frequency requirements.

Assembly Action:

None

Final Hearing Results

F32-13

AM

Code Change No: F33-13

Original Proposal

Section(s): Table 405.2

Proponent: Dave Frable representing U.S. General Services Administration, Public Buildings Service

Revise as follows:

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B ^c	Annually	Employees
Group E	Monthly ^a	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees ^b
Group R-1	Quarterly on each shift	Employees
Group R-2 ^d	Four annually	All occupants
Group R-4	Quarterly on each shift	Employees ^b
High-rise buildings	Annually	Employees
<u>High-rise buildings (transient^e)</u>	<u>Annually</u>	<u>Employees</u>
<u>High-rise buildings (non transient^f)</u>	<u>Annually</u>	<u>All occupants</u>

- a. The frequency shall be allowed to be modified in accordance with Section 408.3.2.
- b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.
- c. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
- d. Applicable to Group R-2 college and university buildings in accordance with Section 408.3.
- e. Applicable to high-rise buildings primarily used by occupants for short term use for less than 30 days.
- f. Applicable to high-rise buildings primarily used by occupants for long term use for more than 30 days.

Reason: The intent of this code change is to provide occupants in high-rise buildings, for more than 30 days to have an opportunity to participate in an annual fire and evacuation drill. Currently, only the employees (i.e., building staff), have an opportunity to participate in an annual fire and evacuation drill. Having building occupants participate in an annual drill will provide educational instruction and practice for the building occupants evacuating/relocating as well as serve as a verification tool that the fire safety and evacuation plan, as developed, is functional. An additional benefit is that practice makes perfect when it comes to effective occupant egress during an evacuation and enables occupants to be familiar with egress routes and the fire safety and evacuation plan's details.

It should also be emphasized it is not the intent of this code change to require occupants in all high-rise buildings to participate in fire and evacuation drills. In certain high-rise buildings where occupants are staying or working less than 30 days, occupants will not be required to participate in an emergency egress and relocation drill. For example, it would not be practical or reasonable to require occupants in high-rise hospitals, hotels, or correctional facilities to participate in an evacuation drill. For these types of circumstances, building employees will still provide the necessary procedures in case of fire to occupants prior to an emergency and facilitate and direct occupants during the emergency regardless of whether the occupants participate in the annual fire and emergency drill.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

Replace the proposal as follows:

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B ^c	Annually	Employees
Group E	Monthly ^a	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees ^b
Group R-1	Quarterly on each shift	Employees
Group R-2 ^d	Four annually	All occupants
Group R-4	Quarterly on each shift	Employees ^b
High-rise buildings	Annually	Employees

a. through d. (No change to current text.)

Committee Reason: The modification recognizes that the table is occupancy driven and that high-rise buildings are not an occupancy but rather a building type.

Assembly Action:

None

Final Hearing Results

F33-13

AM

Code Change No: F34-13

Original Proposal

Section(s): 408.12 (New)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Add new text as follows:

408.12 Buildings using occupant evacuation elevators. In buildings using occupant evacuation elevators in accordance with Section 3008 of the *International Building Code*, the fire safety and evacuation plan and the training required by Section 404 and Section 406, respectively, shall incorporate specific procedures for the occupants using such elevators.

Reason: This would seem to need clarification.

Cost Impact: The provision might increase operational costs but not construction costs.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change because it provides important correlation with the same provision contained in IBC Section 3008.1.2. Occupant evacuation elevators are a new feature and people may not be familiar with them and their operational procedures. The proposal will give these elevators greater prominence in the fire safety planning process. The proposal also correlates with code change F28-13.

Assembly Action:

None

Final Hearing Results

F34-12

AS

Code Change No: F37-13

Original Proposal

Section(s): 503.1.1

Proponent: Erin Crowley, Code Consultants, Inc, representing self.

Revise as follows:

503.1.1 Buildings and Facilities. Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

Exception-Exceptions: The fire code official is authorized to increase the dimension of 150 feet (45 720 mm) where any of the following conditions occur:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
3. There are not more than two Group R-3 or Group U occupancies.

Reason: Revising the Exception fixes and clarifies the language to match the original intent of the section based on the UFC. The intent of the original UFC requirement was that each of the three items above would be applied as an independent exception. As written currently, it could be interpreted to mean that one would have to meet all three items in order to benefit from the increase, which was not the original intent of the requirement.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent reason statement that the code change provides needed clarification of the exception.

Assembly Action:

None

Final Hearing Results

F37-12

AS

Code Change No: F38-13

Original Proposal

Section(s): 503.1.1

Proponent: Adria Smith, Fountain Valley Fire Department, representing the California Fire Chiefs Association (adria.smith@fountainvalley.org); Kevin Reinertson, Division Chief, representing the California State Fire Marshal's Office

Revise as follows:

503.1.1 Buildings and facilities. Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

Exceptions:

1. The fire code official is authorized to increase the dimension of 150 feet (45 720 mm) where:
 - 1.1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
 - 1.2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
 - 1.3. There are not more than two Group R-3 or Group U occupancies.
2. Where approved by the fire code official, fire apparatus access roads shall be permitted to be exempted or modified for solar photovoltaic power generation facilities.

Reason: Exception two (other exceptions are existing and renumbered) is provided to address photovoltaic panel system/array power generation facilities. The 2012 IFC does not specifically require or exempt these types of facilities. This proposal intends to provide additional guidance to afford jurisdictions avenues to determine if a fire apparatus road is needed for hazard mitigation or if it can be exempted.

Section 503 is specifically scoped to "buildings and facilities". Power generation sites that utilize a ground mounted photovoltaic system/array would not be considered a building. However, they would be considered a facility as defined in Section 202 and are therefore subject to Section 503.

A ground mounted photovoltaic panel system/array is also considered a structure as defined in IFC Section 202. Although, where ground mounted photovoltaic panel systems/arrays are mounted on a support structure and the support structure does not create or allow for a use below (e.g. parking, lunch/shade structures, etc.), the structure should be considered equipment.

Therefore, sound rational judgment should be made if IFC, Section 503 is to be applied to a solar generation facility. Not all conditions or facilities of similar type or function necessitate fire apparatus access roads and not all structures are subject to IFC Section 503. The IFC is not clear in its application or scope when applying Section 503 to equipment, specifically ground mounted photovoltaic systems/arrays. However, when other buildings or structures are located on the site, an evaluation and/or classification of the use may require fire apparatus access.

Thus, consideration must be given to the purpose of fire apparatus access roads within these facilities and how the section would be applied.

It is important to note that Section 503 does provide exceptions for length, dimensions, and other specifications based on conditions such as terrain, climate, or other similar concerns.

Several issues arise when applying Section 503 to ground mounted photovoltaic systems/arrays. When considering the issues listed below, one should also consider other available code requirements that provide for appropriate hazard mitigation and risk reduction. Issues for consideration include:

1. Risk/hazard to be mitigated
2. Risk/hazard to firefighters or other emergency responders
3. Interest of public safety and welfare
4. Economics
5. Intended access use

6. Fuel load of the facility and adjacent areas that impact the facility
7. Array configuration (tightly spaced, access aisles, height)
8. Actual hazard to public safety and welfare

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change provides the fire code official with specific authority regarding modification of the fire apparatus access road provisions at ground mounted solar photovoltaic power generation facilities without having to invoke the alternative methods provisions in Chapter 1. The committee also expressed its preference for the format of the exceptions to this section that was established in approved code change F37-13.

Assembly Action:

None

Final Hearing Results

F38-12

AS

Code Change No: F39-13

Original Proposal

Section(s): 503.2.2

Proponent: Carl D. Wren, P.E., Austin Fire Department, representing self (carl.wren@austintexas.gov)

Revise as follows:

503.2.2 Authority. The fire code official shall have the authority to require or permit an increase or a decrease in the minimum access widths where ~~they are inadequate for fire or rescue operations~~ necessary to meet the public safety objectives of the jurisdiction.

Reason: Fire departments respond to many types of emergency situations and the jurisdictions they serve may have traffic safety criteria that have an impact on the design of access roadways used by emergency response vehicles. It would also seem to be a wise course of action for the fire service and ICC to acknowledge and, when it is possible, to assist in developing methods of improving the safety of the public by helping to prevent injuries and deaths from hazards other than fire.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

503.2.2 Authority. The fire code official shall have the authority to require or permit ~~an increase or a decrease in the minimum~~ modifications to the required access widths where ~~they are inadequate for fire or rescue operations or where~~ necessary to meet the public safety objectives of the jurisdiction.

Committee Reason: The committee agreed with the proponent that the code change provides the fire code official with greater flexibility to accommodate variables and changes in hazard associated with fire apparatus access roads. The modification clarifies that the authorized modification may be to increase or to decrease the width.

Assembly Action:

None

Final Hearing Results

F39-13

AM

Code Change No: F41-13

Original Proposal

Section(s): 503.4

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

Revise as follows:

503.4 Obstruction of fire apparatus access roads. Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Sections 503.2.1 and 503.2.2 shall be maintained at all times.

Reason: IFC Section 503.2.2 permits the fire code official to require fire apparatus access roads to be widened when inadequate for fire and rescue operations. This section is most commonly used to require wider fire apparatus access roads for ladder trucks and around fire hydrants (as found in Appendix D), but could be for areas that are susceptible to traffic congestion.

However, there is no way in the current IFC to enforce these wider fire apparatus access road requirements since 503.4 only references Section 503.2.1 which, in turn, only requires the 20 foot width requirement.

This code change will permit the fire code official to enforce required widths of fire apparatus access roads after installation.

This proposal is submitted with the endorsement of the New York State Building Officials Conference, the New York State Fire Marshals and Inspectors Association, and the Association of Fire Districts of New York State.

Cost Impact: This change has no cost impact, but is to enforce requirements in place at the time of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F41-12

AS

Code Change No: F43-13 Part I

Original Proposal

Section(s): IFC 505.1; IBC [F] 501.2; IPMC [F] 304.3; IRC R319.1

THIS IS A 4 PART CODE CHANGE. PARTS I THROUGH III WILL BE HEARD BY THE IFC CODE DEVELOPMENT COMMITTEE. PART IV WILL BE HEARD BY THE IRC B/E CODE DEVELOPMENT COMMITTEE. ALL 4 PARTS WILL BE HEARD AS SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

PART I – INTERNATIONAL FIRE CODE

Revise as follows:

505.1 Address identification. ~~New and existing buildings shall have be provided with approved address numbers, building numbers or approved building identification. The address identification shall be legible and placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers Address identification characters shall contrast with their background. Where required by the fire code official, address numbers shall be provided in additional approved locations to facilitate emergency response.~~ Address numbers shall be Arabic numbers ~~or alphabetical letters. Numbers shall not be spelled out. Numbers~~ Each character shall be a minimum of 4 inches (101.6 mm) high with a minimum stroke width of 0.5 inch (12.7 mm). ~~Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response.~~ Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address ~~numbers identification~~ shall be maintained.

Reason: When the address numbers are difficult to find, read or identify, the result is a delay in the emergency response, whether it be for fire, medical assistance, or law enforcement. Address numbers which are spelled out in alpha characters, add to this difficulty in quickly responding to emergency situations.

This proposal will require that the address numbers are numeric and clearly identifiable. There are correlating sections in the IBC, IFC, IPMC and IRC with regard to address identification.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

**PART I – IFC
Committee Action:**

Approved as Modified

Modify the proposal as follows:

505.1 Address identification. New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be a minimum of 4 inches (101.6 mm) high with a minimum stroke width of 0.5 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

Committee Reason: The committee agreed with the proponent that the code change brings uniformity to the subject across the codes and clarifies the intent of the section. The modification retains the alphabetical letters to give the fire code official more flexibility in dealing with existing buildings that may have been addressed with letters years ago.

Assembly Action:

None

Final Hearing Results

F43-13 Part I

AM

Code Change No: F43-13 Part II

Original Proposal

Section(s): IFC 505.1; IBC [F] 501.2; IPMC [F] 304.3; IRC R319.1

THIS IS A 4 PART CODE CHANGE. PARTS I THROUGH III WILL BE HEARD BY THE IFC CODE DEVELOPMENT COMMITTEE. PART IV WILL BE HEARD BY THE IRC B/E CODE DEVELOPMENT COMMITTEE. ALL 4 PARTS WILL BE HEARD AS SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

PART II – INTERNATIONAL BUILDING CODE

Revise as follows:

[F] 501.2 Address identification. ~~New and existing buildings shall be provided with approved address numbers or letters identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) in height and not less than 0.5 inch (12.7 mm) in width. They shall be installed on a contrasting background and be plainly visible from the street or road fronting the property. When~~ Where required by the fire code official, address numbers identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure. Address ~~numbers~~ identification shall be maintained.

Reason: When the address numbers are difficult to find, read or identify, the result is a delay in the emergency response, whether it be for fire, medical assistance, or law enforcement. Address numbers which are spelled out in alpha characters, add to this difficulty in quickly responding to emergency situations.

This proposal will require that the address numbers are numeric and clearly identifiable. There are correlating sections in the IBC, IFC, IPMC and IRC with regard to address identification.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

PART II – IBC

Committee Action:

Approved as Modified

Modify the proposal as follows:

[F] 501.2 Address identification. New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) in height ~~and not less than~~ with a minimum stroke width of 0.5 inch (12.7 mm) in width. Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure. Address identification shall be maintained.

Committee Reason: The committee agreed with the proponent that the code change brings uniformity to the subject across the codes and clarifies the intent of the section. The modification retains the alphabetical letters to give the building official more flexibility in dealing with existing buildings that may have been addressed with letters years ago. The modification also clarifies that it is the required width of the stroke that must be ½ inch in width, not the whole numeral.

Assembly Action:

None

Final Hearing Results

F43-13 Part II

AM

Code Change No: F43-13 Part III

Original Proposal

Section(s): IFC 505.1; IBC [F] 501.2; IPMC [F] 304.3; IRC R319.1

THIS IS A 4 PART CODE CHANGE. PARTS I THROUGH III WILL BE HEARD BY THE IFC CODE DEVELOPMENT COMMITTEE. PART IV WILL BE HEARD BY THE IRC B/E CODE DEVELOPMENT COMMITTEE. ALL 4 PARTS WILL BE HEARD AS SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

PART III – INTERNATIONAL PROPERTY MAINTENANCE CODE

Revise as follows:

[F] 304.3 Premises Address identification. Buildings shall ~~have be provided with~~ approved address numbers ~~identification~~. ~~The address identification shall be legible and~~ placed in a position to be ~~plainly legible and~~ visible from the street or road fronting the property. ~~These numbers~~ Address identification characters shall contrast with their background. Address numbers shall be Arabic numerals ~~or alphabet letters~~. ~~Numbers shall not be spelled out~~. ~~Numbers~~ Each character shall be a minimum of 4 inches (102 mm) in height with a minimum stroke width of 0.5 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

Reason: When the address numbers are difficult to find, read or identify, the result is a delay in the emergency response, whether it be for fire, medical assistance, or law enforcement. Address numbers which are spelled out in alpha characters, add to this difficulty in quickly responding to emergency situations.

This proposal will require that the address numbers are numeric and clearly identifiable. There are correlating sections in the IBC, IFC, IPMC and IRC with regard to address identification.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

PART III – IPMC

Committee Action:

Approved as Modified

Modify the proposal as follows:

[F] 304.3 Address identification. Buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position to be visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numerals or alphabetical letters. Numbers shall not be spelled out. Each character shall be a minimum of 4 inches (102 mm) in height with a minimum stroke width of 0.5 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

Committee Reason: The committee agreed with the proponent that the code change brings uniformity to the subject across the codes and clarifies the intent of the section. The modification retains the alphabetical letters to give the code official more flexibility in dealing with existing buildings that may have been addressed with letters years ago.

Assembly Action:

None

Final Hearing Results

F43-13 Part III

AM

Code Change No: F43-13 Part IV

Original Proposal

Section(s): IFC 505.1; IBC [F] 501.2; IPMC [F] 304.3; IRC R319.1

THIS IS A 4 PART CODE CHANGE. PARTS I THROUGH III WILL BE HEARD BY THE IFC CODE DEVELOPMENT COMMITTEE. PART IV WILL BE HEARD BY THE IRC B/E CODE DEVELOPMENT COMMITTEE. ALL 4 PARTS WILL BE HEARD AS SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

PART IV – INTERNATIONAL RESIDENTIAL CODE

Revise as follows:

R319.1 Address numbers identification. Buildings shall ~~have be provided with approved address numbers, building numbers or approved building identification.~~ The address identification shall be legible and placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Numbers-Each character shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of $\frac{1}{8}$ 0.5 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

Reason: When the address numbers are difficult to find, read or identify, the result is a delay in the emergency response, whether it be for fire, medical assistance, or law enforcement. Address numbers which are spelled out in alpha characters, add to this difficulty in quickly responding to emergency situations.

This proposal will require that the address numbers are numeric and clearly identifiable. There are correlating sections in the IBC, IFC, IPMC and IRC with regard to address identification.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

PART IV – IRC Building Committee Action:

Approved as Modified

Modify the proposal as follows:

R319.1 Address identification. Buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of 0.5 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

Committee Reason: The committee approved this proposed code change and modification to be consistent with prior actions by other committees on other parts of this proposal. Similar requirements are also contained in the International Property Maintenance Code and it is important to also have similar requirements for new buildings. This assures that visitors and fire fighters can identify structures.

Assembly Action:

None

Final Hearing Results

F43-13 Part IV

AM

Code Change No: F45-13

Original Proposal

Section(s): 507.4, Chapter 80

Proponent: Bob D. Morgan, P.E., Fort Worth, TX Fire Department representing Fire Advisory Board to North Central Texas Council of Governments

Revise as follows:

507.4 Water supply test date and information. The water supply test used for hydraulic calculation of fire protection systems shall be conducted in accordance with NFPA 291 and within one year of sprinkler plan submittal, or as otherwise approved by the fire code official. The fire code official shall be notified prior to the water supply test. Water supply tests shall be witnessed by the fire code official, as required or approved documentation of the test shall be provided to the fire code official prior to final approval of the water supply system. The exact location of the static/residual hydrant and the flow hydrant shall be indicated on the design drawings. All fire protection plan submittals shall be accompanied by waterflow test report information, or as otherwise approved by the fire code official. At a minimum, the waterflow test report shall indicate the documented fluctuation of the water supply system in question, in accordance with the water supply operator or authority, for an entire year. The fire protection designer shall then design the fire protection system including this fluctuation information, in accordance with the applicable referenced NFPA standard.

Add new standard to Chapter 80 as follows:

NFPA

291-13 Recommended Practice for Fire Flow Testing and Marking of Hydrants 507.4

Reason: Water supply system fluctuation is regularly ignored in fire protection design. Often times, a sprinkler system is designed based on a fire hydrant flow test that only represents one point in time throughout the year when water supply systems may fluctuate up to 50 psi in some areas or more, based on summer vs. winter demands of the systems. This information is critical to ensure that such fire protection systems are designed to account for this potential fluctuation.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 291-13, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of NFPA 291-13 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Disapproved

Committee Reason: The committee's disapproval was based on the fact that the code change belongs in Chapter 9 since its focus is on fire protection system calculations rather than on fire protection water supply. Also, gathering an entire year of test data can be problematic in areas of the country where testing can only be done for 4 or 5 months out of the year due to weather extremes.

Assembly Action:

None

Public Comments

Public Comment:

Bob D. Morgan, P.E., Fort Worth Fire Dept., representing Fire Advisory Board to North Central Texas Council of Governments, requests Approval as Modified by this Public Comment.

Replace the proposal as follows:

903.3.5 Water supplies. Water supplies for *automatic sprinkler systems* shall comply with this section and the standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with the requirements of this section and the *International Plumbing Code*. For connections to public waterworks systems, the water supply test used for design of fire protection systems shall be adjusted to account for seasonal and daily pressure fluctuations based on information from the water supply authority and as approved by the fire code official.

Commenter's Reason: This public comment replaces the original proposal by relocating the new wording to Chapter 9, as per the committee's reason statement for Disapproval. There is no longer a proposed change to Section 507.4, but rather to Section 903.3.5. Also, such information on pressure fluctuation is not only necessary to ensure that the minimum required pressure will be available for the fire sprinkler system, but also, to ensure that high pressures do not exceed boundaries of the sprinkler system. If the water pressure on a sprinkler system exceeds 100 psi, changes in the hanging methods are required. Also, if a fire pump is provided, it might be possible to exceed 175 psi, which is typically considered the maximum working pressure for a sprinkler system. These are just additional reasons for why it is critical to account for pressure fluctuations in the water supply. Obviously, fire flows can be affected by this, as well as other water-based fire protection systems, such as standpipes, which require a minimum 100 psi at the roof of high-rise buildings, and such may not be available due to pressure fluctuations. That is why the original proposal was made to water supply tests in general, in addition to the fact, that one would usually acquire that information at the time of water supply testing. However, the above public comment relocates the change to the applicable section of 903 to satisfy the committee's request. With regards to gathering of data, the above code change simply requires that pressure fluctuations be addressed as per the water supply authority, i.e. to the extent that such information is available, and further allows the fire code official to accept otherwise.

Final Hearing Results

F45-13

AMPC

Code Change No: F47-13

Original Proposal

Section(s): 508.1.5 (New), 315.3.3

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

508.1.5 Storage. Storage unrelated to operation of the Fire Command Center shall be prohibited.

(Re-number subsequent section)

Revise as follows:

315.3.3 Equipment rooms. Combustible material shall not be stored in boiler rooms, mechanical rooms, or electrical equipment rooms or in fire command centers as specified in Section 508.1.5.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Fire command centers need to be dedicated to firefighting operations.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee felt that the code change would provide better housekeeping within fire command centers, especially when those areas are shared with other building functions such as the security office.

Assembly Action:

None

Final Hearing Results

F47-12

AS

Code Change No: F53-13

Original Proposal

Section(s): 604.1 (IBC [F] 2702.1), 202

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

604.1 (IBC [F] 2702.1) Installation General. Emergency power systems and standby power systems required by this code or the *International Building Code* shall be installed in accordance with this code, NFPA 110 and NFPA 111. Existing installations shall be maintained in accordance with the original approval. shall comply with Sections 604.1.1 through 604.1.7 (IBC [F] 2702.1.1 through [F] 2702.1.6).

604.1.1 (IBC [F] 2702.1.1) Stationary generators. Stationary emergency and standby power generators required by this code shall be *listed* in accordance with UL 2200.

604.1.2 (IBC [F] 2702.1.2) Electrical. Emergency power systems and standby power systems shall be installed in accordance with NFPA 70, NFPA 110 and NFPA 111.

604.1.3 (IBC [F] 2702.1.3) Load transfer. Emergency power systems shall automatically provide secondary power within 10 seconds after primary power is lost, unless specified otherwise in this code. Standby power systems shall automatically provide secondary power within 60 seconds after primary power is lost unless specified otherwise in this code.

604.1.4 (IBC [F] 2702.1.4) Load duration. Emergency power systems and standby power systems shall be designed to provide the required power for a minimum duration of two hours without being refueled or recharged, unless specified otherwise in this code.

604.1.5 (IBC [F] 2702.1.5) Uninterruptable power source. An uninterrupted source of power shall be provided for equipment when required by the manufacturer's instructions, the listing, this code, or applicable referenced standards.

604.1.6 (IBC [F] 2702.1.6) Interchangeability. Emergency power systems shall be an acceptable alternative for installations that require standby power systems.

604.1.7 Maintenance. Existing installations shall be maintained in accordance with the original approval and Section 604.3.

Add new text as follows:

SECTION 202 DEFINITIONS

EMERGENCY POWER SYSTEM. A source of automatic electric power of a required capacity and duration to operate required life safety, fire alarm, detection and ventilation systems in the event of a failure of the primary power. Emergency power systems are required for electrical loads where interruption of the primary power could result in loss of human life or serious injuries.

STANDBY POWER SYSTEM. A source of automatic electric power of a required capacity and duration to operate required building, hazardous materials or ventilation systems in the event of a failure of the primary power. Standby power systems are required for electrical loads where interruption of the primary power could create hazards or hamper rescue or fire-fighting operations.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

The requirements for emergency and standby power system are not treated in a consistent manner in the I-codes. This is one of several proposals designed to add consistency to these requirements. This proposal accomplishes the following:

1. Introduces definitions for emergency power systems and standby power systems that are consistent with definitions in NFPA 110 and NFPA 111.
2. Provides definitive requirements for maximum load transfer times. Emergency power systems must automatically transfer loads within 10 seconds after primary power is lost and standby power systems must automatically transfer loads within 60 seconds after primary power is lost. These times are allowed to vary if so specified in the code
3. To properly design emergency and standby power systems the minimum load duration must be known. This proposal introduces a default minimum two hour duration for systems unless another load duration is specified.
4. Uninterruptible power sources must be provided if required by the manufacturer's instructions, the listing, the code, or applicable referenced standards, such as NFPA 72.
5. A new section clarifies that an emergency power system can be provided to power loads for equipment that requires a standby power source.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

604.1.2 (IBC [F] 2702.1.2) Electrical. Installation. Emergency power systems and standby power systems required by this code or the *International Building Code* shall be installed in accordance with the *International Building Code*, NFPA 70, NFPA 110 and NFPA 111.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee approved the code change based on the proponent's reason statement and agreed that the proposal provides needed definitions and brings clarity to the emergency and standby power requirements. The modifications clarify which systems are included and also provide an important link to IBC flood plain, structural, etc. requirements.

Assembly Action:

None

Final Hearing Results

F53-13

AM

Code Change No: F54-13

Original Proposal

Section(s): 604.1.2 (New) (IBC [F] 2702.1.2), Chapter 80

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Add new text as follows:

604.1.1(IBC [F] 2702.1.1) Stationary generators. Stationary emergency and standby power generators required by this code shall be *listed* in accordance with UL 2200

604.1.2 (IBC [F] 2702.1.2) Group I-2 Occupancies. In Group I-2 occupancies, where an essential electrical system is located in flood hazard areas established in Section 1612.3 of the *International Building Code*, the system shall be located and installed in accordance with ASCE 24.

Add new standard to Chapter 80 as follows:

ASCE 24-05 Flood Resistant Design and Construction 604.1.2

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

There is no way to get to the requirements or limitations regarding generator placement for healthcare facilities that are in the standard if the code text for the specific code section does not take you there.

The Adhoc committee on healthcare identified this coordination oversight as it has been identified in healthcare facilities and that generators are being installed in areas subject to flooding, and although they were designed to meet the structural loads for the flooding, they would operationally fail.

There is no cost impact for these requirements because the compliance with ASCE 24 is required for these facilities; specific reference to ASCE for coordination of requirements applicable to healthcare facilities that require emergency or standby power systems per federal, state and licensing agency requirements and references. Also, both this section and this proposal are not intended to be retroactive in application. The AHC has a separate code change that would require facilities to do a risk assessment of existing installations.

It is an installation construction requirement that is not specifically addressed in the code; emergency and standby power by generators is necessary for life safety and preservation for healthcare and for other occupancies and uses as specified in 2702.

Note that G80-12 added requirements for essential electrical systems in I-2 occupancies. This is simply a continuation of that concept. This proposal is furthering the reliability of the essential electrical systems when they will be needed most by specifically referencing to ASCE 24. The additional language referencing Section 1612.3 is similar to that used in Section 3001.2 for elevators.

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

Analysis: The standard proposed for inclusion in the code, ASCE 24-05, is currently referenced in the IBC. An update in the year edition of that standard will be accomplished by an administrative standards update code change to be heard by the ADM Code Development Committee.

Public Hearing Results

For staff analysis of the content of ASCE/SEI 24-05 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Modified

Modify the proposal as follows:

604.1.2 (IBC [F] 2702.1.2) Group I-2 Occupancies. In Group I-2 occupancies, in new construction or where the building is substantially damaged, where an essential electrical system is located in flood hazard areas established in Section 1612.3 of the *International Building Code*, the system shall be located and installed in accordance with ASCE 24.

(Portions of proposal not shown remain unchanged.)

Committee Reason: The committee approved the code change based on the proponent's reason statement and agreed that the proposal provides for important protection for critical systems. The modification clarifies that the applicability of the section would be to existing buildings only when they sustain substantial damage such as from the recent east coast hurricane.

Assembly Action:

None

Public Comments

Public Comment:

John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care, requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

604.1.2 (IBC [F] 2702.1.2) Group I-2 Occupancies. In Group I-2 occupancies, ~~in new construction or where the building is substantially damaged~~, where an essential electrical system is located in flood hazard areas established in Section 1612.3 of the *International Building Code*, and where new or replacement essential electrical system generators are installed, the system shall be located and installed in accordance with ASCE 24.

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: The Adhoc committee recommends that generators be protected from floods sooner than when a building is substantially damaged. However, the Adhoc committee did not feel that generators should have to be protected if a flood plane was revised and no alterations were planned at that time. This modification will work with the hospital hazard vulnerability analysis and risk assessments. We believe that this proposal would require modifications when a substantial change is contemplated the trigger being the generator.

Final Hearing Results

F54-13

AMPC

Code Change No: F55-13

Original Proposal

Section(s): 604.2.14.1.3 (IBC [F] 403.4.8.2) (New)

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self
(rjd@davidsoncodeconcepts.com)

Add new text as follows:

604.2.14.1 (IBC [F] 403.4.8.1) Standby power. A standby power system shall be provided. Where the standby system is a generator set inside a building, the system shall be located in a separate room enclosed with 2-hour fire barriers constructed in accordance with Section 707 of the International Building Code or horizontal assemblies constructed in accordance with Section 711 of the International Building Code, or both. System supervision with manual start and transfer features shall be provided at the fire command center.

604.2.14.1.1 Fuel supply. *(No change to current text.)*

604.2.14.1.2 Capacity. *(No change to current text)*

604.2.14.1.3 (IBC [F] 403.4.8.2) Fuel line piping protection: Fuel lines supplying a generator set inside a building shall be separated from areas of the building other than the room the generator is located in by fire barriers or by an approved piping protective system that have a fire-resistance rating of not less than 2 hours. Where gypsum wallboard is used, joints on the piping side of the enclosure are not required to be taped. Access openings into the enclosure shall be protected by approved fire protection-rated assemblies.

(Renumber subsequent sections)

Reason: Currently IFC Section 604.2.14.1 and IBC Section [F] 403.4.8.1 require the generator to be protected from a fire within the occupancy by enclosure with 2 hour fire-resistance rated construction.

However, for diesel fueled generators it is common to supply the generators with a day tank and resupply the day tank via remote fuel oil tanks and the fuel line piping from those remote tanks to the generator can be exposed to the fire the generator has been protected against. Loss of the fuel line due to fire exposure has the same impact as loss of the generator itself from fire exposure. The wording only refers to "fuel lines" to also provide protection in those cases where a gaseous fuel supply is approved for use.

This proposal calls for fire-resistance protection of those portions of the fuel line piping that are located outside of the fire-resistance rated room the generator is located in. A portion of the new language was taken from IBC Section [F]415.10.6.4 where protection of HPM supply piping is provided for.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The committee's disapproval was based on its concern that rather than simply requiring a 2-hour fire-resistance-rated assembly, the proposal specifies methods and materials that may or not be consistent with a 2-hour rated assembly. The committee also felt that there was inadequate justification for the change and noted that sprinkler protection was not credited in reducing the hazard of fire exposure cited in the reason statement.

Assembly Action:

None

Public Comments

Public Comment:

Robert J Davidson, Davidson Code Concepts, LLC, representing self, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

604.2.14.1.3 (IBC [F] 403.4.8.2) Fuel line piping protection: Fuel lines supplying a generator set inside a building shall be separated from areas of the building other than the room the generator is located in ~~by fire barriers or by an approved piping protective system method or assembly that have~~ has a fire-resistance rating of not less than 2 hours. ~~Where gypsum wallboard is used, joints on the piping side of the enclosure are not required to be taped. Access openings into the enclosure shall be protected by approved fire protection rated assemblies. Where the building is protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 the required fire-resistance rating may be reduced to 1 hour.~~

Commenter's Reason: In response to the committee concerns the specific methods have been deleted to instead refer to a generic requirement of protection with "an approved method or assembly". In recognition of the committee discussion this modified wording provides for acceptance of a wider base of solutions.

Recognition for sprinkler protection has been added with a reduction of the 2 hour protection to 1 hour when the building is protected throughout by an automatic sprinkler system in response to committee concerns.

Though there was one committee member that did not see the need for the protection, there were several members that agreed with the concept, but not the language that was initially proposed.

Final Hearing Results

F55-13

AMPC

Code Change No: F56-13

Original Proposal

Section(s): 604.2.1 through 604.2.18 (IBC [F] 2702.2.1 through [F] 2702.2.20)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee

Revise as follows:

IFC Sections 604.2.1 through 604.2.18 (IBC Sections [F] 2702.2.1 through [F] 2702.2.20): Arrange these sections in alphabetical order by title.

Reason: There does not appear to be a single method followed for arranging the order of these sections. This proposal will make it easier to locate requirements for specific systems.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and agreed that the proposal provides a more user friendly editorial reorganization.

Assembly Action:

None

Final Hearing Results

F56-12

AS

Code Change No: F57-13

Original Proposal

Section(s): 604.3 (New) [IBC [F] 2702.3 (New)]; Chapter 80 (IBC Chapter 35)

Proponent: Bob Eugene, representing Underwriters Laboratories (Robert.Eugene@ul.com)

Add new text as follows:

604.3 (IBC [F] 2702.3) Critical circuits. Cables used for survivability of critical circuits shall be listed in accordance with UL 2196. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

(Renumber subsequent sections)

Add new standard to Chapter 80 (IBC Chapter 35) as follows:

UL

2196-2001 Tests for Fire Resistive Cables, with revisions through December 7, 2003...604.3 (2703.2)

Reason: UL 2196 is the ANSI approved standard for tests of fire resistive cables. NFPA 20 (fire pumps) and NFPA 72 (fire alarm) include selective survivability requirements to assure integrity of certain critical circuits. NFPA 70 does not specify the applicable standard within the mandatory provisions of the code, but recognizes electrical circuit protective systems as an alternate to listed cables. An electrical circuit protective system is a field assembly of components that must be installed according to the listing requirements and manufacturer's instructions in order to maintain the listing for the system. There are more than two dozen electrical circuit protective systems listed in the UL Fire Resistance Directory.

Cost Impact: The code change proposal may or may not increase the cost of construction. Such systems are already commonly installed.

Public Hearing Results

For staff analysis of the content of UL2196-2001 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Modified

Modify the proposal as follows:

604.3 (IBC [F] 2702.3) Critical circuits. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee agreed with the proponent's reason statement that the code change brings needed clarity regarding critical circuits and provides correlation with similar language used in many referenced standards, including NFPA 20, 70 and 72. Though the committee expressed some concern that the term "critical circuits" is not defined, it was pointed out that the phrase is widely used and described throughout nationally recognized standards and industry practices. The modification clarifies that the requirement only applies to required critical circuits.

Assembly Action:

None

Public Comments

Public Comment 1:

Bob Eugene, representing UL LLC, requests Approval as Modified by Public Comment.

Further modify the proposal as follows:

UL	Standard Reference Number	Underwriters Laboratories Title	Referenced in Code Section Number
2196-2001		Tests for Fire Resistive Cables, with revisions through December 7, 2003 <u>March 2012</u>	604.3 (2703.2)

(Portions of proposal not shown remain unchanged)

Commenter's Reason: This proposal was originally submitted with the Group A proposals, but held over for the Group B proposals. The revisions to the standard, including ANSI approval, occurred after the original submittal and should be included in the 2015 edition of the codes.

Analysis: The edition of UL2196 that was submitted for review by the IFC Committee included the revisions through March, 2012. For the staff analysis of the content of this standard, please visit: <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Public Comment 2:

Marcelo M. Hirschler, (GBH International), requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

**SECTION 202
GENERAL DEFINITIONS**

Add new definition as follows:

CRITICAL CIRCUIT. A circuit that requires continuous operation to ensure safety of the structure and occupants.

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: During the proposal stage an issue was raised by the committee that the term "critical circuit" is not defined. This proposed definition is based on the definitions in section 645.2 and 708.2 of the National Electrical Code (NFPA 70), which read as shown below. Article 645 deals with Information Technology Equipment and article 708 deals with Critical Operations Power Systems.

645.2: Critical Operations Data System. An information technology equipment system that requires continuous operation for reasons of public safety, emergency management, national security, or business continuity.

708.2: Critical Operations Power Systems (COPS). Power systems for facilities or parts of facilities that require continuous operation for the reasons of public safety, emergency management, national security, or business continuity.

The National Electrical Code also states, in article 725 that:

Circuit Integrity (CI) Cable. Cable(s) used for remote control, signaling, or power-limited systems that supply critical circuits to ensure survivability for continued circuit operation for a specified time under fire conditions.

Circuit Integrity (CI) Cable or Electrical Circuit Protective System. Cables used for survivability of critical circuits shall be listed as circuit integrity (CI) cable. Cables specified in 725.154(A), (B), (D)(1), and (E), and used for circuit integrity, shall have the additional classification using the suffix "-CI". Cables that are part of a listed electrical circuit protective system shall be considered to meet the requirements of survivability.

Informational Note: One method of defining *circuit integrity* is by establishing a minimum 2-hour fire resistance rating when tested in accordance with UL 2196-2002, *Standard for Tests of Fire Resistive Cables*. The same concept is shown in several articles, including 760, 770 and 800.

Final Hearing Results

F57-13

AMPC1, 2

Code Change No: F59-13 Part I

Original Proposal

Section(s): 604 (IBC [F] 2702) among others; 907.5.2.2.5 (IBC [F] 907.5.2.2.5); IMC [F] 513.11, [F] 513.11.1 (New); IWUIC 404.10.3; IEBC 805.4.5

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IFC COMMITTEE AND PART II WILL BE HEARD BY THE IEBC COMMITTEE AS TWO SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THOSE COMMITTEES.

PART I – INTERNATIONAL FIRE CODE

EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 402.7.3 Emergency Standby power. Covered mall buildings greater than 50,000 square feet (4645 m²) in area and open mall buildings greater than 50,000 square feet (4645 m²) within the established perimeter line shall be provided with standby emergency power systems that is are capable of operating the emergency voice/alarm communication system in accordance with Section 2702.

[F] 907.5.2.2.5 Emergency power. Emergency voice/alarm communications systems shall be provided with an ~~approved~~ emergency power source in accordance with Section 2702. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

[F] 2702.2.1 Group A occupancies. Emergency power shall be provided for emergency voice/alarm communication systems in Group A occupancies in accordance with ~~Section 907.5.2.2.4.~~

[F] 2702.2.14 Covered and open mall buildings. Standby power shall be provided for voice/alarm communication systems in ~~covered and open mall buildings~~ in accordance with ~~Section 402.7.3.~~

[F] 2702.2.1 Emergency voice/alarm communication systems. Emergency power shall be provided for emergency voice/alarm communication systems as required in Section 907.5.2.2.5. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

Revise the IFC as follows:

~~**604.2.1 Group A occupancies.** Emergency power shall be provided for emergency voice/alarm communication systems in Group A occupancies in accordance with Section 907.2.1.1.~~

~~**604.2.13 Covered and open mall buildings.** Covered mall buildings exceeding 50,000 square feet (4645 m²) and open mall buildings exceeding 50,000 square feet (4645 m²) within the established perimeter line shall be provided with standby power systems that are capable of operating the emergency voice/alarm communication system.~~

604.2.1 Emergency voice/alarm communication systems. Emergency power shall be provided for emergency voice/alarm communication systems as required in Section 907.5.2.2.5. 5. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

907.5.2.2.5 Emergency power. Emergency voice/alarm communications systems shall be provided with an ~~approved~~ emergency power source in accordance with Section 604. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

SMOKE CONTROL SYSTEMS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 404.7 Standby power. Equipment required to provide smoke control shall be provided with standby power in accordance with ~~connected to a standby power system in accordance with~~ Section 909.11.

[F] 909.11 Standby power ~~Power systems.~~ ~~The s~~Smoke control systems shall be provided with standby power in accordance with Section 2702. ~~shall be supplied with two sources of power. Primary power shall be from the normal building power systems. Secondary power shall be from an approved standby source complying with Chapter 27 of this code.~~

[F] 909.11.1 Equipment room. The standby power source and its transfer switches shall be in a room separate from the normal power transformers and switch gears and ventilated directly to and from the exterior. The room shall be enclosed with not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. ~~The transfer to full standby power shall be automatic and within 60 seconds of failure of the primary power.~~

909.20.6.2 Standby power. Mechanical vestibule and *stair* shaft ventilation systems and automatic fire detection systems shall be provided with ~~powered by an approved~~ standby power in accordance with Section 2702. ~~system conforming to Section 403.4.8 and Chapter 27.~~

909.21.5 Standby power. The pressurization system shall be provided with standby power in accordance with Section 2702. ~~from the same source as other required emergency systems for the building.~~

[F] 2702.2.2 Smoke control systems. Standby power shall be provided for smoke control systems as required in ~~in accordance with~~ Sections 404.7, 909.11, 909.20.6.2, and 909.21.5.

[F] 2702.2.20 Smokeproof enclosures. Standby power shall be provided for smokeproof enclosures as required by in ~~in~~ Section 909.20.6.2.

Revise the IFC as follows:

604.2.2 Smoke control systems. Standby power shall be provided for smoke control systems as required in ~~in accordance with~~ Section 909.11.

909.11 Standby power ~~Power systems.~~ ~~The s~~Smoke control systems shall be provided with standby power in accordance with Section 2702. ~~shall be supplied with two sources of power. Primary power shall be from the normal building power systems. Secondary power shall be from an approved standby source complying with Chapter 27 of this code.~~

909.11.1 Equipment room. The standby power source and its transfer switches shall be in a room separate from the normal power transformers and switch gears and ventilated directly to and from the exterior. The room shall be enclosed with not less than 1-hour *fire barriers* constructed in accordance with

Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. ~~The transfer to full standby power shall be automatic and within 60 seconds of failure of the primary power.~~

Revise the IMC as follows:

[F] 513.11 Power systems. ~~The sSmoke control system shall be supplied with standby power in accordance with Section 2702 of the International Building Code, two sources of power. Primary power shall be the normal building power systems. Secondary power shall be from an approved standby source complying with Chapter 27 of the International Building Code.~~

[F] 513.11.1 Equipment room. The standby power source and its transfer switches shall be in a room separate from the normal power transformers and switch gear and ventilated directly to and from the exterior. The room shall be enclosed with not less than 1-hour fire-resistance rated fire barriers constructed in accordance with Section 707 of the *International Building Code* or horizontal assemblies constructed in accordance with Section 711 of the *International Building Code*, or both. Power distribution from the two sources shall be by independent routes. ~~Transfer to full standby power shall be automatic and within 60 seconds of failure of the primary power. The systems shall comply with NFPA 70.~~

EXIT SIGNS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 2702.2.3 Exit signs. Emergency power shall be provided for *exit signs* as required in in accordance with Section 1011.6.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

Revise the IFC as follows:

604.2.3 Exit signs. Emergency power shall be provided for *exit signs* as required in in accordance with Section 1011.6.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

MEANS OF EGRESS ILLUMINATION

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 2702.2.4 Means of egress illumination. Emergency power shall be provided for *means of egress illumination* as required in in accordance with Section 1006.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

Revise the IFC as follows:

604.2.4 Means of egress illumination. Emergency power shall be provided for *means of egress illumination* in accordance with Sections 1006.3 and 1104.5.1.

1104.5.1 Emergency power duration and installation. Emergency power for means of egress illumination shall be provided in accordance with Section 604. In other than Group I-2, ~~the emergency power system shall provide power~~ shall be provided for not less than 60 minutes. ~~and consist of storage batteries, unit equipment or an on-site generator.~~ In Group I-2, the emergency power system shall provide

power shall be provided for not less than 90 minutes, and consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 604.

ELEVATORS AND PLATFORM LIFTS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 2702.2.5 Elevators and platform lifts. Standby power shall be provided for elevators and platform lifts as required in Sections 1007.4, 1007.5, 3003.1, 3007.9 and 3008.9.

[F] 2702.2.5 Accessible means of egress elevators. Standby power shall be provided for elevators that are part of an accessible means of egress in accordance with Section 1007.4.

[F] 2702.2.6 Accessible means of egress platform lifts. Standby power in accordance with this section or ASME A 18.1 shall be provided for platform lifts that are part of an accessible means of egress in accordance with Section 1007.5.

[F] 2702.2.19 Elevators. Standby power for elevators shall be provided as set forth in Sections 3003.1, 3007.9 and 3008.9.

Revise the IFC as follows:

604.2.5 Accessible means of egress elevators. Standby power shall be provided for elevators that are part of an accessible means of egress in accordance with Section 1007.4.

604.2.6 Accessible means of egress platform lifts. Standby power in accordance with this section or ASME A18.1 shall be provided for platform lifts that are part of an accessible means of egress in accordance with Section 1007.5.

604.2.18 Elevators and platform lifts. Standby power shall be provided for elevators and platform lifts as required in Sections 607.2, 1007.4, and 1007.5.

Relocate IFC sections and renumber the remaining sections.

607.2 Standby power. 604.2.18 Elevators. In buildings and structures where standby power is required or furnished to operate an elevator, standby power shall be provided in accordance with Section 604, the operation of the system shall be in accordance with Sections 604.2.18.1 through 604.2.18.4 607.2.1 through 607.2.4.

607.2.1 604.2.18.1 Manual transfer. (No change to current text.)

607.2.2 604.2.18.2 One elevator. (No change to current text.)

607.2.3 604.2.18.3 Two or more elevators. (No change to current text.)

607.2.4 604.2.18.4 Machine room ventilation. (No change to current text.)

HORIZONTAL SLIDING DOORS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 2702.2.7 Horizontal sliding doors. Standby power shall be provided for horizontal sliding doors as required in accordance with Section 1008.1.4.3. The standby power supply shall have a capacity to operate a minimum of 50 closing cycles of the door.

Revise the IFC as follows:

604.2.7 Horizontal sliding doors. Standby power shall be provided for horizontal sliding doors as required in accordance with Section 1008.1.4.3. The standby power supply shall have a capacity to operate a minimum of 50 closing cycles of the door.

MEMBRANE STRUCTURES

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 2702.2.9 Membrane structures. Standby power shall be provided for auxiliary inflation systems in permanent membrane structures as required in accordance with Section 3102.8.2. Standby power shall be provided for a duration of not less than four hours. Auxiliary inflation systems in temporary air-supported and air-inflated membrane structures shall be provided in accordance with Section 3103.10.4 of Emergency power shall be provided for exit signs in temporary tents and membrane structures in accordance with the International Fire Code.

Revise the IFC as follows:

604.2.9 Membrane structures. ~~Emergency power shall be provided for exit signs in temporary tents and membrane structures in accordance with Section 3103.12.6.1.~~ Standby power shall be provided for auxiliary inflation systems in permanent membrane structures in accordance with Section 2702 of the International Building Code. Auxiliary inflation systems shall be provided in temporary air-supported and air-inflated membrane structures in accordance with Section 3103.10.4.

3103.10.4 Auxiliary inflation systems power. Places of public assembly for more than 200 persons shall be furnished with an auxiliary inflation system capable of powering a blower with the capacity to maintain full inflation pressure with normal leakage in accordance with Section 3103.10.3 for a minimum duration of four hours. The auxiliary inflation system can be either a fully automatic auxiliary engine-generator set capable of powering one blower continuously for 4 hours, or a supplementary blower powered by an internal combustion engine which shall be automatic in operation. The system shall be capable of automatically operating the required blowers at full power within 60 seconds of a commercial power failure.

SEMICONDUCTOR FABRICATION FACILITIES

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 415.10.10 Emergency power system. An emergency power system shall be provided in Group H-5 occupancies in accordance with Section 2702. ~~where required in Section 415.10.10.1.~~ The emergency power system shall ~~be designed to~~ supply power automatically to ~~required the~~ electrical systems specified in Section 415.10.10.1 when the normal electrical supply system is interrupted.

[F] 415.10.10.1 Required electrical systems. Emergency power shall be provided for electrically operated equipment and connected control circuits for the following systems:

1. through 6. (No change to current text.)
7. Manual and automatic fire alarm systems.
8. through 11. (No change to current text.)

[F] 2702.2.8 Semiconductor fabrication facilities. Emergency power shall be provided for semiconductor fabrication facilities as required in ~~in accordance with~~ Section 415.10.10.

Revise the IFC as follows:

604.2.8 Semiconductor fabrication facilities. Emergency power shall be provided for semiconductor fabrication facilities as required in ~~in accordance with~~ Section 2703.15.

2703.15 Emergency power system. An emergency power system shall be provided in Group H-5 occupancies in accordance with ~~where required by~~ Section 604. The emergency power system shall ~~be designed to~~ supply power automatically to ~~required the~~ electrical systems specified in Section 2703.15.1 when the normal supply system is interrupted.

HAZARDOUS MATERIALS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 414.5.3 Emergency or standby power. Where mechanical *ventilation*, treatment systems, temperature control, alarm, detection or other electrically operated systems are required by the *International Fire Code* or this code, such systems shall be provided with ~~an~~ emergency or standby power system in accordance with Section 2702 Chapter 27. **Exceptions:** 1.

[F] 414.5.3.1 Exempt applications. Emergency or standby power are not required for the following ~~storage areas:~~ 1.1. M mechanical ventilation systems provided for:

1. Sstorage of Class IB and Class IC flammable and combustible liquids in closed containers not exceeding 6.5 gallons (25 L) capacity.
~~4.21.1. Storage areas for of Class 1 and 2 oxidizers.~~
~~4.31.2. Storage areas for of Class II, III, IV and V organic peroxides.~~
~~1.41.3. Storage, use and handling areas for of asphyxiant, irritant and radioactive gases.~~
~~1.5. For storage, use and handling areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2 of the International Fire Code.~~

[F] 414.5.3.2 Fail-safe engineered systems. Standby power for mechanical *ventilation*, treatment systems and temperature control systems shall not be required where an *approved* fail-safe engineered system is installed.

[F] 421.8 Standby power. Mechanical *ventilation* and gas detection systems shall be ~~connected to a~~ provided with standby power system in accordance with Section 2702, Chapter 27.

[F] 2702.2.10 Hazardous materials. Emergency or standby power shall be provided in occupancies with hazardous materials as required in ~~in accordance with~~ Sections 414.5.3 and 421.8 and the *International Fire Code*.

Revise the IFC as follows:

604.2.10 Hazardous materials. Emergency ~~or standby~~ power shall be provided in occupancies with hazardous materials as required in the following ~~in accordance with~~ sections 5004.7 and 5005.1.5.:

Hazardous materials – 5001.3.3.10

Highly toxic and toxic gases - 6004.2.2.8, 6004.3.4.2

Organic peroxides - 6204.1.11

5004.7 Standby or emergency power. Where mechanical ventilation, treatment systems, temperature control, alarm, detection or other electrically operated systems are required, such systems shall be provided with an emergency or standby power ~~system~~ in accordance with ~~NFPA 70~~ and Section 604.

Exceptions:

5004.7.1 Exempt applications. Standby or emergency power is not required for ~~M~~mechanical ventilation systems provided for:

1. Storage of Class IB and Class IC flammable and *combustible liquids* in closed containers not exceeding 6 1/2 gallons (25 L) capacity.
2. Storage areas for of Class 1 and 2 oxidizers.
3. Storage areas for of Class II, III, IV and V organic peroxides.
4. Storage areas for of asphyxiant, irritant and radioactive gases.
5. ~~For storage areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2.~~

5004.7.2 Fail-safe engineered systems. ~~6.~~ Standby power for mechanical ventilation, treatment systems and temperature control systems shall not be required where an *approved* fail-safe engineered system is installed.

5005.1.5 Standby or emergency power. Where mechanical ventilation, treatment systems, temperature control, manual alarm, detection or other electrically operated systems are required in this code, such systems shall be provided with an emergency or standby power ~~system~~ in accordance with ~~NFPA 70~~ and Section 604.

Exceptions: 1.

5005.1.5.1 Exempt applications. Standby power for mechanical ventilation, treatment systems and temperature control systems shall not be required where an *approved* fail-safe engineered system is installed.

2. ~~Systems for highly toxic or toxic gases shall be provided with emergency power in accordance with Sections 6004.2.2.8 and 6004.3.4.2.~~

6004.2.2.8 Emergency power. Emergency power shall be provided for the following systems in accordance with the Section 604. ~~and NFPA 70 shall be provided in lieu of standby power where any of the following systems are required:~~

1. through 7. (*No change to current text.*)

6004.2.2.8.1 Fail-safe engineered systems. Exception: Emergency power is shall not be required for mechanical exhaust ventilation, treatment systems and temperature control systems where *approved* fail-safe engineered systems are installed.

6204.1.11 Standby power. Standby power in accordance with ~~Section 604~~ shall be provided for storage areas of Class I and unclassified detonable organic peroxide. shall be provided in accordance with Section 604 for the following systems used to protect Class I and unclassified detonable organic peroxide:

1. through 7. (No change to current text.)

6204.1.11.1 Fail-safe engineered systems. Exception: Standby power shall not be required for mechanical exhaust ventilation, treatment systems and temperature control systems where *approved* fail-safe engineered systems are installed.

HIGH RISE BUILDINGS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 403.4.8 Standby and emergency power. A standby power system complying with Section 2702 Chapter 27 and Section 3003 shall be provided for the standby power loads specified in 403.4.8.2. An emergency power system complying with Section 2702 shall be provided for the emergency power loads specified in Section 403.4.8.3. ~~Where elevators are provided in a high-rise building for accessible means of egress, fire service access or occupant self-evacuation, the standby power system shall also comply with Sections 1007.4, 3007 or 3008, as applicable.~~

[F] 403.4.8.1 Equipment room. Special requirements for standby power systems. If the standby or emergency power system includes is a generator set inside a building, the system shall be located in a separate room enclosed with 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. System supervision with manual start and transfer features shall be provided at the *fire command center*.

[F] 403.4.8.2 Standby power loads. The following are classified as standby power loads:

1. Power and lighting for the *fire command center* required by Section 403.4.6;
2. *Ventilation* and automatic fire detection equipment for *smokeproof enclosures*; and
3. Elevators.
4. Where elevators are provided in a high-rise building for accessible means of egress, fire service access or occupant self-evacuation, the standby power system shall also comply with Sections 1007.4, 3007 or 3008, as applicable.

[F] 403.4.9 Emergency power systems. An emergency power system complying with Chapter 27 shall be provided for emergency power loads specified in Section 403.4.9.1.

[F] 403.4.9.1 403.4.8.3 Emergency power loads. The following are classified as emergency power loads:

1. Exit signs and *means of egress* illumination required by Chapter 10;
2. Elevator car lighting;
3. *Emergency voice/alarm communications systems*;
4. Automatic fire detection systems;
5. *Fire alarm* systems; and
6. Electrically powered fire pumps.

[F] 2702.2.15 High-rise buildings. Emergency and standby power systems shall be provided in high-rise buildings as required in ~~in accordance with~~ Sections 403.4.8 and 403.4.9.

Revise the IFC as follows:

604.2.14 High-rise buildings. Standby power and emergency power, ~~light and emergency systems in high-rise buildings shall be provided as required in Section 403 of the International Building Code, and shall be in accordance with Section 604.~~ comply with the requirements of Sections 604.2.14.1 through 604.2.14.3.

604.2.14.1 Standby power. ~~A standby power system shall be provided. Where the standby system is a generator set inside a building, the system shall be located in a separate room enclosed with 2-hour fire barriers constructed in accordance with Section 707 of the International Building Code or horizontal assemblies constructed in accordance with Section 711 of the International Building Code, or both. System supervision with manual start and transfer features shall be provided at the fire command center.~~

604.2.14.1.1 Fuel supply. ~~An on-premises fuel supply, sufficient for not less than 2-hour full-demand operation of the system, shall be provided.~~

Exception: ~~When approved, the system shall be allowed to be supplied by natural gas pipelines.~~

604.2.14.1.2 Capacity. ~~The standby system shall have a capacity and rating that supplies all equipment required to be operational at the same time. The generating capacity is not required to be sized to operate all of the connected electrical equipment simultaneously.~~

604.2.14.1.3 Connected facilities. ~~Power and lighting facilities for the fire command center and elevators specified in Sections 403.4.8.2 and 403.6 of the International Building Code, as applicable, shall be transferable to the standby source. Standby power shall be provided for at least one elevator to serve all floors and be transferable to any elevator.~~

604.2.14.2 Separate circuits and luminaires. ~~Separate lighting circuits and luminaires shall be required to provide sufficient light with an intensity of not less than 1 footcandle (11 lux) measured at floor level in all means of egress corridors, stairways, smokeproof enclosures, elevator cars and lobbies, and other areas that are clearly a part of the escape route.~~

604.2.14.2.1 Other circuits. ~~Circuits supplying lighting for the fire command center and mechanical equipment rooms shall be transferable to the standby source.~~

604.2.14.3 Emergency systems. ~~Exit signs, exit illumination as required by Chapter 10, electrically powered fire pumps required to maintain pressure, and elevator car lighting are classified as emergency systems and shall operate within 10 seconds of failure of the normal power supply and shall be capable of being transferred to the standby source.~~

Exception: ~~Exit sign, exit and means of egress illumination are permitted to be powered by a standby source in buildings of Group F and S occupancies.~~

UNDERGROUND BUILDINGS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 405.8 Standby and emergency power. A standby power system complying with Section 2702 Chapter 27 shall be provided for the standby power loads specified in Section 405.8.1. An emergency

power system complying with Section 2702 shall be provided for the emergency power loads specified in Section 405.8.2.

[F] 405.8.1 Standby power loads. The following loads are classified as standby power loads:

1. Smoke control system.
2. *Ventilation* and automatic fire detection equipment for *smokeproof enclosures*.
3. Fire pumps.
4. Standby power shall be provided for elevators, as required in in accordance with Section 3003.

~~**[F] 405.8.2 Pick-up time.** The standby power system shall pick up its connected loads within 60 seconds of failure of the normal power supply.~~

~~**[F] 405.9 Emergency power.** An emergency power system complying with Chapter 27 shall be provided for emergency power loads specified in Section 405.9.1.~~

[F] 405.9.1 405.8.2 Emergency power loads. The following loads are classified as emergency power loads:

1. through 5. (*No change to current text.*)

~~**[F] 2702.2.16 Underground buildings.** Emergency and standby power shall be provided in underground buildings as required in in accordance with Sections 405.8 and 405.9.~~

Revise the IFC as follows:

604.2.15 Underground buildings. Emergency and standby power systems shall be provided in underground buildings ~~covered~~ as required in Chapter 4 Section 405 of the *International Building Code* shall comply with Sections 604.2.15.1 and 604.2.15.2. and shall be in accordance with Section 604.

604.2.15.1 Standby power. A standby power system complying with this section and NFPA 70 shall be provided for standby power loads as specified in Section 604.2.15.1.1.

~~**604.2.15.1.1 Standby power loads.** The following loads are classified as standby power loads:~~

- ~~1. Smoke control system.~~
- ~~2. Ventilation and automatic fire detection equipment for smokeproof enclosures.~~
- ~~3. Fire pumps.~~
- ~~4. Standby power shall be provided for elevators in accordance with Section 3003 of the *International Building Code*.~~

~~**604.2.15.1.2 Pickup time.** The standby power system shall pick up its connected loads within 60 seconds of failure of the normal power supply.~~

~~**604.2.15.2 Emergency power.** An emergency power system complying with this code and NFPA 70 shall be provided for emergency power loads as specified in Section 604.2.15.2.1.~~

~~**604.2.15.2.1 Emergency power loads.** The following loads are classified as emergency power loads:~~

- ~~1. Emergency voice/alarm communication systems.~~
- ~~2. Fire alarm systems.~~
- ~~3. Automatic fire detection systems.~~
- ~~4. Elevator car lighting.~~
- ~~5. Means of egress lighting and exit sign illumination as required by Chapter 10.~~

GROUP I-3 OCCUPANCY DOOR LOCKS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part. See Part XX for this subject in the IEBC.

Revise the IBC as follows:

[F] 408.4.2 Power-operated doors and locks. Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 2702. ~~and either emergency power or a remote mechanical operating release shall be provided.~~

Exceptions:

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1.
2. Emergency power is not required when remote mechanical operating releases are provided.

[F] 2702.2.17 Group I-3 occupancies. Emergency power shall be provided for power operated doors and locks in Group I-3 occupancies as required in ~~in accordance with~~ Section 408.4.2.

Revise the IFC as follows:

604.2.16 Group I-3 occupancies. Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 604. ~~and either emergency power or a remote mechanical operating release shall be provided.~~

Exceptions:

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1.
2. Emergency power is not required when remote mechanical operating releases are provided.

AIRPORT TRAFFIC CONTROL TOWERS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 2702.2.18 Airport traffic control towers. ~~Standby power shall be provided in airport traffic control towers in accordance with Section 412.3.4.~~

[F] 412.3.4 Standby power. A standby power system that conforms to Chapter 27 shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:

1. ~~Pressurization equipment, mechanical equipment and lighting.~~
2. ~~Elevator operating equipment.~~
3. ~~Fire alarm and smoke detection systems.~~

Revise the IFC as follows:

604.2.17 Airport traffic control towers. A standby power system shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:

1. ~~Pressurization equipment, mechanical equipment and lighting.~~
2. ~~Elevator operating equipment.~~
3. ~~Fire alarm and smoke detection systems.~~

SMOKE ALARMS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 907.2.11.4 Power source. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system in accordance with Section 2702. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Smoke alarms are not required to be equipped with battery backup where they are connected to an emergency electrical system that complies with Section 2702.

Revise the IFC as follows:

907.2.11.4 Power source. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery back-up shall be connected to an emergency electrical system in accordance with Section 604. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Smoke alarms are not required to be equipped with battery backup where they are connected to an emergency electrical system that complies with Section 604.

EMERGENCY ALARM SYSTEMS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Revise the IBC as follows:

[F] 414.7.4 Emergency alarm systems. Emergency alarm systems shall be provided with emergency power in accordance with Section 2702.

[F] 2702.2.21 Emergency alarm systems. Emergency power shall be provided for emergency alarm systems as required by Section 414.7.4.

Revise the IFC as follows:

604.2.19 Emergency alarm systems. Emergency power shall be provided for emergency alarm systems as required by Section 414 of the International Building Code.

EMERGENCY RESPONDER RADIO COVERAGE SYSTEMS

NOTE: The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "907.5.2 (IBC [F] 907.5.2)" or "1011.6.3 (IFC [B] 1011.6.3)"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.

Add a new Section 2702.2.21 to the IBC as follows:

[F] 2702.2.21 Emergency responder radio coverage systems. Standby power shall be provided for emergency responder radio coverage systems required in Section 915 and the *International Fire Code*. The standby power supply shall be capable of operating the emergency responder radio coverage system for a duration of not less than 24 hours.

Revise the IFC as follows:

510.4.2.3 Standby power. ~~Secondary power.~~ Emergency responder radio coverage systems shall be provided with an approved secondary source of standby power in accordance with Section 604. The secondary standby power supply shall be capable of operating the emergency responder radio coverage system for a period of at least duration of not less than 24 hours. When primary power is lost, the power supply to the emergency responder radio coverage system shall automatically transfer to the secondary power supply.

604.2.19 Emergency responder radio coverage systems. Standby power shall be provided for emergency responder radio coverage systems as required in Section 510.4.2.3. The standby power supply shall be capable of operating the emergency responder radio coverage system for a duration of not less than 24 hours.

FLARING SYSTEMS FOR MECHANICAL REFRIGERATION

Revise the IFC as follows:

606.12.5 Flaring systems. Flaring systems for incineration of flammable refrigerants shall be designed to incinerate the entire discharge. The products of refrigerant incineration shall not pose health or environmental hazards. Incineration shall be automatic upon initiation of discharge, shall be designed to prevent blowback and shall not expose structures or materials to threat of fire. Standby fuel, such as LP gas, and standby power shall have the capacity to operate for one and one-half the required time for complete incineration of refrigerant in the system. Standby electrical power, where required to complete the incineration process, shall be in accordance with Section 604.

WATER SUPPLY POWER

Revise the IWUIC as follows:

404.10.3 Standby power. Standby power shall be provided to pumps, controllers and related electrical equipment so that ~~Stationary~~ water supply facilities within the *wildland-urban interface area* that are dependent on electrical power can provide the required to meet adequate water supply. The standby power system shall be demands shall provide standby power systems in accordance with Section 2702 Chapter 27 of the *International Building Code*, and Section 604 of the *International Fire Code*, and NFPA 70 to ensure that an uninterrupted water supply is maintained. The standby power source shall be capable of providing power for a minimum of two hours.

Exceptions: *(No change to current text.)*

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at:

<http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal is part of a comprehensive rewrite of the I-Codes emergency and standby power requirements. Some edits are made to provide consistency in how standby power is referenced in the codes.

Part I - INTERNATIONAL FIRE CODE

Emergency voice/alarm communication systems: Emergency voice/alarm communication systems are required to include an emergency power source in IBC/IFC Section 907.5.2.2.5. A reference to these systems has been added to IBC 2702.2 and IFC 604.2. With the addition of this requirement it is no longer necessary to indicate that these systems are required in covered malls and Group A occupancies, which are just two of the many occupancies and building types that require emergency voice/alarm communication systems.

All reference in the IFC and IBC to emergency voice/alarm communication systems requires them to be provided with a source of emergency power, except for IBC Section 402.7.3. This oversight was corrected.

Smoke control systems: Smoke control systems are required to include a standby power source in IBC/IFC Section 909.11. In addition the IBC requires standby power to be provided for smoke control systems or components of the systems in Sections 404.7, 909.20.6.2, and 909.21.5. A reference to these section have been added to IBC 2702.2.

By referencing section 909.20.6.2 in Section 2702.2.2, it is no longer necessary to include Section 2702.2.20 smokeproof enclosure reference.

IBC/IFC 909.11 and IMC 513.11 were rather lengthy and included requirements for standby power equipment rooms. These were broken off and put in Section 909.11.1 and 513.11.1. The reference to automatically transferring to standby power within 60 seconds is included in a separate code proposal for Sections 2702.1 and 604.1, and does not need to be repeated here.

Exit signs: The proposal updates references to emergency power requirements by including the appropriate IFC and IBC code sections that specify requirements for emergency power supply and operation of Exit Signs.

Means of egress illumination: Details on system components in 1006.3.1 have been eliminated because these are covered in the revised IFC Section 604.1 and IBC Section 2702.1 requirements. The last part of IFC Section 1006.3 was renumbered 1006.3.1 to match the format used in the equivalent IBC requirements.

Elevators and platform lifts: In IBC Section 2702.2 and IFC Section 604.2, references to three types of elevators or platform lifts were consolidated into a single reference to elevators and platform lifts.

Requirements for the specific rating of the standby systems required in 3007.9 and 3008.9 were removed since they are covered under another comprehensive rewrite of IBC Section 2702.1 and IFC Section 604.1.

Elevator requirements in IFC Section 604.2.18 were relocated to IFC Section 607, which covers similar elevator requirements.

Horizontal sliding doors: The requirement for the standby power supply to have a capacity to operate a minimum of 50 opening and closing cycles of the door is based on requirements in NFPA 80, Section 9.4.2.2.2.

Membrane structures: The IBC and IFC require auxiliary inflation systems to be provided for air-supported and air-inflated membrane structures. (The IBC covers permanent membrane structures and the IFC covers temporary membrane structures). The differences are that permanent air-inflated membrane structures include standby power as covered by Section 2702 of the IBC. Temporary air-inflated membrane structures are required to include an automatic engine-generator set or a blower powered by an internal combustion engine to serve as an auxiliary inflation system in the event of a commercial power failure. These are not required to be permanently installed.

Semiconductor fabrication facilities: Automatic fire alarm systems are required to be provided with emergency power, which is consistent with NFPA 72.

Hazardous materials: Reference in Section 2702 of the IBC for emergency power for pyrophoric materials to be provided in accordance with the IFC was removed since backup power is not required in IFC Chapter 64.

IBC Section 414.5.3 and IFC Section 5004.7 were reformatted with no substantive changes to the systems that do not require emergency or standby power and fail-safe engineered systems.

In IBC Section 414.5.3 the requirements to provide emergency power for ventilation systems required by the IBC (or this code) were removed. This eliminates the need to provide emergency power for normal building ventilation systems as required by Section 1203.

In looking at the hazardous material related systems that require a secondary power source, they all fall under the definition of emergency power system as included in NFPA 110. Therefore reference to standby power was removed from this section.

References for emergency power were added to Sections 53, 54, 55, 57, 61 and 63 since these sections include requirements for system that require emergency power per Section 5001.3.3.10.

High rise buildings: The scope of IFC Section 604 covers emergency and standby power system, and yet sections 604.2.14.1 through 604.2.14.3 either duplicated requirements in revised Section 604.1, (covered under a separate proposal), or covered electrical system components that are not part of the standby or emergency power system. These requirements were eliminated. If the desire is to include these systems in the IFC they should be placed in a more appropriate location.

Underground buildings: Sections 604.2.15.1 through 604.2.15.2.1 duplicate some, but not all of the IBC requirements for underground buildings, and were therefore eliminated. If the desire is to include these details in the IFC they should be added in their entirety.

Group I-3 occupancy door locks: The proposal updates references to emergency power requirements by including the appropriate IFC and IBC code sections that specify requirements for emergency power supply and operation of power-operated door locks.

Airport traffic control towers: There is no reason to call out emergency and standby power requirements for aircraft traffic control towers. These requirements are specified for the types of electrical systems that will be provided, such as exit signs, egress illumination, elevators, smoke control, etc. In addition there is an error in some of the criteria since emergency power is required for fire alarm and smoke detection equipment and lighting of the means of egress. If the desire is to include a list of all possible emergency and standby power loads that can be included in these towers that can be done.

Smoke alarms: The proposal updates references to emergency power requirements by including the appropriate IFC and IBC code sections that specify requirements for emergency power supply and operation of Smoke Alarms.

Emergency alarms systems: Emergency power for emergency alarm systems is not currently required in either the IBC or the IFC, but it should be, based on the proposed definition of emergency power system.

Emergency responder radio coverage systems: Reference to standby power for emergency responder radio coverage systems was inadvertently left out of IBC Section 2702 and IFC Section 604.

Flaring systems for mechanical refrigeration: The proposal updates references to emergency power requirements by including the appropriate IFC code sections that specify requirements for emergency power supply and operation of flaring systems for mechanical refrigeration.

Clothes dryer exhaust systems: The proposal updates IMC references to stand-by power requirements by including the appropriate IBC code sections that specify requirements for stand-by power supply and operation of clothes dryer exhaust systems.

Water supply power: The proposal updates IWUI references to stand-by power requirements for pumps, controllers and related electrical equipment so that stationary water supply facilities within the *wildland-urban interface* by including the appropriate IFC and IBC code sections that specify requirements for stand-by power supply and operation of specified water supply equipment.

Cost Impact: This code change will increase the cost of construction

Public Hearing Results

PART I – IFC Committee Action:

Approved as Modified

Modify the proposal as follows:

HIGH-RISE BUILDINGS

IBC [F] 403.4.8.1 Equipment room. If the standby or emergency power system includes a generator set inside a building, the system shall be located in a separate room enclosed with 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. System supervision with manual start and transfer features shall be provided at the *fire command center*.

Exception: In Group I-2 Condition 2, manual start and transfer features for the critical branch of the emergency power are not required to be provided at the fire command center.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee approved the code change based on the proponent's reason statement and agreed that the proposal accomplishes much needed revisions and clarifications to the emergency and standby power system requirements. The modification leaves the control of critical circuits in the hands of the hospital engineers.

Assembly Action:

None

Public Comments

Public Comment:

Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

[F] 414.5.3 Emergency or standby power. Where ~~required by the International Fire Code or this code~~ mechanical ventilation, treatment systems, temperature control, alarm, detection or other electrically operated systems ~~are required by the International Fire Code or this code, such systems~~ shall be provided with an emergency or standby power system in accordance with Section 2702.

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This public comment clarifies that mechanical ventilation, treatment systems, temperature control, alarm, detection or other electrically operated systems are only to be provided with an emergency or standby power system where required by the IFC or elsewhere in the IBC.

Final Hearing Results

F59-13 Part I

AMPC

Code Change No: F64-13

Original Proposal

Section(s): 605.11.1, 605.11.2

Proponent: Steve Thomas, Colorado Code Consulting, LLC representing self
(stthomas@coloradocode.net)

Revise as follows:

~~**605.11.1 Marking.** Marking is required on interior and exterior direct current (DC) conduit, enclosures, raceways, cable assemblies, junction boxes, combiner boxes and disconnects.~~

~~**605.11.1.1 Materials.** The materials used for marking shall be reflective, weather resistant and suitable for the environment. Marking as required in Sections 605.11.1.2 through 605.11.1.4 shall have all letters capitalized with a minimum height of 3/8 inch (9.5 mm) white on red background.~~

~~**605.11.1.2 Marking content.** The marking shall contain the words "WARNING: PHOTOVOLTAIC POWER SOURCE."~~

~~**605.11.1.3 Main service disconnect.** The marking shall be placed adjacent to the main service disconnect in a location clearly visible from the location where the disconnect is operated.~~

~~**605.11.1.4 Location of marking.** Marking shall be placed on interior and exterior DC conduit, raceways, enclosures and cable assemblies every 10 feet (3048 mm), within 1 foot (305 mm) of turns or bends and within 1 foot (305 mm) above and below penetrations of roof/ceiling assemblies, walls or barriers.~~

~~**605.11.2 Locations of DC conductors.** Conduit, wiring systems, and raceways for photovoltaic circuits shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities. Conduit runs between sub arrays and to DC combiner boxes shall be installed in a manner that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes shall be located such that conduit runs are minimized in the pathways between arrays. DC wiring shall be installed in metallic conduit or raceways when located within enclosed spaces in a building. Conduit shall run along the bottom of load bearing members.~~

Reason: The language in these sections relate to the installation of the electrical system for photovoltaic systems. They do not belong in the fire code. The language in this section is similar to that of the NEC. They are already included in the National Electrical Code (NEC), NFPA 70 Article 690.31. The NEC is already referenced in Chapter 27 of the IBC. It states "Electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of NFPA 70". Section 102.4 of the IFC states that the design and construction of buildings shall comply with the IBC. Therefore, the requirements are duplicative and are not needed in the IFC. By having similar requirements in two different codes, there is a great potential for conflicts.

It is my understanding that the original proponent of this section intended to remove the requirements after the NEC adopted requirements for PV electrical installations. They have made those additions and therefore they should be removed from the IFC.

In addition, the ICC decided many years ago to not include electrical installation requirements in any of its codes. We should maintain this position in the fire code as well.

Cost Impact: This change will not affect the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the proposal removes text provisions covered by the IBC referenced standard, NFPA 70, thus removing potential conflicts between the IFC and that document.

Assembly Action:

None

Final Hearing Results

F64-12

AS

Code Change No: F59-13 Part II

Original Proposal

Section(s): 604 (IBC [F] 2702) among others; 907.5.2.2.5 (IBC [F] 907.5.2.2.5); IMC [F] 513.11, [F] 513.11.1 (New); IWUIC 404.10.3; IEBC 805.4.5

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IFC COMMITTEE AND PART II WILL BE HEARD BY THE IEBC COMMITTEE AS TWO SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THOSE COMMITTEES.

PART II - INTERNATIONAL EXISTING BUILDING CODE

GROUP I-3 OCCUPANCY DOOR LOCKS

Revise the IEBC as follows:

IEBC 805.4.5 Emergency power source in Group I-3. Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 2702 of the International Building Code.

Exceptions:

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1.
2. Emergency power is not required where remote mechanical operating releases are provided.

~~Work areas in buildings of Group I-3 occupancy having remote power unlocking capability for more than 10 locks shall be provided with an emergency power source for such locks. Power shall be arranged to operate automatically upon failure of normal power within 10 seconds and for a duration of not less than 1 hour.~~

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal is part of a comprehensive rewrite of the I-Codes emergency and standby power requirements. Some edits are made to provide consistency in how standby power is referenced in the codes.

Part II - INTERNATIONAL EXISTING BUILDING CODE

Group I-3 occupancy door locks in the IEBC: The IEBC format was revised to more closely correlate with the IBC and IFC.

Cost Impact: This code change will increase the cost of construction

Public Hearing Results

PART II – IEBC

This code change was heard by the IEBC code development committee.

Committee Action:

Disapproved

Committee Reason: This proposal was disapproved primarily related to concerns with references to sections not found in the IEBC. Specifically, exception 1 references Section 408.4.1 which is not found in the IEBC.

Assembly Action:

None

Public Comments

Public Comment:

Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

IEBC 805.4.5 Emergency power source in Group I-3. Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 2702 of the International Building Code.

Exceptions:

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1 of the International Building code.
2. Emergency power is not required where remote mechanical operating releases are provided.

Commenter's Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

The original proposal for F59, Part II was correctly disapproved because reference to the IBC was not included in Exception 1. This has been corrected in this public comment, which accomplishes the following:

1. Correlates the requirements for how emergency and standby power throughout the family of I-Codes so they are treated in a consistent manner.
2. Correlates the requirements for providing emergency power for power operated sliding doors or power operated locks for swinging doors with the requirements in IBC section 408.4.2, which was revised as part of proposal F59-13.

Final Hearing Results

F59-13 Part II

AMPC

Code Change No: F62-13

Original Proposal

Section(s): 605.11, 605.11.3, 605.11.3.2, 605.11.3.3

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

605.11 Solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections 605.11.1 through 605.11.4, the *International Building Code* and NFPA 70.

Exception: ~~Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures shall not be subject to the requirements of this section.~~

605.11.3 Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections 605.11.3.1 through 605.11.3.3.

Exceptions:

- ~~1. Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.~~
- ~~2. Panels/modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.~~

Exception: Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures.

605.11.3.2 Residential Solar photovoltaic systems for one- and two-family dwellings. ~~Access to residential Solar photovoltaic systems for one- and two-family dwellings shall be provided in accordance with Sections 605.11.3.2.1 through 605.11.3.2.45.~~

605.11.3.2.1 Size of solar photovoltaic array. Each photovoltaic array shall be limited to 150 feet (45 720 mm) by 150 feet (45 720 mm). Multiple arrays shall be separated by a 3-foot-wide (914 mm) clear access pathway.

605.11.3.2.12 Residential buildings with hip Hip roof layouts. ~~residential buildings one- and two-family dwellings~~ Panels/ and modules installed on residential buildings one- and two-family dwellings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels/ and modules are located. The access pathway shall be located at a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.3.2.23 Residential buildings with a sSingle ridge roofs. ~~residential buildings one- and two-family dwellings~~ Panels/ and modules installed on residential buildings one- and two-family dwellings with a single ridge shall be located in a manner that

provides two, 3-foot-wide (914 mm) access pathways from the eave to the ridge on each roof slope where panels/ and modules are located.

Exception: This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.3.2.34 Residential buildings with rRoofs with hips and valleys. Panels/ and modules installed on residential buildings ~~one- and two-family dwellings~~ with roof hips and valleys shall be located no closer than 18 inches (457 mm) to a hip or a valley where panels/modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.3.2.45 Residential building Allowance for smoke ventilation operations. Panels/ and modules installed on residential buildings ~~one- and two-family dwellings~~ shall be located no ~~higher~~ less than 3 feet (914 mm) ~~below~~ from the ridge in order to allow for fire department smoke ventilation operations.

Exception: Panels and modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.

605.11.3.3 Other than residential buildings one- and two-family dwellings. Access to systems for occupancies other than one- and two-family dwellings shall be provided in accordance with Sections 605.11.3.3.1 through 605.11.3.3.3.

Exception: Where it is determined by the fire code official that the roof configuration is similar to that of a one- or two-family dwelling, the residential access and ventilation requirements in Sections 605.11.3.2.1 through 605.11.3.2.4 shall be permitted to be used.

605.11.3.3.1 Access. There shall be a minimum 6-foot-wide (1829 mm) clear perimeter around the edges of the roof.

Exception: Where either axis of the building is 250 feet (76 200 mm) or less, ~~there~~ the clear perimeter around the edges of the roof shall be permitted to be reduced to a minimum 4-foot-wide (1290 mm) clear perimeter around the edges of the roof.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal is primarily an editorial clarification to Section 605.11.3. There is only one section which contains new text, it is Section 605.11.3.2.1. The sections and their revisions are noted below:

- | | |
|-----------------|---|
| 605.11 Exc: | This exception eliminates all requirements for solar PV systems located on Group U structures. This exception inadvertently eliminates the requirements for listing of components, marking and location of disconnects. This exception is relocated to Section 605.11.3 so that it only eliminates the requirements for access and pathways which will then retain the listing and marking requirements. |
| 605.11.3 Exc 1: | This exception is actually a requirement; it is not an exception. Therefore, the exception is deleted and the text has been relocated to Section 605.11.3.2.1. |
| 605.11.3 Exc 2: | This is an exception based on the need for the ability to vertically ventilate smoke through the roof. Section 605.11.3.2.5 (renumbered from 605.11.3.2.4) deals with smoke ventilation. The exception is intended to apply to a specific set of requirements regarding smoke ventilation. If the exception is left in this section, it exempts these systems from all of the requirements in this entire section. Therefore this exception has been relocated to Section 605.11.3.2.5. |

605.11.3.2: The title of this section is revised to correlate with the text of the section. The text only applies to one- and two-family dwellings so the term "residential" is removed from the title.

Also, the section is revised by deleting the reference to 'access' since the subsections deal with more than access, and additional access requirements are found in 605.11.3.1.

605.11.3.2.1: This section originates from 605.11.3 Exception 1. It is relocated to the section which applies to dwellings and is inserted as a requirement.

Additionally, the 2nd sentence is added as a new requirement. The current requirements limit the size of each PV array but provide no guidance as to the required separation between multiple PV arrays. This requirement fills that void by requiring a 3 foot separation between PV arrays. The 3 foot distance is the same spacing requirement found around PV arrays to the edge of roof or to the ridge of the roof, and provides for access around the arrays.

605.11.3.2.2: Renumbered from 605.11.3.2.1. The text is revised to correlate with the previous sections regarding one- and two-family dwellings.

605.11.3.2.3: Renumbered from 605.11.3.2.2. The text is revised to correlate with the previous sections regarding one- and two-family dwellings.

605.11.3.2.4: Renumbered from 605.11.3.2.3. The text is revised to correlate with the previous sections regarding one- and two-family dwellings.

605.11.3.2.5: Renumbered from 605.11.3.2.4. The text is revised to correlate with the previous sections regarding one- and two-family dwellings.

Additionally, the exception is added which was previously located in Section 605.11.3. This exception is based on the need for the ability to vertically ventilate smoke through the roof, and Section 605.11.3.2.5 deals with smoke ventilation.

605.11.3.3: The text is revised to correlate with the previous revisions regarding one- and two-family dwellings.

605.11.3.3.1: This exception is reworded into an actual exception which states that the required clearance is allowed to be reduced to 4', rather than requiring a clearance of 4'.

Cost Impact: This code change will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the proposal is a needed editorial clean-up and minor technical improvement to the PV section that represents a collaborative effort of the fire service and the major subject stakeholders and results in a more logical presentation of the requirements.

Assembly Action:

None

Public Comments

Public Comment:

Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

605.11 Solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections 605.11.1 through ~~605.11.3~~ ~~605.11.4~~, the *International Building Code* and NFPA 70.

605.11.1 ~~605.11.3~~ Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections ~~605.11.1.1 through 605.11.1.3.3~~ ~~605.11.3.1 through 605.11.3.3.~~

Exceptions:

1. Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures.
2. Roof access, pathways, and spacing requirements need not be provided where the fire chief has determined rooftop operations will not be employed.

605.11.1.1 ~~605.11.3.1~~ Roof access points. Roof access points shall be located in areas that do not require the placement of ground ladders over openings such as windows or doors, and located at strong points of building construction in locations where the access point does not conflict with overhead obstructions such as tree limbs, wires, or signs.

605.11.1.2 ~~605.11.3.2~~ Solar photovoltaic systems for Group R-3 buildings. Solar photovoltaic systems for Group R-3 buildings shall comply with Sections 605.11.3.2.1 through 605.11.3.2.4.

Exception: These requirements shall not apply to structures designed and constructed in accordance with the International Residential Code.

605.11.1.2.1 ~~605.11.3.2.1~~ Size of solar photovoltaic array. Each photovoltaic array shall be limited to 150 feet (45 720 mm) by 150 feet (45 720 mm). Multiple arrays shall be separated by a 3-foot-wide (914 mm) clear access pathway.

605.11.1.2.2 ~~605.11.3.2.2~~ Hip roof layouts. Panels and modules installed on ~~Group R-3 buildings one- and two-family dwellings~~ with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels and modules are located. The access pathway shall be located at a location on the building capable of supporting the live load of fire fighters accessing the roof.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.1.2.3 ~~605.11.3.2.3~~ Single ridge roofs. Panels and modules installed on ~~Group R-3 buildings one- and two-family dwellings~~ with a single ridge shall be located in a manner that provides two, 3-foot-wide (914 mm) access pathways from the eave to the ridge on each roof slope where panels and modules are located.

Exception: This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.1.2.4 ~~605.11.3.2.4~~ Roofs with hips and valleys. Panels and modules installed on ~~Group R-3 buildings one- and two-family dwellings~~ with roof hips and valleys shall be located no closer than 18 inches (457 mm) to a hip or a valley where panels and modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.1.2.5 ~~605.11.3.2.5~~ Allowance for smoke ventilation operation. Panels and modules installed ~~Group R-3 buildings one- and two-family dwellings~~ shall be located no less than 3 feet (914 mm) from the ridge in order to allow for fire department smoke ventilation operations.

Exception: Panels and modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.

605.11.1.3 ~~605.11.3.3~~ Other than one- and two-family dwellings Group R-3 buildings. Access to systems for ~~buildings occupancies~~ other than those containing Group R-3 occupancies ~~buildings~~ shall be provided in accordance with Sections 605.11.2.3.1 ~~605.11.3.3.1~~ through 605.11.2.3.3 ~~605.11.3.3.3~~.

Exception: Where it is determined by the *fire code official* that the roof configuration is similar to that of a Group R-3 occupancy, the residential access and ventilation requirements in Sections 605.11.2.2.1 ~~605.11.3.2.1~~ through 605.11.2.2.5 ~~605.11.3.2.5~~ shall be permitted to be used.

605.11.1.3.1 ~~605.11.3.3.1~~ Access. There shall be a minimum 6-foot-wide (1829 mm) clear perimeter around the edges of the roof.

Exception: Where either axis of the building is 250 feet (76 200 mm) or less, the clear perimeter around the edges of the roof shall be a minimum 4-foot-wide (1290 mm).

605.11.1.3.2 ~~605.11.3.3.2~~ Pathways. The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:

1. The pathway shall be over areas capable of supporting fire fighters accessing the roof.
2. The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting the live load of fire fighters accessing the roof.
3. Shall be a straight line not less than 4 feet (1290 mm) clear to skylights or ventilation hatches.
4. Shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes.
5. Shall provide not less than 4 feet (1290 mm) clear around roof access hatch with at least one not less than 4 feet (1290 mm) clear pathway to parapet or roof edge.

605.11.1.3.3 ~~605.11.3.3.3~~ Smoke ventilation. The solar installation shall be designed to meet the following requirements:

1. Arrays shall be no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in distance in either axis in order to create opportunities for fire department smoke ventilation operations.
2. Smoke ventilation options between array sections shall be one of the following:
 - 2.1. A pathway 8 feet (2438 mm) or greater in width.
 - 2.2. A 4-foot (1290 mm) or greater in width pathway and bordering roof skylights or gravity operated drop-out smoke and heat vents.

- 2.3. A 4-foot (1290 mm) or greater in width pathway and bordering all sides of non-gravity-operated drop out smoke and heat vents.
- 2.4. A 4-foot (1290 mm) or greater in width pathway and bordering 4-foot by 8-foot (1290 mm by 2438 mm) "venting cutouts" every 20 feet (6096 mm) on alternating sides of the pathway.

605.11.2 ~~605.11.4~~ Ground-mounted photovoltaic arrays. Ground-mounted photovoltaic arrays shall comply with Sections 605.11 through ~~605.11.2~~ and this section. Setback requirements shall not apply to ground-mounted, free-standing photovoltaic arrays. A clear, brush-free area of 10 feet (3048 mm) shall be required for ground mounted photovoltaic arrays.

Commenter's Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Proposals F62-13, F64-13, F69-13, F72-13, F73-13, F74-13 and RM96-13 all made revisions to Section 605.11 requirements for solar photovoltaic power systems. Most of the revisions accepted by the committee worked well together, with a few exceptions that need coordination/clarification.

This public comment to F62-13 shows what Section 605.11 will look like if all of the approved proposals are adopted. The changes included in this proposal accomplish the following:

1. Editorially show the new numbering system that results from F94-13 deleting Sections 905.11.1 through 905.11.2. (Note - ICC staff ultimately decide the numbering system to be used)
2. In new Section 605.11.1, proposal F62-13 removed what is shown as exception 2, but this section was modified by F69-13. This exception was retained.
3. In new Section 605.11.1.2 the exception was added by proposal RM96-13.
4. In new Section 605.11.1.3 both F62-13 and F72-13 (as modified) added wording which resulted in the title of the section reading "Other than one- and two-family dwellings Group R-3 buildings". This title was revised to only include "Group R-3 buildings". In addition the text in this section was editorially revised to clarify that it applies to buildings, other than those containing Group R-3 occupancies. In addition references to "one- and two-family dwellings" was changed to "Group R-3 buildings" in Sections 605.11.1.2.2 , 605.11.1.2.3, 605.11.1.2.4 and 605.11.1.2.5 for consistency.
5. New Section 605.11.2 deleted referenced to previous Section 605.11.2 since this section was deleted by proposal F64-13.

Final Hearing Results

F62-13

AMPC

Code Change No: F69-13

Original Proposal

Section(s): 605.11.3

Proponent: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA) (JSmirnow@seia.org)

Revise as follows:

605.11.3 Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections 605.11.3.1 through 605.11.3.3.3.

Exceptions:

1. Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.
2. ~~Panels/modules shall be permitted to be located up to the roof ridge~~ Roof access, pathways, and spacing requirements need not be provided where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association's (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

This proposal provides better language to address roof access for firefighters. The language is consistent with the charging statement. Different fire agencies have different ways to ventilate roof systems. If a fire department has a policy of not accessing roofs, the requirements for roof access are not necessary. This only applies in those cases. Where departments have a policy of accessing roofs, they will still be able to require the access pathways and spacing requirements.

Cost Impact: No cost impact

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

605.11.3 Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections 605.11.3.1 through 605.11.3.3.3.

Exceptions:

1. Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.
2. ~~Roof access, pathways, and spacing requirements need not be provided where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques~~ rooftop operations will not be employed.

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides the fire chief with greater operational flexibility. The proposal also represents a successful collaborative effort between the fire service and the solar energy stakeholders. The modification provides correlation with NFPA 14.

Assembly Action:

None

Final Hearing Results

F69-13

AM

Code Change No: F72-13

Original Proposal

Section(s): 605.11.3.2, 605.11.3.3

Proponent: Tim Pate, City and County of Broomfield, CO, representing Colorado Chapter Code Change Committee

Revise as follows:

605.11.3.2 Residential systems for one- and two-family dwellings. Access to residential systems for ~~one- and two-family dwellings~~ shall be provided in accordance with Sections 605.11.3.2.1 through 605.11.3.2.4.

605.11.3.3 Other than residential buildings. Access to systems for occupancies other than ~~one- and two-family dwellings~~ residential shall be provided in accordance with Sections 605.11.3.3.1 through 605.11.3.3.3.

Exception: Where it is determined by the *fire code official* that the roof configuration is similar to that of a residential occupancy ~~one- or two-family dwelling~~, the residential access and ventilation requirements in Sections 605.11.3.2.1 through 605.11.3.2.4 shall be permitted to be used.

Reason: This code change proposal will add specific language that will clarify that these new provisions for access to PV systems only apply to structures built under the IBC and not under the IRC. The new language will differentiate between residential and non residential occupancies. Residential occupancies could include an R-3 single family if being built under the IBC but would typically include multifamily residential. The proponent of this code change did not intend to make these provisions apply to IRC structures and even the book published by ICC for significant changes to the IFC says this is not to apply to IRC structures. I have already seen some confusion by Fire Departments and Fire Districts with the language "one and two family dwellings" and if it should apply to IRC structures. This added language will help clear up this confusion.

Cost Impact: Will not increase cost of construction

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

605.11.3.2 Residential systems for Group R-3 buildings. Access to residential systems for Group R-3 buildings shall be provided in accordance with Sections 605.11.3.2.1 through 605.11.3.2.4.

605.11.3.3 Other than residential Group R-3 buildings. Access to systems for occupancies other than ~~residential~~ Group R-3 buildings shall be provided in accordance with Sections 605.11.3.3.1 through 605.11.3.3.3.

Exception: Where it is determined by the *fire code official* that the roof configuration is similar to that of a Group R-3 occupancy, the residential access and ventilation requirements in Sections 605.11.3.2.1 through 605.11.3.2.4 shall be permitted to be used.

Committee Reason: The committee agreed with the proponent's reason statement that the proposal provides a needed clarification as to the applicability of the requirements to buildings constructed under the IBC. The modification further clarifies that applicability by replacing the removed "IRC language" (i.e., 'one-and two-family dwellings') with "IBC language" (i.e., 'Group R-3').

Assembly Action:

None

Final Hearing Results

F72-13

AM

Code Change No: F73-13

Original Proposal

Section(s): 605.11.3.2.1, 605.11.3.3.2

Proponent: Steve Orłowski, representing National Association of Home Builders (NAHB)
(sorłowski@nahb.org)

Revise as follows:

605.11.3.2.1 Residential buildings with hip roof layouts. Panels/modules installed on residential buildings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels/modules are located. The access pathway shall be located at a ~~structurally strong~~ location on the building capable of supporting ~~the live load of~~ fire fighters accessing the roof.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.3.3.2 Pathways. The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:

1. The pathway shall be over areas capable of supporting ~~the live load of~~ fire fighters accessing the roof.
2. The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting ~~the live load of~~ fire fighters accessing the roof.
3. Shall be a straight line not less than 4 feet (1290 mm) clear to skylights or ventilation hatches.
4. Shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes.
5. Shall provide not less than 4 feet (1290 mm) clear around roof access hatch with at least one not less than 4 feet (1290 mm) clear pathway to parapet or roof edge.

Reason: Changes proposed in this code proposal are two minor editorial fixes to remove language that is currently in the IFC. The first change is to remove the ambiguous term structurally strong, which is not only redundant it does nothing to provide the user with any new information. Roofs by default must be structurally sound and meet the required engineering design loads. None of the residential or commercial structural design manuals, nor the IRC or the IBC give a calculation value for the live load of a fire fighter, which is why we are proposing to remove this term from the IFC.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that deleting the subjective phrases "...structurally strong..." and "...live load of fire fighters..." will make the section easier to enforce because there are no live loads specified in the IBC or IRC for fire fighters.

Assembly Action:

None

Final Hearing Results

F73-12

AS

Code Change No: F74-13

Original Proposal

Section(s): 605.11.3.3.2, 605.11.3.3.3

Proponent: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA) (JSmirnow@seia.org)

Revise as follows:

605.11.3.3.2 Pathways. The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:

1. The pathway shall be over areas capable of supporting the live load of firefighters accessing the roof.
2. The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting the live load of fire fighters accessing the roof.
3. Shall be a straight line not less than 4 feet (1290 mm) clear to ~~skylights~~ roof standpipes or ventilation hatches.
- ~~4. Shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes.~~
- 5 4. Shall provide not less than 4 feet (1290 mm) clear around roof access hatch with at least one not less than 4 feet (1290 mm) clear pathway to parapet or roof edge.

605.11.3.3.3 Smoke ventilation. The solar installation shall be designed to meet the following requirements:

1. Arrays shall be no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in distance in either axis in order to create opportunities for fire department smoke ventilation operations.
2. Smoke ventilation options between array sections shall be one of the following:
 - 2.1. A pathway 8 feet (2438 mm) or greater in width.
 - 2.2. A 4-foot (1290 mm) or greater in width pathway and bordering roof skylights or smoke and heat vents on at least one side.
 - 2.3. A 4-foot (1290 mm) or greater in width pathway and bordering 4-foot by 8-foot (1290 mm by 2438 mm) "venting cutouts" every 20 feet (6096 mm) on alternating sides of the pathway.

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association's (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

The purpose of pathways in 605.11.3.3.2 is for access for firefighters. Access is necessary for roof standpipes and ventilation hatches. Access to skylights should not have the same level of priority as equipment specifically installed for firefighting operations. Some roofs have skylights every 20 feet whereas ventilation hatches are normally required far less frequently. Buildings with numerous skylights have them primarily for interior lighting, not ventilation opportunities. Section 605.11.3.3.3 allows for the use of skylights for smoke ventilation at the areas between array sections. Removing the reference to skylights in 605.11.3.3.2 clarifies that pathways are not required to every skylight.

Arrays on buildings with few skylights will normally plan for array sections to coincide with the skylights since the skylight areas are already lost mounting space.

Cost Impact: No cost impact

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

605.11.3.3.3 Smoke ventilation. The solar installation shall be designed to meet the following requirements:

1. Arrays shall be no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in distance in either axis in order to create opportunities for fire department smoke ventilation operations.
2. Smoke ventilation options between array sections shall be one of the following:
 - 2.1. A pathway 8 feet (2438 mm) or greater in width.
 - 2.2. A 4-foot (1290 mm) or greater in width pathway and bordering roof skylights or gravity operated drop-out smoke and heat vents on at least one side.
 - 2.3. A 4-foot (1290 mm) or greater in width pathway and bordering all sides of non-gravity-operated drop out smoke and heat vents.
 - ~~2.4.~~ ~~2.3.~~ A 4-foot (1290 mm) or greater in width pathway and bordering 4-foot by 8-foot (1290 mm by 2438 mm) “venting cutouts” every 20 feet (6096 mm) on alternating sides of the pathway.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee agreed with the proponent’s reason statement and the modification which better addresses ready access to gravity operated drop-out smoke and heat vents that can be utilized for ventilation and greater clearances around smoke and heat vents that are not of the gravity operated drop out-type.

Assembly Action:

None

Final Hearing Results

F74-13

AM

Code Change No: F75-13

Original Proposal

Section(s): 605.12 (New), 202 (New)

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

605.12 Abandoned wiring in plenums. Accessible portions of abandoned cables in air handling plenums in Group I occupancies shall be removed. Cables that are unused and have not been tagged for future use shall be considered abandoned.

SECTION 202 GENERAL DEFINITIONS

[M] PLENUM. An enclosed portion of the building structure, other than an occupiable space being conditioned, that is designed to allow air movement, and thereby serve as part of an air distribution system.

Reason: This new section is intended to introduce a concept that has been in the National Electrical Code (as well as in NFPA 90A) for a long time: plenums are intended for a specific use (see definition below), namely to be a part of the air distribution system so as to allow air movement. Plenums are also used (legitimately) for stringing communications and data cables as well as pipes and sprinkler pipes and other similar products. However, in actual fact, it is a common practice not to make the effort to remove products when they become obsolete. Examples include when an updated data system is being installed in the facility (and that typically occurs every 18-24 months). Normally, as the building is being rewired the old wires are cut off the grid but they are left in place and a new wiring system is added on top of them.

The tiles that often support plenums are not intended to support any significant weight and they can, therefore easily be overwhelmed by the added weight of storage or abandoned materials (such as abandoned cables). Recently, Bob Davidson and Sean DeCrane (Plenum Space Fuel Load, NFPA Annual Meeting 2009, M33) did an analysis that showed how the safety of firefighters is compromised by the weight of these abandoned cables. They point out that: "Plenum space fuel loads and wiring issues are a serious concern for fire fighters during interior firefighting operations." Their key recommendation was: "Take out the abandoned wiring!"

Although the primary reason to recommend the removal of abandoned materials in plenums is weight, fire safety should also be taken into account.

The introduction of a requirement such as the one being proposed here has long been believed not to be enforceable. This is probably true if it were to apply to all occupancies, primarily because fire code inspectors would rarely spend their time looking into plenums in existing buildings. However, the inspection of I occupancies occurs with enough regularity that there should be no significant difficulty in having inspectors identify the existence of abandoned products, especially abandoned cables, classify them as storage and demand their removal.

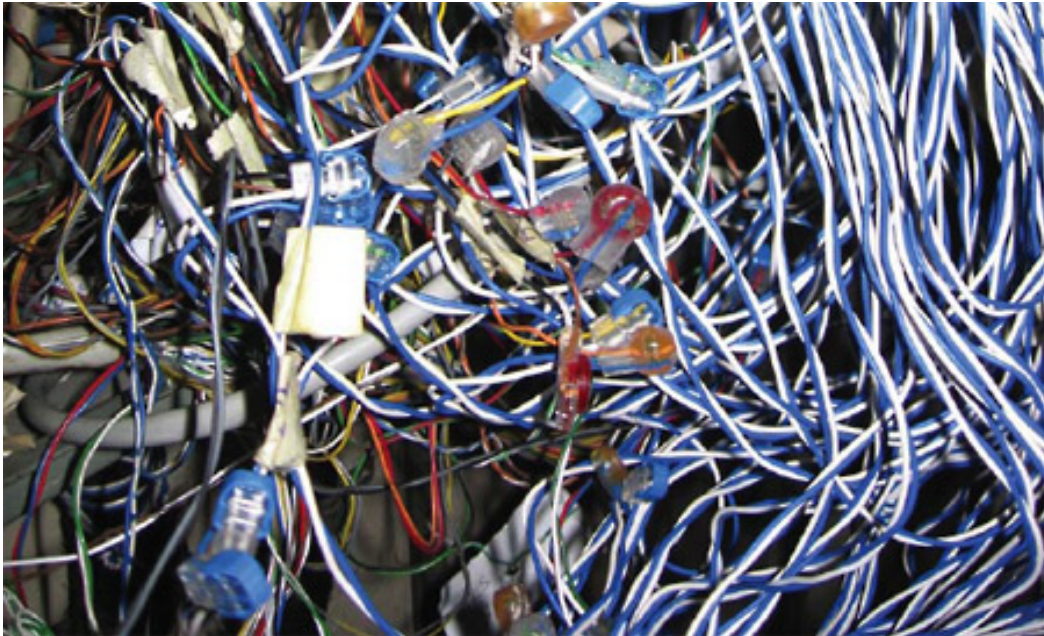
The proposal recommends that only the "accessible portions" of abandoned cables be removed, because there is no intent to cause potential damage to the building or facility by attempting to remove cables or circuits that are strung through walls, floors or other building elements.

A similar, but broader, proposal was made in 2009 and disapproved (F38-09/10) with the following language: "The committee felt that the subject matter is adequately addressed in NFPA 70 where it belongs. The committee was also concerned that the proposal would put the fire code official in the role of being an electrical inspector and that these issues are manageable under the building permit process."

Unfortunately the requirement to remove abandoned cables is not being enforced. This proposal has a much more limited scope than F38-09/10 and would not require the fire code official to act as an electrical inspector because he/she would simply have to ascertain that the cables are not connected to any active circuits and not tagged before requiring their removal.

This issue is particularly suitable for Chapter 6 (and section 605) of the IFC since it addresses electrical equipment, wiring and hazards, which are not necessarily electrical hazards but address other safety issues, such as illumination, temporary wiring and unapproved conditions, compliance with all of which is being inspected by the fire code official.

Photographs of typical wiring in plenums, as found by Davidson and DeCrane, follow:



Cost Impact: Minimal

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

605.12 Abandoned wiring in plenums. Accessible portions of abandoned cables in air handling plenums in ~~Group I occupancies~~ shall be removed. Cables that are unused and have not been tagged for future use shall be considered abandoned.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee approved the code change based on the proponent's reason statement. The modification recognizes that the problem is not limited to only Group I and will improve fire fighter safety in all occupancies.

Assembly Action:

None

Final Hearing Results

F75-13

AM

Code Change No: F77-13

Original Proposal

Section(s): 606.9.2 (IMC [F] 1106.5.2)

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration
(jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

606.9.2 (IMC [F] 1106.5.2) Ventilation system. A clearly identified switch of the break-glass type or with an approved tamper resistant cover shall provide on-only control of the *machinery room* ventilation fans.

Reason: Correlation with Section 606.9.1 (IMC [F]1106.5.1), which also permits a tamper resistant covered switch in lieu of a break glass type.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F77-12

AS

Code Change No: F78-13

Original Proposal

Section(s): 606.10

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration
(jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

606.10 Emergency pressure control system. Permanently installed Refrigeration systems containing more than 6.6 pounds (3 kg) of flammable, toxic or highly toxic refrigerant or ammonia shall be provided with an emergency pressure control system in accordance with Sections 606.10.1 and 606.10.2.

Reason: When the provisions for emergency pressure control systems were added to the code, they were provided as an alternative to manual emergency control boxes, which were previously required by some legacy codes. The emergency control box provisions didn't apply to portable refrigeration equipment, such as agricultural cooling trailers used in fields and at processing facilities, and it was never intended that emergency pressure control systems be applied to portable equipment either. Nevertheless, the current code text doesn't provide an exclusion for portable equipment, and lacking that exclusion, the intent of the code is currently unclear. The proposed revision fixes the oversight.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F78-12

AS

Code Change No: F79-13

Original Proposal

Section(s): 606.12

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration

Revise as follows:

606.12 Discharge and termination of pressure relief devices and purge systems. Pressure relief devices, fusible plugs and purge systems ~~discharging to the atmosphere from~~ for refrigeration systems containing ~~more than 6.6 pounds (3 kg)~~ of flammable, toxic or highly toxic refrigerants or ammonia shall ~~be provided with an approved discharge system as required by~~ comply with Sections ~~606.12.1~~ 606.12.2, ~~606.12.2~~ 606.12.3 and ~~606.12.3~~ 606.12.4.

606.12.1 Fusible plugs and rupture members. Discharge piping and devices connected to the discharge side of a fusible plug or rupture member shall have provisions to prevent plugging the pipe in the event of the fusible plug or rupture member functions.

~~606.12.1~~ **606.12.2 Flammable refrigerants.** Systems containing more than 6.6 pounds (3 kg) of flammable refrigerants having a density equal to or greater than the density of air shall discharge vapor to the atmosphere only through an *approved* treatment system in accordance with Section ~~606.12.5~~ 606.12.6. Systems containing more than 6.6 pounds (3 kg) of flammable refrigerants having a density less than the density of air shall be permitted to discharge vapor to the atmosphere provided that the point of discharge is located outside of the structure at not less than 15 feet (4572 mm) above the adjoining grade level and not less than 20 feet (6096 mm) from any window, ventilation opening or *exit*.

~~606.12.2~~ **606.12.3 Toxic and highly toxic refrigerants.** Systems containing more than 6.6 pounds (3 kg) of toxic or highly toxic refrigerants shall discharge vapor to the atmosphere only through an *approved* treatment system in accordance with Section ~~606.12.4~~ 606.12.5 or a flaring system in accordance with Section ~~606.12.5~~ 606.12.6.

~~606.12.3~~ **606.12.4 Ammonia refrigerant.** Systems containing more than 6.6 pounds (3 kg) of ammonia refrigerant shall discharge vapor to the atmosphere through an *approved* treatment system in accordance with Section ~~606.12.4~~ 606.12.5, a flaring system in accordance with Section ~~606.12.5~~ 606.12.6, or through an *approved* ammonia diffusion system in accordance with Section ~~606.12.6~~ 606.12.7, or by other *approved* means.

Exceptions:

1. Ammonia/water absorption systems containing less than 22 pounds (10 kg) of ammonia and for which the ammonia circuit is located entirely outdoors.
2. When the *fire code official* determines, on review of an engineering analysis prepared in accordance with Section 104.7.2, that a fire, health or environmental hazard would not result from discharging ammonia directly to the atmosphere.

(Renumber subsequent sections)

Reason: The revisions accomplish an editorial cleanup of Section 606.12 and subordinate sections. No technical changes are intended. Section 606.12 has been revised to simply be a charging paragraph for the entire section. The requirements for individual refrigerant classes are now fully contained in the subordinate sections for each class, including the 6.6 pound threshold. The title of 606.12 has been expanded to make it clear that the content of existing section is not limited to termination of vents. This

is because the existing section also covers purging, and the second sentence of 606.12 is not related to vent termination. That sentence has been separated into its own subsection, which is not restricted by refrigerant classification, because it applies to fusible plugs and rupture members for ALL refrigeration systems (this is consistent with ASHRAE 15, Section 9.7.8). The addition of "discharging to atmosphere" in Section 606.12 is consistent with the existing text in the sections governing flammable and toxic/highly toxic refrigerants and ammonia. Each of these sections contains a similar phrase, and this has been duplicated into Section 606.12 to make it clear that restrictions on vent termination do not and never have applied to relief arrangements that are internal to a system (i.e. not routed to atmosphere).

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides a needed editorial clean-up of the section without any technical changes.

Assembly Action:

None

Final Hearing Results

F79-12

AS

Code Change No: F80-13

Original Proposal

Section(s): 606.12.1 (New), Chapter 80

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration
(jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

606.12.1 Standards. Refrigeration systems and the buildings in which such systems are installed shall be in accordance with ASHRAE 15.

606.12.1.1 Ammonia Refrigeration. Refrigeration systems using ammonia refrigerant and the buildings in which such systems are installed shall comply with the following standards:

1. IIAR-2 for system design and installation
2. IIAR-6 for maintenance and inspection
3. IIAR-7 for operating procedures
4. IIAR-8 for decommissioning.

Add standards to Chapter 80 as follows:

IIAR

International Institute of Ammonia Refrigeration
1001 N. Fairfax Street, Suite 503
Alexandria, VA 22314

IIAR-2-2014 *Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems*

IIAR-6-2014 *Maintenance and Inspection of Closed-Circuit Ammonia Mechanical Refrigerating Systems*

IIAR-7-2013 *Developing Operating Procedures for Closed-Circuit Ammonia Mechanical Refrigerating*

IIAR-8-2014 *Decommissioning of Closed- Circuit Ammonia Mechanical Refrigerating Systems*

Reason: The International Institute of Ammonia Refrigeration is completing a suite of standards to prescribe regulations for the safe design, installation, operation, maintenance, inspection and decommissioning of ammonia refrigeration systems. All of these documents will be ANSI standards. As the leading organization representing the interests of the ammonia refrigeration industry, IIAR believes that it is essential for facilities with ammonia refrigeration systems to follow the requirements in these standards, which are being written as enforceable documents, as a basis of providing for the safety of the these facilities as well as surrounding communities.

With the exception of IIAR-2, the remaining standards are at various stages of completion with respect to the ANSI process, and it is anticipated that all will be completed prior to conclusion of the 2013 ICC code cycle.

Note that IIAR-2 is already adopted by the IMC, and it is being proposed for adoption by the IFC as well because the standard includes requirements governing refrigerant leak detection alarms and other topics scoped to the IFC.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standards proposed for inclusion in the code, IIAR-6, -7 and -8, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013. IIAR-2-99 with 2005 addendum is currently referenced in the IMC. An update in the year edition of that standard will be accomplished by an administrative standards update code change to be heard by the ADM Code Development Committee.

Public Hearing Results

For staff analysis of the content of IAR-2-2014 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Modified

Modify the proposal as follows:

606.12.1 Standards. Refrigeration systems and the buildings in which such systems are installed shall be in accordance with ASHRAE 15.

606.12.1.1 Ammonia Refrigeration. Refrigeration systems using ammonia refrigerant and the buildings in which such systems are installed shall comply with the following standards: 1. IAR-2 for system design and installation,

- ~~2. IAR-6 for maintenance and inspection~~
- ~~3. IAR-7 for operating procedures~~
- ~~4. IAR-8 for decommissioning.~~

Add standards to Chapter 80 as follows:

IAR

International Institute of Ammonia Refrigeration
1001 N. Fairfax Street, Suite 503
Alexandria, VA 22314

IAR-2-2014	<i>Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems</i>
IAR-6-2014	<i>Maintenance and Inspection of Closed-Circuit Ammonia Mechanical Refrigerating Systems</i>
IAR-7-2013	<i>Developing Operating Procedures for Closed-Circuit Ammonia Mechanical Refrigerating</i>
IAR-8-2014	<i>Decommissioning of Closed-Circuit Ammonia Mechanical Refrigerating Systems</i>

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides an appropriate referenced standard for refrigeration system design and installation. The modification deletes standards that are not yet approved and ready for publication.

Assembly Action:

None

Public Comments

Public Comment:

Jeffrey M. Shapiro, P.E., International Code Consultants, representing International Institute of Ammonia Refrigeration, requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

606.12.1.1 Ammonia Refrigeration. Refrigeration systems using ammonia refrigerant and the buildings in which such systems are installed shall comply with IAR-2 for system design and installation and IAR 7 for operating procedures.

Add a standard to Chapter 80 as follows:

IAR

International Institute of Ammonia Refrigeration
1001 N. Fairfax Street, Suite 503
Alexandria, VA 22314

IAR-7-2013 *Developing Operating Procedures for Closed-Circuit Ammonia Mechanical Refrigerating*

(Portions of proposal not shown remain unchanged)

Commenter's Reason: At the time of the committee hearing, development of IAR 7 was slightly behind schedule, and the standard had not yet been finalized. Accordingly, as the proponent of the proposal, we asked the committee to exclude IAR 7 from consideration at that time. The standard has now completed the ANSI standard development process and has been finalized. A

copy is available for download at <http://tinyurl.com/IIAR7>. IIAR 7 represents a significant step forward in refrigeration safety by establishing a minimum standard for mandatory operating procedures for ammonia refrigeration systems. Referencing this document in the IFC will give code enforcers a means to require that appropriate operating procedures be developed and maintained, which, when followed, will significantly reduce the risk of accidents.

Analysis: The draft of IIAR7-2013 was submitted with code change F80-13 and was reviewed by the IFC committee. For analysis of the content of IIAR7-2013 relative to CP #28, Section 3.6, please visit, <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>.

Final Hearing Results

F80-13

AMPC

Code Change No: F81-13

Original Proposal

Section(s): 606.12.3

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration
(jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

606.12.3 Ammonia refrigerant. Systems containing more than 6.6 pounds (3 kg) of ammonia refrigerant shall discharge vapor to the atmosphere in accordance with one of the following methods: ~~through an approved treatment system in accordance with Section 606.12.4, a flaring system in accordance with Section 606.12.5, or through an approved ammonia diffusion system in accordance with Section 606.12.6, or by other approved means.~~

Exceptions: 4- Ammonia/water absorption systems containing less than 22 pounds (10 kg) of ammonia and for which the ammonia circuit is located entirely outdoors.

- ~~1.2 Directly to atmosphere~~ When the fire code official determines, on review of an engineering analysis prepared in accordance with Section 104.7.2, that a fire, health or environmental hazard would not result from atmospheric discharge of ammonia directly to the atmosphere
2. Through an approved treatment system in accordance with Section 606.12.4
3. Through a flaring system in accordance with Section 606.12.5
4. Through an approved ammonia diffusion system in accordance with Section 606.12.6
5. By other approved means.

Reason: Exception 2 in the current text isn't really an exception. It's just another discharge option in addition to the four that are listed in the current base paragraph. The proposed revision restructures the existing text to make this clear, and it duplicates the 6.6 pound threshold currently provided in the parent paragraph (606.12) for clarity. No technical change is intended.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F81-12

AS

Code Change No: F82-13

Original Proposal

Section(s): 607.4 (New)

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc.
(bdblack@neii.org)

Add new text as follows:

607.4 Occupant evacuation elevator lobbies. Where occupant evacuation elevators are provided in accordance with Section 3008 of the *International Building Code*, occupant evacuation elevator lobbies shall be maintained free of storage and furniture.

[Re-number subsequent sections]

Reason: The proposed text replicates an identical requirement in Section 607.3 for fire service access elevators. It is just as important for occupant evacuation elevator lobbies to be maintained free of storage and furniture if the elevators are to be available and safe for building occupants to use this system to evacuate the building in case of fire.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement. The committee expressed a concern that a similar requirement should also appear in the IBC to avoid enforcement conflicts.

Assembly Action:

None

Final Hearing Results

F82-12

AS

Code Change No: **F83-13**

Original Proposal

Section(s): 607.4 (New)

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc.
(bdbblack@neii.org)

Add new text as follows:

607.4 Water protection of hoistway enclosures. Methods to prevent water from infiltrating into a hoistway enclosure required by Section 3007.4 and Section 3008.4 of the *International Building Code* shall be maintained.

[ReNUMBER subsequent sections]

Reason: The referenced sections of the International Building Code provide performance criteria to ensure that water from the operation of an automatic sprinkler system outside of an enclosed fire service access or occupant evacuation elevator lobby does not enter the hoistway and compromise the function of the elevator. Drains in the lobbies or drainage trenches at the hoistway door openings are two of many ways these requirements can be met. As drain openings are subject to clogging by dirt and debris, it is important that the integrity of these systems be maintained if the elevators are to remain function in case of a fire.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F83-12

AS

Code Change No: F90-13

Original Proposal

Section(s): 609.2

Proponent: Barry Greive, representing Target Corporation (barry.greive@target.com)

Revise as follows:

609.2 Where required. A Type I hood shall be installed at or above all commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease vapors.

Exception: A Type I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m³ or less of grease when tested at an exhaust flow rate of 500 cfm (0.236 m³/s) in accordance with Section 17 of UL 710B

Reason: This proposal is intended to bring consistency between the Fire Code and Mechanical Code provisions.

Section 609.1 of the Fire Code states that "Commercial kitchen exhaust hoods shall comply with the requirements of the International Mechanical Code." This statement lends itself to imply that they should be consistent. There are many situations where the amount of grease is very low to almost non-existent and a type 1 hood is not needed. This exception will bring greater consistency between the codes, better clarity to when a type 1 hood is needed, and a test method that must be followed to show compliance.

Cost Impact: This will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

609.2 Where required. A Type I hood shall be installed at or above all commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease vapors.

Exception: A Type I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m³ or less of grease when tested at an exhaust flow rate of 500 cfm (0.236 m³/s) in accordance with ~~Section 17 of~~ UL 710B.

Committee Reason: The committee agreed with the proponent's reason statement. The modification correlates with the IMC on the subject.

Assembly Action:

None

Final Hearing Results

F90-13

AM

Code Change No: F91-13

Original Proposal

Section(s): 609.3.3.2, Chapter 80

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

609.3.3.2 Grease accumulation. If during the inspection it is found that hoods, grease-removal devices, fans, ducts or other appurtenances have an accumulation of grease, such components shall be cleaned in accordance with ANSI/IKECA C-10.

Add new standard to Chapter 80 as follows:

IKECA

International Kitchen Exhaust Cleaning Association
100 North 20th, Street, Suite 400
Philadelphia, PA 19103

C10-2011 *Standard for Cleaning of Commercial Kitchen Exhaust Systems...* 609.3.3.2

Reason: Commercial kitchen exhaust systems remove smoke, soot and grease-laden vapor resulting from cooking operations. These systems become contaminated with grease and cooking by-products over time. Accumulations of these combustible contaminants create a fire safety hazard to workers, patrons, other building occupants and property. Mitigation of this hazard requires periodic cleaning of commercial kitchen exhaust systems.

The first edition of ANSI/IKECA C10-2011, *Standard for Cleaning of Commercial Kitchen Exhaust Systems*, was developed by the IKECA Standards Development Committee Consensus Body. It approved the standard on September 1, 2011. It was approved as an American National Standard by the American National Standards Institute (ANSI) on December 9, 2011.

For many years, the commercial kitchen exhaust cleaning industry has relied on certain codes and standards. ANSI/IKECA C10 addresses many of the areas that these other standards and codes do not cover. The other codes include the *International Fire Code®* (Section 609 Commercial Kitchen Hoods; 904 Alternative Automatic Fire-Extinguishing Systems, including: 904.2.1 Hood suppression systems; 904.3.2 Actuation; 904.3.3 System interlocking; 904.3.5 Monitoring; 904.11 Commercial cooking systems; 904.11 thru 904.11.6.5), the *International Mechanical Code®* (Section 202 General Definitions; 506 Commercial Kitchen Grease Ducts and Exhaust Equipment; 507 Commercial Kitchen Hoods; 508 Commercial Kitchen Make Up Air; 509 Fire Suppression Systems; 917 (Solid Fuel) Cooking Appliances), the *ASHRAE® Handbook HVAC Applications* (Chapter 31, Ventilation of the Industrial Environment), and the *NFPA 96®, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*.

ANSI/IKECA C-10 is intended to determine the frequency and necessity for commercial kitchen exhaust system cleaning through inspection procedures, to define acceptable methods for cleaning exhaust systems and components, and to set standards for acceptable post-cleaning cleanliness.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This standard applies to, but is not limited to, Type I exhaust systems. This standard does not apply to residential kitchen exhaust systems, replacement air systems, fire extinguishing systems, heating and air-conditioning systems, dryer exhaust systems, and toilet exhaust systems.

The purpose of this standard is to enhance public safety by reducing the potential fire safety hazards associated with commercial kitchen exhaust systems through the performance of professional cleaning services, irrespective of the type of cooking equipment used and whether used in public or private facilities.

About IKECA: The International Kitchen Exhaust Cleaning Association (IKECA) formed in 1989 and became an ANSI accredited standards developer in 2008. IKECA was founded by a small group of exhaust kitchen exhaust cleaning specialists who were attending the same meeting. They had similar beliefs in the importance of proper and complete exhaust cleaning to the fire

protection world. Within two years, these founders had created the first non-profit trade association for the kitchen exhaust cleaning industry.

Today, IKECA members represent some of the best in the industry from around the world. They are proud to have made significant contributions to the decrease in commercial kitchen fires in the U.S. The current membership is approximately 250. Headquartered in Philadelphia, IKECA is a member of the International Code Council. For more information, visit www.ikeca.org.

Additionally this Standard covers the required documentation associated with the cleaning and inspections of kitchen exhaust hoods. Currently there is no Standard recognized by the IFC for this purpose, and adoption of this Standard will enhance code compliance and enforcement.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Cost Impact: This code change will not increase the cost of construction

Analysis: A review of the standard proposed for inclusion in the code, IKECA C10-2011, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of IKECA C10-2011 relative to CP#28, Section 3.6, please visit: <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides a needed standard to assist the fire code official in determining standards of and methods for cleaning hood and duct systems.

Assembly Action:

None

Final Hearing Results

F91-12

AS

Code Change No: F93-13

Original Proposal

Section(s): 609.3.3.3.1 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

609.3.3.3 Records. Records for inspections shall state the individual and company performing the inspection, a description of the inspection and when the inspection took place. Records for cleanings shall state the individual and company performing the cleaning and when the cleaning took place. Such records shall be completed after each inspection or cleaning, maintained on the premises for a minimum of three years and be copied to the *fire code official* upon request.

609.3.3.3.1 Tags. Where a commercial kitchen hood or duct system is inspected, a tag containing the service provider name, address, telephone number and date of service shall be provided in a conspicuous location. Prior tags shall be covered or removed.

Reason: The proposed text clarifies necessary marking requirements to visually confirm serviceability of commercial kitchen hood and ducting systems. The text is consistent with the requirements set forth in ANSI/IKECA C-10, which is proposed for adoption by a separate code change proposal submitted by the F-CAC.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change compliments the action taken on code change F91-13 by providing the fire code official with an easily discernible indicator of the cleaning status of a hood and duct system. It also was noted that this feature has been in successful use in the State of New Jersey.

Assembly Action:

None

Final Hearing Results

F93-12

AS

Code Change No: F94-13

Original Proposal

Section(s): 609.4 (New), Chapter 80

Proponent: James Carver, City of El Segundo Fire Department, representing City of El Segundo (jcarver@elsegundo.org)

Add new text as follows:

609.4 Appliance connection to building piping. Gas-fired commercial cooking appliances installed on casters and appliances that are moved for cleaning and sanitation purposes shall be connected to the piping system with an appliance connector listed as complying with ANSI Z21.69. The commercial cooking appliance connector installation shall be configured in accordance with the manufacturer's installation instructions. Movement of appliances with casters shall be limited by a restraining device installed in accordance with the connector and appliance manufacturer's instructions.

Add new standard to Chapter 80:

ANSI

American National Standards Institute
25 West 43rd Street
Fourth Floor
New York, NY 10036

Z21.69/CSA 616-09 Connectors for Movable Gas Appliances

Reason: The end users of commercial cooking appliances are replacing listed flexible piping with residential flexible piping, causing mechanical damage to the residential flexible piping when the cooking equipment is moved for cleaning, and causing a fire/life safety problem with gas leaks and fires. A similar section exists in the California Plumbing Code, and while it would be followed during initial installation by the plumbing inspector, maintenance of the code section requirements could not be verified by the fire inspector unless it was put into the Fire Code.

Cost Impact: None, the user is complying with existing code requirements.

Analysis: The proposed text is similar to IFGC Section 411.1.1 as revised by code change FG24-12 (AMPC). The standard proposed for inclusion in the code, ANSI Z21.69/CSA 616-09, is currently referenced in the IFGC.

Public Hearing Results

For staff analysis of the content of ANSI Z21.69/CSA 616-09 relative to CP#28, Section 3.6, please visit: <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides important correlation with Section 411.1.1 of the IFGC.

Assembly Action:

None

Final Hearing Results

F94-12

AS

Code Change No: F95-13

Original Proposal

Section(s): 610.1, 610.2, 610.3 (New), 610.4, 610.5, 610.6 (New), 610.7, 5701.2, Chapter 80

Proponent: Andy Burke, Restaurant Technologies, Inc, representing self (aburke@rti-inc.com)

Revise as follows:

610.1 ~~General~~ Commercial Kitchen Cooking Oil Storage Tank Systems. Storage of cooking oil (grease) in commercial cooking operations utilizing aboveground tanks with a capacity greater than 60 gal (227 L) installed within a building shall comply with Chapter 57 Sections 610.2 through 610.7. Systems used to store cooking oils in larger than 60-gallon (227 L) above-ground tanks shall also comply with Sections 610.2 through 610.5. For purposes of this section, cooking oil shall be classified as a Class IIIB liquid unless otherwise determined by testing.

610.2 Metallic Storage Tanks. Metallic cooking oil storage tanks shall be listed in accordance with UL 142 or UL 80, and shall be installed in accordance with Section 5704 and the tank manufacturer's instructions.

610.3 Nonmetallic Storage Tanks. Nonmetallic cooking oil storage tanks shall be installed in accordance with the tank manufacturer's instructions and shall also comply with all of the following:

1. Tanks shall be designed in accordance with ASTM D1998 unless otherwise approved.
2. Tank capacity shall not exceed 200 gallons per tank.
3. Tanks shall be suitable for use with cooking oil and the maximum temperature to which the tank will be exposed during use.

610.3 ~~610.4~~ Other Storage Components **Cooking Oil Storage System Components. Cooking oil storage system components including shall include but are not limited to piping, connections, fittings, valves, tubing, hose, pumps, vents, and other related components used for the transfer of cooking oil from the cooking appliance to the storage tank, and from the storage tank to the discharge point, shall be installed in accordance with Section 5703.6 and are permitted to be of either metallic or non-metallic construction.**

610.4.1 Design Standards. The design, fabrication, and assembly of system components shall be suitable for the working pressures and structural stresses to be encountered by the components.

610.4.2 Components in Contact with Heated Oil. Any system component that comes in contact with heated cooking oil shall be rated for the maximum intermittent and continuous operating temperatures expected in the system.

610.4.3 Plenums. Installation of non-metallic cooking oil system components shall be prohibited in concealed interstitial spaces used as return air plenums unless the components are fully enclosed within continuous noncombustible raceways or enclosures, approved gypsum board assemblies, or within materials listed and labeled for installation within a plenum.

610.4 ~~610.5~~ Tank Venting. Normal and emergency venting shall be provided for cooking oil storage tanks shall terminate outside the building as specified in Sections 5704.2.7.3 and 5704.2.7.4.

610.5.1 Normal Vents. Normal venting shall be located above the maximum normal liquid line, and shall have a minimum effective area at least as large as the largest filling or withdrawal connection.

610.5.2 Emergency Vents. Emergency relief venting shall be located above the maximum normal liquid line, and shall be in the form of a device or devices that will relieve excessive internal pressure caused by an exposure fire. For non-metallic tanks, the emergency relief vent shall be allowed to be in the form of construction.

610.6 Heating of Cooking Oil. Electrical equipment used for heating cooking oil in cooking oil storage systems shall be listed to UL 499 and shall comply with NFPA 70. Use of electrical immersion heaters shall be prohibited in non-metallic tanks.

~~610.5~~ **610.7 Electrical Equipment.** ~~Electrical equipment used for the operation and heating of the cooking oil storage systems shall be listed and comply with NFPA 70.~~

Revise as follows:

5701.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:

1 through 10 *(No change to current text)*

11. Commercial cooking oil storage tank systems located within a building and designed and installed in accordance with Section 610.

Add new standards to Chapter 80 as follows:

ASTM

D 1998-06 Standard Specification for Polyethylene Upright Storage Tanks

UL

499-05 Standard for Electrical Heating Appliances

Reason: The section as written presents practical challenges to innovative restaurant technologies, which entirely eliminate manual handling of cooking oil. These systems provide personnel safety and environmental improvements to existing manual or semi-manual oil handling operations. The proposal seeks to address the following issues:

The requirements as currently written (added in 2012 version of the code) are based on used, spent, or inedible cooking oil. For systems which include fresh cooking oil supply, a foodstuff, tanks and components must be food grade. The metallic tank standards currently referenced are based on fuel oil storage tanks and do not meet food grade requirements. The proposal addresses this limitation by adding requirements for non-metallic tanks, with an associated recognized engineering tank standard adapted for use with cooking oil.

Current references to Chapter 57 are more relevant to industrial flammable and combustible liquid tank requirements. High flash point cooking oil in a restaurant back-of-house setting represents a different, and generally lower, hazard than commonly anticipated by Chapter 57. The proposed exemption to Section 5701.2 unifies all pertinent fire safety requirements into Section 610 and the standards referenced therein. This establishes the level of safety applicable to this hazard. This approach is consistent with other exceptions in Chapter 57, in particular the exception for fuel oil tanks connected with oil burning equipment. The proposal takes into consideration comments received from code officials and fire safety professionals.

Note: This proposal applies only to the storage of cooking oil, a Class IIIB liquid with a high flash point (typically above 500°F), which represents a low fire hazard when stored and used per the requirements of the proposal. All other flammable and combustible liquids must comply with Chapter 57.

As written, Section 610.4 requires tank venting to terminate outside of the building, as specified in Sections 5704.2.7.3 and 5704.2.7.4. These referenced sections allow tanks storing Class IIIB liquids to vent inside the building, based on the relatively low fire hazard associated with Class IIIB liquids. The proposal modifies the current requirements for venting to accurately reflect the level of protection for this hazard as established in Chapter 57.

The intent of the requirements as written, as described in the 2012 substantiation, was to add a level of protection to address the use of immersion heaters in storage tanks containing used cooking oil. The proposal addresses these concerns by requiring compliance to UL 499 and NFPA 70, and by restricting the use of immersion heaters to metallic tanks only. Furthermore, the proposal requires all other electrical equipment used with cooking oil storage tank systems to comply with NFPA 70 as well.

The limitations for installing non-metallic tubing or piping are consistent with the International Mechanical Code requirements.

Cost Impact: The code change proposal will not increase the cost of construction. The introduction of Section 610 to the 2012 IFC increased cost of construction by limiting cooking oil storage tanks to metallic construction. The proposal will allow for non-metallic tank construction, allowing costs to remain reasonable for this type of technology and usage. The proposal also provides cost efficiencies for support/compliance of environmental initiatives to limit/prevent the introduction of used cooking oil and used portable containers into liquid and solid waste streams.

Analysis: A review of the standard proposed for inclusion in the code, ASTM D1998-06, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013. UL 499-05 is currently referenced in the IMC.

Public Hearing Results

For staff analysis of the content of ASTM D1998-06 and UL 499-05 relative to CP#28, Section 3.6, please visit: <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Disapproved

Committee Reason: The committee's disapproval was based on its agreement with testimony that indicated that the proposed standard ASTM D1998 is scoped to apply only to tanks with a capacity greater than 500 gallons, that the tank testing that has been done to ASTM D1998 so far does not speak to tank material degradation over time or to the storage of liquids with a temperature over 140-150 degrees F which are the limits of the standard. Concern was also expressed that the fire code official would be put in a position to approve the suitability of tanks and their materials without adequate technical information. The committee also felt that it was unacceptable to run piping in overhead return air plenums under any circumstances, to allow non-metallic relief valves for non-metallic tanks and was concerned as to where the normal and emergency tanks vents would discharge. The concept of the proposal was felt to be a good one but that more appropriate standard development and testing need to be done first.

Assembly Action:

None

Public Comments

Public Comment:

Andy Burke, Restaurant Technologies, Inc., representing self, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

610.1 Commercial Kitchen Cooking Oil Storage Tank Systems. Storage of cooking oil (grease) in commercial cooking operations utilizing aboveground tanks installed within a building to store cooking oils with a capacity greater than 60 gal (227 L) shall comply with Sections 610.2 through 610.7, and NFPA 30. For purposes of this section, cooking oil shall be classified as a Class IIIB liquid unless otherwise determined by testing.

610.2 Metallic Storage Tanks. Metallic cooking oil storage tanks shall be listed in accordance with UL 142 or UL 80, and shall be installed in accordance with the tank manufacturer's instructions.

610.3 Nonmetallic Storage Tanks. Nonmetallic cooking oil storage tanks shall be installed in accordance with the tank manufacturer's instructions and shall also comply with all of the following:

1. Tanks shall be ~~designed in accordance with ASTM D1998 unless otherwise approved.~~ listed for use with cooking oil, including the maximum temperature to which the tank will be exposed during use.
2. Tank capacity shall not exceed 200 gallons per tank.
3. ~~Tanks shall be suitable for use with cooking oil and the maximum temperature to which the tank will be exposed during use.~~

610.4 Cooking Oil Storage System Components. Cooking oil storage system components shall include but are not limited to piping, connections, fittings, valves, tubing, hose, pumps, vents, and other related components used for the transfer of cooking oil and are permitted to be of either metallic or non-metallic construction.

610.4.1 Design Standards. The design, fabrication, and assembly of system components shall be suitable for the working pressures, temperatures and structural stresses to be encountered by the components.

610.4.2 Components in Contact with Heated Oil. Any system component that comes in contact with heated cooking oil shall be rated for the maximum ~~intermittent and continuous~~ operating temperatures expected in the system.

610.4.3 Plenums. Installation of non-metallic cooking oil system components shall be prohibited in concealed interstitial spaces used as return air plenums unless the components are fully enclosed within continuous noncombustible raceways or enclosures, approved gypsum board assemblies, or within materials listed and labeled for such application.

610.5 Tank Venting. Normal and emergency venting shall be provided for cooking oil storage tanks.

610.5.1 Normal Vents. Normal ~~venting vents~~ shall be located above the maximum normal liquid line, and shall have a minimum effective area at least as large as the largest filling or withdrawal connection. Normal vents shall be permitted to vent inside the building.

610.5.2 Emergency Vents. Emergency relief ~~venting vents~~ shall be located above the maximum normal liquid line, and shall be in the form of a device or devices that will relieve excessive internal pressure caused by an exposure fire. For non-metallic tanks, the emergency relief vent shall be allowed to be in the form of construction. Emergency vents shall be permitted to vent inside the building.

610.6 Heating of Cooking Oil. Electrical equipment used for heating cooking oil in cooking oil storage systems shall be listed to UL 499 and shall comply with NFPA 70. Use of electrical immersion heaters shall be prohibited in non-metallic tanks.

610.7 Electrical Equipment. Electrical equipment used for the operation of cooking oil storage systems shall comply with NFPA 70.

Revise as follows:

5701.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:

11. Commercial cooking oil storage tank systems located within a building and designed and installed in accordance with Section 610 and NFPA 30.

Revise Chapter 80 standards as follows:

ASTM

~~D 1998-06~~ — Standard Specification for Polyethylene Upright Storage Tanks

UL

499-05 Standard for Electrical Heating Appliances

Commenter's Reason: To speak to the IFC Committee's reasons for disapproval of this code change, an item-by-item discussion follows:

610.1, 610.3, 5701.2(11) and Chapter 80 reference: The IFC Committee expressed concerns about the scope of the referenced standard, ASTM D1998, as applies to non-metallic cooking oil storage tanks, specifically the capacity of the tanks, tank material degradation over time, and the storage of cooking oil at elevated temperatures. The Committee also expressed concern that the fire code official would be put in a position to approve tanks and their materials without adequate technical information. Based on these concerns, and with further discussions and recommendations from the fire code community, the Fire-CAC and NFPA 30, it is proposed to delete the ASTM standard referenced in 610.3 and Chapter 80 and replace with the requirement that non-metallic tanks must be listed for use with cooking oil.

610.4.1: Add temperature requirements to the design standards to address storage at elevated temperatures.

610.4.2: Eliminate the words "intermittent and continuous" to clarify that components shall be rated for the maximum exposure temperature.

610.4.3: To address the IFC Committee concerns about piping in overhead return air plenums, this paragraph will be removed.

610.5.1 and 610.5.2: The IFC Committee expressed concern as to where the normal and emergency vents would discharge. The proposal is to allow the tanks to vent to the inside of the building, understanding that the fire and health safety risk would be very low considering this would apply only to tanks storing cooking oil, a Class IIIB liquid with a high flash point, and also considering the low frequency, volume and speed with which transfer operations occur.

The IFC Committee expressed concerns about non-metallic relief valves for non-metallic tanks. For metallic tanks, venting requirements are contained in the tank standards referenced in 610.2 and no changes to these requirements are proposed. For non-metallic tanks, the vent devices will be included as part of the overall listing. Furthermore, the proposal to add the NFPA 30, Chapter 19 requirement includes venting requirements in accordance with NFPA 30, Chapter 22.

Final Hearing Results

F95-13

AMPC

Code Change No: F96-13

Original Proposal

Section(s): 611 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Add new text as follows:

SECTION 611 **HYPERBARIC FACILITIES**

611.1 General. Hyperbaric facilities shall be inspected, tested and maintained, in accordance with NFPA 99.

611.2 Records. Records shall be maintained of all testing and repair conducted on the hyperbaric chamber and associated devices and equipment. Records shall be available to the fire code official.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Currently there is no specific requirement for maintaining hyperbaric chambers in the IFC. Adding this section into Chapter 6 will require that all hyperbaric chambers are maintained to the same NFPA standard they were required to meet when they were installed.

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F96-12

AS

Code Change No: F97-13

Original Proposal

Section(s): Chapter 7, 701.1

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

CHAPTER 7 FIRE-RESISTANCE-RATED CONSTRUCTION FIRE AND SMOKE PROTECTION FEATURES

701.1 Scope. ~~The provisions of this chapter shall specify the requirements for and the maintenance of fire-resistance-rated construction.~~ The provisions of this chapter govern maintenance of the materials, systems and assemblies used for structural fire resistance and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings. New buildings shall comply with the *International Building Code*.

Reason: This proposal will provide correlation of IBC Chapter 7 which addresses construction of assemblies to limit the spread of fire and smoke with IFC Chapter 7 which addresses maintenance of the constructed assemblies designed to limit the spread of fire and smoke.

Chapter 7 in the IBC is titled "Fire and Smoke Protection Features". Since IFC Chapter 7 is intended to maintain the components which are constructed under IBC Chapter 7, a revision in the title of the IFC Chapter to mirror the IBC is appropriate.

The scope of IBC Chapter 7 reads as follows:

701.1 Scope. The provisions of this chapter shall govern the materials, systems and assemblies used for structural *fire resistance* and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

The proposed scope of IFC Chapter 7 is written to address maintenance of the items covered in the scope of IBC Chapter 7. Therefore, the similarity in the language is appropriate.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES

701.1 Scope. The provisions of this chapter shall govern maintenance of the materials, systems and assemblies used for structural fire resistance and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings. New buildings shall comply with the *International Building Code*.

Committee Reason: The proposal was approved as it cleans up and clarifies the scope of Chapter 7 with regard to the need for the maintenance of fire resistance and fire rated construction. The modification simply adds the word "shall" to address the need for mandatory language.

Assembly Action:

None

Final Hearing Results

F97-13

AM

Code Change No: F99-13

Original Proposal

Section(s): 803.5.1

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

803.5.1 Textile wall or ceiling coverings. Textile wall or ceiling coverings shall comply with one of the following:

1. The wall or ceiling covering shall have a Class A flame spread index in accordance with ASTM E 84 or UL 723, and be protected by automatic sprinklers installed in accordance with Section 903.3.1.1 or 903.3.1.2;
2. The wall covering shall meet the criteria of Section ~~803.5.1.1~~ or 803.5.1.2 when tested in the manner intended for use in accordance with NFPA 265 using the product-mounting system, including adhesive, of actual use; or
3. The wall or ceiling covering shall meet the criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 using the product-mounting system, including adhesive, of actual use.

~~**803.5.1.1 Method A test protocol.** During the Method A protocol, flame shall not spread to the ceiling during the 40-kW exposure. During the 150-kW exposure, the textile wall covering shall comply with all of the following:~~

- ~~1. Flame shall not spread to the outer extremity of the sample on the 8-foot by 12-foot (203 by 305 mm) wall.~~
- ~~2. The specimen shall not burn to the outer extremity of the 2-foot wide (610 mm) samples mounted in the corner of the room.~~
- ~~3. Burning droplets deemed capable of igniting textile wall coverings or that burn for 30 seconds or more shall not form.~~
- ~~4. Flashover, as defined in NFPA 265, shall not occur.~~
- ~~5. The maximum net instantaneous peak heat release rate, determined by subtracting the burner output from the maximum heat release rate, does not exceed 300 kW.~~

Reason: The Method A protocol of NFPA 265 has been deleted from the mandatory portion of the NFPA 265 test. Method A was eliminated from NFPA 265 because it was always considered simply a screening test. Note that NFPA 265 states, in the annex: "Method A test protocol is a screening test method that is useful for testing small amounts of material." Note that NFPA 265 Method A uses small 2 foot samples as opposed to the full 8 foot samples used by the Method B.

Method A of NFPA 265 was retained in the IFC for two more code cycles to accommodate older existing systems but can now be eliminated as no longer needed. The IBC already eliminated Method A 2 cycles ago.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The test method protocol was outdated and needed to be deleted. It had previously been deleted from the IBC.

Assembly Action:

None

Final Hearing Results

F99-12

AS

Code Change No: F101-13

Original Proposal

Section(s): 803.7 (New)

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

803.7 Facings or wood veneers intended to be applied on-site over a wood substrate. Facings or wood veneers intended to be applied on-site over a wood substrate shall comply with one of the following:

1. The facing or wood veneer shall have a Class A, B, or C flame spread index and smoke developed index, based on the requirements of Table 803, in accordance with ASTM E 84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.
2. The facing or wood veneer shall meet the criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 using the product-mounting system, including adhesive, described in section 5.8.9 of NFPA 286.

(Renumber subsequent sections)

Reason: Clarification has recently been issued, in the mounting method for wall coverings in ASTM E84 (namely ASTM E2404), to detail the proper way to test facings or wood veneers intended to be applied over a wood substrate. They are to be treated the same way as any other wall or ceiling covering applied "on-site" to a wood substrate but differently from panels where the facing or veneer is applied in the factory over the wood substrate and the entire panel is installed. A separate proposal addresses factory-produced panels.

The new section in ASTM E2404 reads as follows:

8.7 Facings or Wood Veneers Intended to be Applied On-site Over a Wood Substrate:

- 8.7.1 *If the facing or wood veneer is intended to be applied on-site over a wood substrate, the specimens shall comply with*
- 8.7.1.1 *as well as with 8.1.*
- 8.7.1.1 *The specimens shall consist of the facing or wood veneer mounted on the "A" face of nominal 15/32 in. untreated plywood with a face veneer of Douglas fir. The plywood shall comply with NIST Voluntary Product Standard PS 1-07. The plywood shall carry the grade stamp of either APA-The Engineered Wood Association or TECO, indicating that the plywood has been graded PS 1-07 A-C and is for exterior exposure. Alternatively, the plywood shall be permitted to be stamped as conforming to CSA O121 (Standard for Douglas fir plywood). Mount the specimens on the ledges of the Test Method E84 furnace without using additional means of support.*
- 8.8 *Laminated Products Factory-produced with a Wood Substrate — If the laminated product is factory-produced the specimens shall comply with the requirements of Practice E2579.*
- 8.1 *Whenever a wall or ceiling covering system uses an adhesive to attach a wall or ceiling covering material, the adhesive specified by the manufacturer shall be used for construction of the test specimen in accordance with the wall or ceiling covering manufacturer application instructions.*

Section 5.8.9 of NFPA 286 reads as follows:

- 5.8.9 Wall or Ceiling Coverings Intended to Be Applied over a Wood Substrate.** *If the wall or ceiling coverings are intended to be applied over a wood substrate, the specimens shall consist of the wall or ceiling covering mounted on untreated plywood, with a face veneer of Douglas fir. The plywood shall have the same thickness as the wood substrate used in actual installations, and shall comply with NIST Voluntary Product Standard PS 1-07, Structural Plywood. The plywood shall be marked with a grade stamp indicating that the plywood has been graded PS 1-07 A-B and is for exterior exposure. The grade stamp shall be issued by a quality control agency. Alternatively, the plywood shall be permitted to be stamped as conforming to CSA Standard O121, Douglas Fir Plywood.*

Cost Impact: None

Analysis: ASTM E2404 -08 is currently referenced in the IFC. An update in the year edition of that standard will be accomplished by an administrative standards update code change to be heard by the ADM Code Development Committee.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

803.7 Facings or wood veneers intended to be applied on-site over a wood substrate. Facings or ~~wood~~ veneers intended to be applied on-site over a wood substrate shall comply with one of the following:

1. The facing or ~~wood~~ veneer shall have a Class A, B, or C flame spread index and smoke developed index, based on the requirements of Table 803, in accordance with ASTM E 84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.
2. The facing or ~~wood~~ veneer shall meet the criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 using the product-mounting system, including adhesive, described in section 5.8.9 of NFPA 286.

Committee Reason: This provision specifically addresses the appropriate testing of veneers as it is intended to be applied. There was some concern that this would only apply to existing installations. Another concern was that the proposal focused only on wood veneers and should apply to all veneer types. A modification was made to remove the term "wood" throughout to address this concern.

Assembly Action:

None

Final Hearing Results

F101-13

AM

Code Change No: F106-13

Original Proposal

Section(s): 806.2, 807.1(IBC [F] 806.1), 807.1.2 (IBC [F] 806.1.2), 807.2 (IBC [F] 806.2), 807.4.2.2, 2603.5, 3104.2, 3105.4

Proponent: Timothy T. Earl, GBH International (tearl@gbhinternational.com)

Revise as follows:

806.2 Artificial vegetation. Artificial decorative vegetation shall meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701. Meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall be documented and certified by the manufacturer in an *approved* manner. Alternatively, the artificial decorative vegetation item shall be tested in accordance with NFPA 289, using the 20 kW ignition source, and shall have a maximum heat release rate of 100 kW.

807.1 (IBC [F] 806.1) General requirements. In occupancies in Groups A, E, I and R-1, and dormitories in Group R-2, curtains, draperies, hangings and other decorative materials suspended from walls or ceilings shall meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 in accordance with Section 807.2 or be noncombustible.

Exceptions:

1. Curtains, draperies, hangings and other decorative materials suspended from walls of *sleeping units* and *dwelling units* in dormitories in Group R-2 protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1 and such materials are limited to not more than 50 percent of the aggregate area of walls.
2. Decorative materials, including, but not limited to, photographs and paintings in dormitories in Group R-2 where such materials are of limited quantities such that a hazard of fire development or spread is not present.

In Groups I-1 and I-2, combustible decorative materials shall meet the flame propagation criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 unless the decorative materials, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present. In Group I-3, combustible decorative materials are prohibited.

Fixed or movable walls and partitions, paneling, wall pads and crash pads, applied structurally or for decoration, acoustical correction, surface insulation or other purposes, shall be considered interior finish if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered decorative materials or furnishings.

In Group B and M occupancies, fabric partitions suspended from the ceiling and not supported by the floor shall meet the flame propagation performance criteria in accordance with Section 807.2 and Test Method 1 or Test Method 2, as appropriate, of NFPA 701 or shall be noncombustible.

807.1.2 (IBC [F] 806.1.2) Combustible decorative materials. The permissible amount of decorative materials meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall not exceed 10 percent of the specific wall or ceiling area to which it is attached.

Exceptions:

1. In auditoriums in Group A, the permissible amount of decorative material meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall not exceed 75 percent of the aggregate wall area where the building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and where the material is installed in accordance with Section 803.11 of the *International Building Code*.
2. The amount of fabric partitions suspended from the ceiling and not supported by the floor in Group B and M occupancies shall not be limited.

807.2 (IBC [F] 806.2) Acceptance criteria and reports. Where required to be flame resistant, decorative materials shall be tested by an *approved* agency and meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701, or such materials shall be noncombustible.

Reports of test results shall be prepared in accordance with Test Method 1 or Test Method 2, as appropriate, of NFPA 701 and furnished to the *fire code official* upon request.

807.4.2.2 Motion picture screens. The screens upon which motion pictures are projected in new and existing buildings of Group A shall either meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 or shall comply with the requirements for a Class B interior finish in accordance with Section 803 of the *International Building Code*.

Revise as follows:

2603.5 Sealing of buildings, structures and spaces. Paper and other similar materials that do not meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall not be used to wrap or cover a building, structure or space in excess of that required for the sealing of cracks, casements and similar openings.

Revise as follows:

3104.2 Flame propagation performance treatment. Before a permit is granted, the *owner* or agent shall file with the *fire code official* a certificate executed by an *approved* testing laboratory certifying that the tents and membrane structures and their appurtenances; sidewalls, drops and tarpaulins; floor coverings, bunting and combustible decorative materials and effects, including sawdust when used on floors or passageways, are composed of material meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 or shall be treated with a flame retardant in an *approved* manner and meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701, and that such flame propagation performance criteria are effective for the period specified by the permit.

IBC [F] 801.4 Decorative materials and trim. *Decorative materials* and *trim* shall be restricted by combustibility, fire performance, or ~~and the flame propagation performance criteria of NFPA 701,~~ in accordance with Section 806.

Reason: In 1989 the NFPA Technical Committee on Fire Tests eliminated the so-called "small-scale test" from NFPA 701 because the results had been shown not to represent a fire performance that corresponded to what happened in real scale. Instead of the "small-scale test" NFPA 701 now (and for over 20 years) contains two tests (Test 1 and Test 2), which apply to materials as indicated by the text of NFPA 701 (2010) that is shown at the bottom of this proposal.

However, a large number of manufacturers continue stating that the materials or products that they sell have been tested to NFPA 701, when they really mean the pre-1989 small-scale test in NFPA 701. That test no longer exists and materials or products meeting that test do not exhibit acceptable fire performance.

The change above was already done in the IBC.

Text of NFPA 701 (2010):

- 1.1.1.1 Test Method 1 shall apply to fabrics or other materials used in curtains, draperies, or other window treatments. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.
- 1.1.1.2 Test Method 1 shall apply to single-layer fabrics and to multilayer curtain and drapery assemblies in which the layers are fastened together by sewing or other means. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.
- 1.1.1.3 Test Method 1 shall apply to specimens having an areal density less than or equal to 700 g/m² (21 oz/yd²), except where Test Method 2 is required to be used by 1.1.2.
- 1.1.2.1 Test Method 2 (flat specimen configuration) shall be used for fabrics, including multilayered fabrics, films, and plastic blinds, with or without reinforcement or backing, with areal densities greater than 700 g/m² (21 oz/yd²).
- 1.1.2.2 Test Method 2 shall be used for testing vinyl-coated fabric blackout linings and lined draperies using a vinyl-coated fabric blackout lining.
- 1.1.2.3 Test Method 2 shall be used for testing plastic films, with or without reinforcement or backing, when used for decorative or other purposes inside a building or as temporary or permanent enclosures for buildings under construction.
- 1.1.2.4 Test Method 2 shall apply to fabrics used in the assembly of awnings, tents, tarps, and similar architectural fabric structures and banners.

Note also the following from the text of NFPA 701 (2010):

- 1.2* Purpose.
- 1.2.1 The purpose of Test Methods 1 and 2 shall be to assess the propagation of flame beyond the area exposed to the ignition source.
- A.1.1 A small-scale test method appeared in NFPA 701 until the 1989 edition. It was eliminated from the test method because it has been shown that materials that "pass" the test do not necessarily exhibit a fire performance that is acceptable. The test was not reproducible for many types of fabrics and could not predict actual full-scale performance. It should not, therefore, be used.
- A.1.1.1 For the purposes of Test Method 1, the terms curtains, draperies, or other types of window treatments, where used, should include, but not be limited to, the following items:
 - (1) Window curtains
 - (2) Stage or theater curtains
 - (3) Vertical folding shades
 - (4) Roll-type window shades
 - (5) Hospital privacy curtains
 - (6) Window draperies
 - (7) Fabric shades or blinds
 - (8) Polyvinyl chloride blinds
 - (9) Horizontal folding shades
 - (10) Swags

Examples of textile items other than window treatments to which Test Method 1 applies include:

- (1) Table skirts
- (2) Table linens
- (3) Display booth separators
- (4) Textile wall hangings
- (5) Decorative event tent linings not used in the assembly of a tent

Cost Impact: Minimal

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved as it gets the correct NFPA 701 tests applied and is consistent with actions taken during the Group A code change cycle to the IBC. The committee noted that it was not their intention to place NFPA 701 back into Section 806.2 that was deleted by F105-13.

Assembly Action:

None

Final Hearing Results

F106-13

AS

Code Change No: F103-13

Original Proposal

Section(s): 805.3.2.2, 805.3.2.2.1 (New), 803.5.3.2.2.2 (New), Chapter 80

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

805.3.2 Mattresses. Newly introduced mattresses shall meet the requirements of Sections 805.3.2.1 through 805.3.2.3.

805.3.2.1 Ignition by cigarettes. Newly introduced mattresses shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with DOC 16 CFR Part 1632 and shall have a char length not exceeding 2 inches (51 mm).

805.3.2.2 Fire performance tests. Newly introduced mattresses shall be tested in accordance with Section 805.3.2.2.1 or 805.3.2.2.2.

805.3.2.2.1 Heat release rate. Newly introduced mattresses shall have limited rates of heat release when tested in accordance with ASTM E 1590 or California Technical Bulletin 129, as follows:

1. The peak rate of heat release for the single mattress shall not exceed 100 kW.
2. The total energy released by the single mattress during the first 10 minutes of the test shall not exceed 25 MJ.

805.3.2.2.2 Mass Loss Test. Newly introduced mattresses shall have a mass loss not exceeding 15% of the initial mass of the mattress when tested in accordance with the test in Annex A3 of ASTM F1085.

805.3.2.3 Identification.

Mattresses shall bear the label of an *approved* agency, confirming compliance with the requirements of Sections 805.3.2.1 and 805.3.2.2.

Add new standard to Chapter 80 as follows:

ASTM

F1085-10 Standard Specification for Mattress and Box Springs for Use in Berths in Marine Vessels.....
805.3.2.2.2

Reason: The test method in Annex A3 of ASTM F1085 was developed originally for use in detention and correctional occupancies and it is a very severe test that is a reasonable (and less expensive) alternative to ASTM E1590. This test is very simple and can be conducted at any facility and does not require the use of an instrumented fire test lab. The test can be described in a few words: it involves rolling up a mattress, placing it at an angle (for example by holding it with a brick), introducing newspaper into the volume surrounding the rolled up mattress and igniting the newspaper with a match.

One of the advantages of using the ASTM F1085 Annex A3 test is that if the mattress materials melt away from the flame with flaming drips they may "pass" the ASTM E1590 test but melting will not allow a mattress to pass this test. In this test the material that flames on the floor will keep burning the mattress itself.

The following table shows the results using the ASTM F1085 Annex A3 test for a number of mattresses in two studies (one in 1980 and one in 2003) and it also shows whether the mattresses meet the ASTM E1590 requirements in the IFC code. It is clear from the table that mattresses usually burn up almost completely or lose very little mass and that the ASTM F1085 test will not pass mattresses that fail the IFC code requirements.

Mattress	ASTM F1085 Mass Loss %	IFC Code Pass: Yes or No
1 (2003)	1.22	Yes
2 (2003)	9.47	Yes
3 (2003)	3.30	Yes
4 (2003)	100	No
5 (2003)	100	No
1 (1980)	100	No
2 (1980)	100	No
3 (1980)	98.5	No
4 (1980)	91.1	No
5 (1980)	91	No
6 (1980)	83.1	No
7 (1980)	44.7	No
8 (1980)	3.0	Yes

As another example of the usefulness of this test, two mattresses, both of which pass the ASTM E1590 test requirements, were recently tested to the ASTM F1085 Annex A3 test. One of the mattresses gave a mass loss of 1% while the other one melted and burnt virtually completely.

Test/Results	Polychloroprene Mattress	FR Polyester Mattress
ASTM F1085 Annex A3	1% weight loss (pass)	>90% weight loss (fail)
ASTM E1590	Pass (Peak HRR: 25 kW)	Pass

The test method from Annex A3 of ASTM F1085 is also described (albeit without enough details to conduct the test in a standard fashion) in section 10.2 of ASTM F1870 (Standard Guide for Selection of Fire Test Methods for the Assessment of Upholstered Furnishings in Detention and Correctional Facilities) as a test method "Designed for Detention and Correction Facilities".

Relevant parts of the text of Annex A3 of ASTM F1085 follows:

- A3.1 Background**
- A3.1.1** *This optional test method provides a means for evaluating mattresses, and mattress inserts, for the weight loss, and fire behavior they exhibit under specified exposure conditions.*
- A3.1.2** *Results of this test method are likely to be reasonably predictive of the results of the test method in Annex A1, in terms of being able to differentiate between mattresses (or mattress inserts) of various degrees of fire performance.*
- A3.1.3** *This test method is capable of subdividing mattresses (or mattress inserts) into several categories depending on their response to the ignition source applied: some mattresses (or mattress inserts) will burn up completely, while some others will lose small fractions of the initial weight, with a series of intermediate fire-test responses also likely.*
- A3.2 Test Specimen**
- A3.2.1** *Use as the test specimen an actual manufactured mattress, mattress insert, or prototype thereof, in the configuration of its intended use.*
- A3.2.2** *If an actual manufactured mattress, or mattress insert, is not supplied, the size of the default mattress to be tested has the following dimensions: 0.76 by 1.90 m by at least 76 mm thick (30.0 by 75 in. by at least 3 in. thick). Whenever possible an actual mattress shall be used.*
- A3.2.3** *The test specimen used shall be the size representative of the intended use of the product to be tested. Report the actual dimensions of the test specimen used.*
- A3.2.4** *The test specimen, shall, in all respects, reflect the construction of the actual mattress, or mattress insert, that it is intended to represent.*
- A3.5 Procedure**
- A3.5.1** *Conduct the tests in a room equipped with appropriate exhausts to ensure that the resulting smoke can be vented. The so-called "ASTM room" (2.4 by 3.7 by 2.4 m high; 8 by 12 by 8 ft high) described in Test Method E1590 is an example of a room deemed satisfactory for this test. Rooms of other dimensions are also suitable.*
- A3.5.2** *Weigh 8 double sheets of black print newspaper (not tabloid size) and record the weight, to an accuracy of no less than 1.0 g.*
- A3.5.3** *Weigh the conditioned mattress, or mattress insert, and record the weight, to an accuracy of no less than 50 g. This shall be considered the initial mattress or mattress insert weight. Test within 30 min of weighing the mattress.*
- A3.5.4** *Use a pipe approximately 0.6-1.0 m (24-39 in.) long and 230-250 mm (9-10 in.) in internal diameter for rolling the mattress, or mattress insert.*
- A3.5.5** *Roll the long dimension of the test specimen (mattress, mattress prototype, mattress insert or mattress cushioning material), completely around the pipe. Retain the test specimen in place by using steel poultry netting or a minimum of three steel wire ties. This configuration creates a "chimney effect." Remove the pipe after the roll containing the test specimen has been secured and has formed a test specimen roll.*
- A3.5.5.1** *If the mattress, or mattress insert, is asymmetrical, inasmuch as the top and bottom surfaces are different, tests shall be conducted on both sides. If results differ depending on the side exposed to the ignition source, the appropriate results are those from the test that is shown to be more severe.*
- A3.5.6** *Position the test specimen roll such that it is both: (1) secure from falling and (2) tilted to one side at an angle of 75-80 degrees to the floor. This is achievable: (a) by propping up the test specimen roll on one side, with two 70-80 mm (3 in.) steel angle irons or two bricks, with 70-100 mm separation between them, and securing the test specimen roll from tipping over during testing by attaching 3 wires to the steel netting, with the wires suspended from up high (for*

- example from the ceiling) or (b) by leaning the mattress against a non combustible support at the required angle. The angled configuration is needed to allow air to enter at the bottom of the chimney formed by the test specimen roll.
- A3.5.7 Crumple up the sheets of newspaper, loosely, into individual balls approximately 150 mm (6 in.) in diameter and place them in the inside of the chimney.
- A3.5.8 Ignite the crumpled newspaper, from the top, with a single match, ensuring that the newspaper is well lit.
- Note: A rather intense fire lasting 90-100 s is likely to result.
- A3.5.9 Allow free burning of the test specimen roll until the first of the following conditions is reached: (a) All burning has ceased. (b) Flashover in the test room appears inevitable. In this case, extinguish the test specimen fire manually and report the result as a flashover. Weighing of the test specimen remains is not necessary in this case.
- A3.5.10 Conclude the test after visible flames have ceased, unless the mattress, or mattress insert, is still smoldering. At the test conclusion, let the mattress, or mattress insert, cool to room temperature and check to ensure that there is no visible smoke and that the mattress, or mattress insert, is not smoldering.
- A3.5.11 If the mattress, or mattress insert, is smoldering when visible flames have ceased, do not conclude the test but continue the test until 60 minutes have elapsed and then terminate the test. Report the time at which visible flames have ceased and the time at which smoldering has ceased, unless smoldering has continued until the test has been externally terminated. Report the method of test termination and check to ensure that there is no more smoldering, no visible smoke and that the mattress is dry (if water was used).
- A3.5.12 Upon completion of the test, the mattress, or mattress insert, remains, if any, shall be weighed, after placing them in a pre-weighed non combustible container. The mattress, or mattress insert, remains shall include any portion of the test specimen that has fallen off, during or after the test.
- A3.5.14 Conduct the test in duplicate. Conduct each burn on an untested specimen.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, ASTM F1085-10, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of ASTM F1085-10 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: This proposal was seen as another viable option for testing the fire performance of mattresses.

Assembly Action:

None

Final Hearing Results

F103-12

AS

Code Change No: F104-13

Original Proposal

Section(s): 806.1.1

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Add new text as follows:

806.1.1 Restricted occupancies. Natural cut trees shall be prohibited within ambulatory care facilities and Group A, E, I-1, I-2, I-3, I-4, M, R-1, R-2 and R-4 occupancies.

Exceptions:

1. Trees located in areas protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 shall not be prohibited in Groups A, E, M, R-1 and R-2.
2. Trees shall be allowed within *dwelling units* in Group R-2 occupancies.

Reason: Ambulatory Care Facilities are being added to the list of prohibited occupancies for natural cut trees at Section 806.1.1. Patients in these facilities are rendered incapable of self-preservation in this occupancy in activities that present the same evacuation challenges presented by Group I-2 occupancies which are already in the list. This section is recommended for modification because of the rapid manner in which a natural cut tree is consumed by fire with the associated release of heat and smoke would present a distinct hazard to occupants. A burning tree could not be approached or passed by thus effectively blocking that portion of an egress path while spreading heat and smoke to additional portions of the means of egress.

Ambulatory Care Facilities are located within Business (Group B) occupancies where natural cut trees are permitted. This added prohibition eliminates a hazard that otherwise would not occur for similar activities conducted in a Group I-2 occupancy and provides an improved level of protection for other occupancies in the mixed use situation.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Cost impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The restriction of natural cut trees in Ambulatory Care facilities was felt to be appropriate and was consistent with the restrictions of Group I occupancies.

Assembly Action:

None

Final Hearing Results

F104-12

AS

Code Change No: **F108-13**

Original Proposal

Section(s): 806.3

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self
(rjd@davidsoncodeconcepts.com)

Revise as follows:

806.3 Obstruction of means of egress. The required width of any portion of a *means of egress* shall not be obstructed by decorative vegetation. Natural cut trees shall not be located within an exit, corridor, or a lobby or vestibule.

Reason: Section 806.3 "Obstruction of the means of egress" is recommended for modification because the rapid manner in which a natural cut tree is consumed by fire with the associated release of heat and smoke would present a distinct hazard to egress regardless of whether it impinged on the required width of the means of egress. A burning tree could not be approached or passed by thus effectively blocking that portion of an egress path while spreading heat and smoke to additional portions of the means of egress. A significant impact would be a natural cut tree located within a lobby that has the allowed 50% of all egress capacity passing through the same lobby.

Cost impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved as it simply prohibits natural cut trees within specific critical areas of the means of egress.

Assembly Action:

None

Final Hearing Results

F108-12

AS

Code Change No: F109-13

Original Proposal

Section(s): 807 (IBC [F] 806)

Proponent: Amy Carpenter, representing Pioneer Network Long Term Care Code Task Force (acarpenter@lenhardtrodgers.net) and Wayne Jewell Township of Green Oak, MI representing self

Revise as follows:

SECTION 807 DECORATIVE MATERIALS OTHER THAN DECORATIVE VEGETATION IN NEW AND EXISTING BUILDINGS

807.1 (IBC [F]806.1) General. ~~Combustible decorative materials, other than decorative vegetation, shall comply with Section 807.2 through 807.5.~~

807.1 (IBC [F]806.1) General requirements. ~~In occupancies in Groups A, E, I and R-1 and dormitories in Group R-2, curtains, draperies, hangings and other decorative materials suspended from walls or ceilings shall meet the flame propagation performance criteria of NFPA 701 in accordance with section 807.2 or be noncombustible.~~

Exceptions:

- ~~1. Curtains, draperies, hangings and other decorative materials suspended from walls of sleeping units and dwelling units in dormitories in Group R-2 protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1 and such materials are limited to not more than 50 percent of the aggregate area of walls. (relocated to Section 807.3 exception 2)~~
- ~~2. Decorative materials, including, but not limited to, photographs and paintings in dormitories in Group R-2 where such materials are of limited quantities such that a hazard of fire development or spread is not present. (relocated to Section 807.5.5)~~

~~In Groups I-1 and I-2, combustible decorative materials shall meet the flame propagation criteria of NFPA 701 unless the decorative materials, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present. In Group I-3, combustible decorative materials are prohibited. (relocated to Section 807.5.6 and 807.5.7)~~

~~Fixed or movable walls and partitions, paneling, wall pads and crash pads, applied structurally or for decoration, acoustical correction, surface insulation or other purposes, shall be considered interior finish if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered decorative materials or furnishings. (relocated to Section 807.3)~~

~~In Group B and M occupancies, fabric partitions suspended from the ceiling and not supported by the floor shall meet Sections 807.2 and 807.3 the flame propagation performance criteria in accordance with Section 807.2 and NFPA 701 or shall be noncombustible.~~

807.1.1(IBC [F]806.1.1), 807.2 (IBC [F] 806.2) Noncombustible materials. The permissible amount of noncombustible decorative material shall not be limited.

807.1.2 (IBC [F]806.1.1) 807.3 (IBC [F] 806.3) Combustible decorative materials. In other than Group I-3, The permissible amount of curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall be flame resistant meeting the flame propagation performance criteria of NFPA 701 in accordance with Section 807.4 and shall not exceed 10 percent of the specific wall or ceiling area to which it is attached.

Fixed or movable walls and partitions, paneling, wall pads and crash pads applied structurally or for decoration, acoustical correction, surface insulation or other purposes shall be considered interior finish if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered decorative materials or furnishings. (relocated from Section 807.1)

Exceptions:

1. In auditoriums in Group A, the permissible amount of curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings meeting the flame propagation performance criteria of NFPA 701 shall not exceed 75 percent of the aggregate wall area where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, and where the material is installed in accordance with Section 803.11 of the International Building Code.
2. In Group R-2 dormitories, within sleeping units and dwelling units, the permissible amount of curtains, draperies, fabric hangings and other similar decorative materials suspended from walls or ceiling shall not exceed 50 percent of the aggregate wall areas where the building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1. (relocated and revised from Section 807.1, exception 1)
- ~~3.2.~~ In Group B and M occupancies, the amount of fabric partitions suspended from the ceiling and not supported by the floor in Group B and M occupancies shall not be limited.

807.2 (IBC [F] 806.2) 807.4 (IBC [F] 806.4) Acceptance criteria and reports. Where required to be flame resistant, curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall be tested by an approved agency and meet the flame propagation performance criteria of NFPA 701, or such materials shall be noncombustible. Reports of test results shall be prepared in accordance with NFPA 701 and furnished to the *fire code official* upon request.

807.4 807.5 Occupancy-based requirements. In occupancies specified in Group A, E and I-4 day care facilities, combustible decorative materials not complying with Section 807.3 other than decorative vegetation shall comply with Sections 807.5.1 807.4.4 through 807.4.4.2 807.5.7.

IFC 807.5.1 807.4.4 General. ~~All of~~ The following requirements shall apply to all occupancies: to all Group A and E occupancies and Group I-4 day care facilities regulated by Sections 807.4.2 through 807.4.4:

1. ~~Explosive or highly flammable materials:~~ Furnishings or decorative materials of an explosive or highly flammable character shall not be used.
2. ~~Fire retardant coatings:~~ Fire-retardant coatings in existing buildings shall be maintained so as to retain the effectiveness of the treatment under service conditions encountered in actual use.
3. ~~Obstructions:~~ Furnishings or other objects shall not be placed to obstruct *exits*, access thereto, egress there from or visibility thereof.

807.5.2 807.4.2 Group A. In Group A occupancies, the requirements in Sections 807.4.2.1 807.5.2.1 through 807.4.2.3 807.5.2.4 shall apply to occupancies in Group A.

807.5.2.1 807.4.2.1 Foam plastics. Exposed foam plastic materials and unprotected materials containing foam plastic used for decorative purposes or stage scenery or exhibit booths shall have a maximum heat release rate of 100 kW when tested in accordance with UL 1975, or when tested in accordance with NFPA 289 using the 20 kW ignition source.

Exceptions:

1. Individual foam plastic items or items containing foam plastic where the foam plastic does not exceed 1 pound (0.45 kg) in weight.
2. Cellular or foam plastic shall be allowed for trim in accordance with Section 804.2.

807.5.2.2 ~~807.4.2.2~~ Motion Picture Screens. The screens upon which motion pictures are projected in new and existing buildings shall either ~~meet the flame propagation performance criteria of NFPA 701-~~ comply with Section 807.4 or shall comply with the requirements for a Class B interior finish in accordance with Section 803 of the *International Building Code*.

807.5.2.3 ~~807.4.2.3~~ Wood use in ~~Group A-3~~ places of religious worship. In places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall ~~be allowed~~ not be limited.

807.5.2.4 ~~807.3 (IBC [F] 806.4)~~ Pyroxylin plastic. Imitation leather or other material consisting of or coated with a pyroxylin or similarly hazardous base shall not be used ~~in Group A occupancies~~.

807.5.3 ~~807.4.3~~ Group E. Group E occupancies shall comply with Sections the requirements in Sections 807.4.3.1 807.5.3.1 through and 807.4.3.2 807.5.3.3 shall apply to occupancies in Group E.

807.5.3.1 ~~807.4.3.1~~ Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

Exceptions:

1. *Corridors* protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. *Corridors* protected by an *approved ~~smoke detection~~ fire alarm* system installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

807.5.3.2 ~~807.4.3.2~~ Artwork in corridors. Artwork and teaching materials shall be limited on the walls of *corridors* to not more than 20 percent of the wall area.

807.5.3.3 Artwork in classrooms. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached.

807.5.4 ~~807.4.4~~ Group I-4, day care facilities. Group I-4 occupancies shall comply with, the requirements in Sections 807.4.4.1 807.5.4.1 through and 807.4.4.2 807.5.4.2 shall apply to day care facilities classified in Group I-4.

807.5.4.1 ~~807.4.4.1~~ Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

Exceptions:

1. *Corridors* protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. *Corridors* protected by an *approved ~~smoke detection~~ fire alarm* system installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

807.5.4.2 ~~807.4.4.2~~ Artwork in corridors. Artwork and teaching materials shall be limited on the walls of *corridors* to not more than 20 percent of the wall area.

807.5.4.3 Artwork in classrooms. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached.

807.5.5 Dormitories in Group R-2. In Group R-2 dormitories, within sleeping units and dwelling units, the combustible decorative materials, shall be of limited quantities such that a hazard of fire development or spread is not present. *(relocated and revised from Section 807.1, exception 2)*

807.5.6 Groups I-1 and I-2. In Groups I-1 and I-2 occupancies, combustible *decorative materials* shall be of such limited quantities that a hazard of fire development or spread is not present.*(relocated from Section 807.1)*

IFC 807.5.7 Group I-3. In Group I-3, combustible *decorative materials* are prohibited. *(relocated from Section 807.1)*

Reason: The proposed revision is intended to be a clarification of the combustible materials permitted within a space. Specifically, to understand the different requirements for fabric-type decorative materials and paper-type decorative materials and what quantities of each are permitted in various use groups.

Currently, photographs and paintings, in some use groups, are required to be tested and certified to NFPA 701. The scope of this standard does not address paper items such as artwork and photographs and therefore was impossible to comply with.

The scope of NFPA 701 is as follows:

"1.1.1* Test Method 1

1.1.1.1 Test Method 1 shall apply to fabrics or other materials used in curtains, draperies, or other window treatments. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.

1.1.1.2 Test Method 1 shall apply to single-layer fabrics and to multi-layer curtain drapery assemblies in which the layers are fastened together by sewing or other means. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.

1.1.1.3 Test Method 1 shall apply to specimens having an areal density less than or equal to 700 g/m² (21 oz/yd²), except where Test Method 2 is required to be used by 1.1.2."

Most revisions are editorial and serve to provide better clarity and to group requirements by use group.

807.1 – A general statement was needed so that the requirements match the Section title

The former text in 807.1 was re-organized and is now in Section 807.3 and 807.5 for better clarity.

807.2 – re-number only

807.3 - Since Group I-3 are limited to only non-combustible, the limitation is added to the front of the combustible materials.

The remainder of the sentence is revised for coordination with the next section on acceptance criteria and eliminating redundant reference to NFPA 701. That section starts out with "where required to be flame resistant". The limitation to "curtains, draperies, hangings and other decorative materials suspended from walls or ceilings" is in the first paragraph in Section 807.1. The addition of the words "fabric" hangings and other "similar" combustible decorative materials is to differentiate between fabrics and films that are covered under NFPA Standard 701 and other materials used for decorative effect, that are discussed in 807.5 for each use group.

Exception 1 is specific to Group A for percentage of materials complying with 701.

Exception 2, curtains for dormitories is relocated from 807.1. It was reformatted to be consistent with the exception for auditoriums. Revised language shown below:

2. In Group R-2 dormitories, within sleeping units and dwelling units, the permissible amount of curtains, draperies, fabric hangings and other similar decorative materials suspended from walls or ceiling of sleeping units and dwelling units in dormitories in Group R-2 shall not exceed 50 percent of the aggregate wall areas where the building is equipped throughout with protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1 and such materials are limited to not more than 50 percent of the aggregate area of walls.

Exception 3, reformatted to put groups first.

807.4 – Deleted text is not needed as this is addressed in 807.2. Added text is intended to specifically reference decorative items that are covered under the NFPA Standard.

807.5 – This proposed revision places requirements for multiple use groups in this section so the listing of groups was deleted. In addition, new section 807.1 already states this section is not applicable to decorative vegetation, so this language was deleted.

807.5.1 – these requirements should apply to all occupancies in this section. Titles at the beginning of each sentence were redundant and not proper code language.

807.5.2 – text re-organized for consistency. The intent is to clarify the following conditions are applicable to Group A

807.5.2.1 – Re-number only

807.5.2.2 - Re-number. This is a subsection of Group A criteria, so group not needed. Consistency between subsections.

807.5.2.3 – Re-number. This is a subsection of Group A criteria, so group not needed. Plus, only in the title, not the text. Consistency between subsections.

807.5.2.4 - Relocated to group with Group A requirements. This is a subsection of Group A criteria, so group not needed. Consistency between subsections.

807.5.3 - text re-organized for consistency. The intent is to clarify the following conditions are applicable to Group E

807.5.3.1 – Re-number. Change in Exception 2 is for consistency in language with Section 907.

807.5.3.2 – Re title and re-number only.

807.5.3.3 - This provide guidance within the classroom as to how much art work is permitted.

807.5.4 - The intent of the first sentence is to clarify that the general provisions are applicable for Group I-4. The phrase “day care facilities” is redundant.

807.5.4.1 – Re-number. Change in Exception 2 is for consistency in language with Section 907.

807.5.4.2 – Re-title and re-number only.

807.5.4.3 – This provide guidance within the classroom as to how much art work is permitted.

807.5.5 - Relocate existing exception 2 in 807.1 related to Group R-2 dormitories. Language is similar to paper in school corridors. NFPA 701 does not apply to Photos or paintings. All Group R are now required to be sprinklered, so the threat of flame spread is reduced. Revised language shown below:

807.5.5 (IBC [F] 806.5.5) Dormitories in Group R-2. ~~In Group R-2 dormitories, within sleeping units and dwelling units, the combustible decorative materials, including, but not limited to, photographs and paintings in dormitories in Group R-2 where such materials are shall be~~ of limited quantities such that a hazard of fire development or spread is not present.

807.5.6 - Relocate existing Group I-1 and I-2 from 2nd paragraph of 807.1. New 807.3 would apply to curtains in all occupancies, including Group I-1 and I-2. This allowance is just for the paper permitted in the facilities. Revised language shown below:

IFC 807.5.6 Groups I-1 and I-2. ~~In Groups I-1 and I-2, combustible decorative materials shall meet the flame propagation criteria of NFPA 701 unless the decorative materials, including, but not limited to, photographs and paintings, are be~~ of such limited quantities that a hazard of fire development or spread is not present.

807.5.7 – Re-located from 2nd paragraph of 807.1. Also scoped in 807.3

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

SECTION 807 DECORATIVE MATERIALS OTHER THAN DECORATIVE VEGETATION IN NEW AND EXISTING BUILDINGS

807.1 (IBC [F]806.1) General. Combustible decorative materials, other than decorative vegetation, shall comply with Section 807.2

through 807.5.

807.2 General. The following requirements shall apply to all occupancies:

- ~~1. Furnishings or decorative materials of an explosive or highly flammable character shall not be used.~~
- ~~2. Fire-retardant coatings in existing buildings shall be maintained so as to retain the effectiveness of the treatment under service conditions encountered in actual use.~~
- ~~3. Furnishings or other objects shall not be placed to obstruct exits, access thereto, egress there from or visibility thereof.~~
- ~~4. The permissible amount of noncombustible decorative materials shall not be limited.~~

~~**807.2 (IBC [F] 806.2) Noncombustible materials.** The permissible amount of noncombustible decorative material shall not be limited.~~

807.3 (IBC [F] 806.3) Combustible decorative materials. In other than Group I-3, curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall ~~comply be flame resistant in accordance~~ with Section 807.4 and shall not exceed 10 percent of the specific wall or ceiling area to which ~~they are~~ it is attached.

Fixed or movable walls and partitions, paneling, wall pads and crash pads applied structurally or for decoration, acoustical correction, surface insulation or other purposes shall be considered *interior finish*, shall comply with Section 803 if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered *decorative materials* or furnishings. (*relocated from Section 807.1*)

Exceptions:

1. In auditoriums in Group A, the permissible amount of curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall not exceed 75 percent of the aggregate wall area where the building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and where the material is installed in accordance with Section 803.11 of the *International Building Code*.
2. In Group R-2 dormitories, within sleeping units and dwelling units, the permissible amount of curtains, draperies, fabric hangings and other similar decorative materials suspended from walls or ceiling shall not exceed 50 percent of the aggregate wall areas where the building is equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1. (*relocated and revised from Section 807.1, exception 1*)
3. In Group B and M occupancies, the amount of combustible fabric partitions suspended from the ceiling and not supported by the floor shall comply with Section 807.4 and shall not be limited.

807.4 (IBC [F] 806.4) Acceptance criteria and reports. Where required to ~~exhibit improved fire performance be flame resistant~~, curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall be tested by an *approved* agency and meet the flame propagation performance criteria of Test 1 or Test 2, as appropriate of NFPA 701 or exhibit a maximum rate of heat release of 100kW when tested in accordance with NFPA 289, using the 20 kW ignition source. Reports of test results shall be prepared in accordance with the test method used NFPA 704 and furnished to the *fire code official* upon request.

807.5 Occupancy-based requirements. In occupancies, combustible decorative materials not complying with Section 807.3 shall comply with Sections 807.5.1 through 807.5.7.

807.5.1 General. The following requirements shall apply to all occupancies:

- ~~1. Furnishings or decorative materials of an explosive or highly flammable character shall not be used.~~
- ~~2. Fire-retardant coatings in existing buildings shall be maintained so as to retain the effectiveness of the treatment under service conditions encountered in actual use.~~
- ~~3. Furnishings or other objects shall not be placed to obstruct exits, access thereto, egress there from or visibility thereof.~~

~~**807.5.1-807.5.2 Group A.** In Group A occupancies, the requirements in Sections 807.5.2.1 through 807.5.2.4 shall apply to occupancies in Group A.~~

~~**807.5.1.1-807.5.2.4 Foam plastics.** Exposed foam plastic materials and unprotected materials containing foam plastic used for decorative purposes or stage scenery or exhibit booths shall have a maximum heat release rate of 100 kW when tested in accordance with UL 1975, or when tested in accordance with NFPA 289 using the 20 kW ignition source.~~

Exceptions:

1. Individual foam plastic items or items containing foam plastic where the foam plastic does not exceed 1 pound (0.45 kg) in weight.
2. Cellular or foam plastic shall be allowed for trim in accordance with Section 804.2.

~~**807.5.1.2-807.5.2.2 Motion Picture Screens.** The screens upon which motion pictures are projected in new and existing buildings shall either comply with Section 807.4 or shall comply with the requirements for a Class B interior finish in accordance with Section 803 of the *International Building Code*.~~

~~807.5.1.3-807.5.2.3~~ Wood use in places of religious worship. In places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall not be limited.

~~807.5.1.4-807.5.2.4~~ (IBC [F] 806.4) Pyroxylin plastic. Imitation leather or other material consisting of or coated with a pyroxylin or similarly hazardous base shall not be used.

~~807.5.2-807.5.3~~ Group E. Group E occupancies, shall comply with Sections the requirements in Sections 807.5.3.1 through 807.5.3.3

~~807.5.2.1-807.5.3.4~~ Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

Exceptions:

1. *Corridors* protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. *Corridors* protected by an *approved fire alarm system* installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

~~807.5.2.2-807.5.3.2~~ Artwork in corridors. Artwork and teaching materials shall be limited on the walls of *corridors* to not more than 20 percent of the wall area.

~~807.5.2.3-807.5.3.3~~ Artwork in classrooms. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached.

~~807.5.3-807.5.4~~ Group I-4, day care facilities. Group I-4 occupancies shall comply with, the requirements in Sections 807.5.4.1 through 807.5.4.2 .

~~807.5.3.1-807.5.4.4~~ Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

Exceptions:

1. *Corridors* protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. *Corridors* protected by an *approved fire alarm system* installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

~~807.5.3.2-807.5.4.2~~ Artwork in corridors. Artwork and teaching materials shall be limited on the walls of *corridors* to not more than 20 percent of the wall area.

~~807.5.3.3-807.5.4.3~~ Artwork in classrooms. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached.

~~807.5.4-807.5.5~~ Dormitories in Group R-2. In Group R-2 dormitories, within sleeping units and dwelling units, the combustible decorative materials, shall be of limited quantities such that a hazard of fire development or spread is not present. (*relocated and revised from Section 807.1, exception 2*)

~~807.5.5-807.5.6~~ Groups I-1 and I-2. In Groups I-1 and I-2 occupancies, combustible *decorative materials* shall be of such limited quantities that a hazard of fire development or spread is not present. (*relocated from Section 807.1*)

~~807.5.6-807.5.7~~ Group I-3. In Group I-3, combustible *decorative materials* are prohibited. (*relocated from Section 807.1*)

Committee Reason: This proposal was seen as a good clarification and organization of the requirements in Section 807. A modification was presented that combined elements from F110-13 and made some additional adjustments to clarify the proposal. Section 807.2 in the modification was relocated from the proposed location 807.5.1. Section 807.2 was relocated into item 4 in the new section 807.2. Other revisions related to the appropriate application of NFPA 701 and the addition of NFPA 289 as a viable test for decorative materials.

Assembly Action:

None

Public Comments

Public Comment 3:

Marcelo M. Hirschler, (GBH International), requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

807.5.3 Groups I-1 and I-2. In Groups I-1 and I-2 occupancies, combustible *decorative materials* shall comply with Sections 807.5.3.1 through 807.5.3.4.

807.5.3.1 Group I-1 and Group I-2 Condition 1 within units. In Group I-1 and Group I-2 Condition 1 occupancies, equipped throughout by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1, within sleeping units and dwelling units, combustible *decorative materials* placed on walls shall be limited to not more than 50 percent of the wall area to which they are attached.

807.5.3.2 In Group I-1 and Group I-2 Condition 1 for areas other than within units. In Group I-1 and Group I-2 Condition 1 occupancies, equipped throughout by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1, combustible *decorative materials* placed on walls in areas other than within dwelling and sleeping units shall be limited to not more than 30 percent of the wall area to which they are attached.

807.5.3.3 In Group I-2 Condition 2. In Group I-2 Condition 2 occupancies, equipped throughout by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1, combustible *decorative materials* placed on walls shall be limited to not more than 30 percent of the wall area to which they are attached.

807.5.3.4 Other areas in Groups I-1 and I-2. In Group I-1 and I-2 occupancies, in areas not equipped throughout by an *approved automatic sprinkler system*, combustible *decorative materials* shall be of such limited quantities that a hazard of fire development or spread is not present.

807.5.5 Groups I-1 and I-2. In Groups I-1 and I-2 occupancies, combustible *decorative materials* shall be of such limited quantities that a hazard of fire development or spread is not present.

807.5.4 807.5.6 Group I-3. (No change to text)

807.5.5 807.5.3 Group I-4, day care facilities. (No change to text)

807.5.5.1 807.5.3.4 Storage in corridors and lobbies. (No change to text)

807.5.5.2 807.5.3.2 Artwork in corridors. (No change to text)

807.5.5.3 807.5.3.3 Artwork in classrooms. (No change to text)

807.5.6 807.5.4 Dormitories in Group R-2. (No change to text)

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: This comment proposes to integrate the proposed additional requirements (with sprinkler trade-offs) for Group I-1 and Group I-2 Condition 1 occupancies, as proposed by F111, within the accepted language of proposal F109. The proposed language would replace section 807.5.5 from the approved as modified version of proposal F109 by the new language in Section 807.5.3. The renumbering is consistent with the alphabetical order of the occupancies. The only other minor added changes made to the proposed language in F111 are the use of the words "decorative materials placed on walls" (because it is not possible to measure decorative materials placed other than on walls) and basing the limitation on the walls to which the decorative materials are attached because that provides added safety.

Final Hearing Results

F109-13

AMPC3

Code Change No: F113-13

Original Proposal

Section(s): 901.4.1

Proponent: Edwin M. Berkel, CFI, Fire Marshal, Mehlville Fire Protection District, St, Louis, MO (EBerkel@mehlvillefire.com)

Revise as follows:

901.4.1 Required fire protection systems. Fire protection systems required by this code or the *International Building Code* shall be installed, repaired, operated, tested and maintained in accordance with this code. Any fire protection system for which a design option, exception or reduction to the provisions of this code or the *International Building Code* has been granted shall be considered to be a required system.

Reason: The new text proposed for this section parallels the second paragraph of Section 901.2 of the IBC and will improve the correlation between the IBC and the IFC. While the code may not require a fire protection system for a specific building or portion thereof due to its occupancy, the fire protection system would still be considered a required system if some other code trade-off, exception, reduction or design option was taken based on the installation of the fire protection system. As a typical example, a small office building would not require an automatic sprinkler system solely due to its Group B occupancy classification; however, if an exit access corridor fire-resistance-rating reduction is taken in accordance with Table 1018.1 for buildings equipped throughout with an NFPA 13 sprinkler system, that sprinkler system would then be considered a required system. Code trade-offs, exceptions, reductions or other design options are not unique to the IBC but also occur frequently in the IFC. The following 62 IFC sections, among others, illustrate this fact and validate the need for the added text:

Chapter 3: 5 Sections: 304.3.3, 304.3.4, 308.1.4, 313.1, 318.1)
Chapter 4: Section 403.3
Chapter 5: 2 Sections (503.1.1, 507.5.1)
Chapter 6: Section 603.3.2.1
Chapter 8: 1 3 sections (Table 803.3, 803.5.1, 804.3.3.2, 805.1.1.2, 805.1.2.2, 805.2.1.2, 805.2.2.2, 805.4.1.2, 805.4.2.2, 806.1.1, 807.1, 807.4.3.1, 807.4.4.1)
Chapter 10: 16 sections (1005.3.1, 1005.3.2, 1007.2.1, 1007.3, 1007.4, 1008.1.9.4, 1009.3, Table 1014.3, 1015.1, 1015.2, Table 1016.2, Table 1018.1, 1018.4, Table 1021.2(1), Table 1021.2(2), 1022.1, 1026.6)
Chapter 11: 11 sections (1103.4.2, 1103.4.4, 1103.4.5, 1103.4.6, 1103.7.5.1, 1103.7.6, 1104.16.2, 1104.17, 1104.17.1, Table 1104.17.2, 1104.21)
Chapter 28: Section 2804.2.1
Chapter 32: Section 3204.2
Chapter 50: 3 Tables: 5003.1.1(1), 5003.1.1(2) and 5003.11.1
Chapter 57: 3 Sections: 5704.29.2.3., 5704.3.6.2, Tables 5704.3.6.3(1), (2) and (3)
Chapter 60: Section 6002.3.5
Appendix Sections: B105.1, B105.2; D106.1, D107.1

Cost impact: This proposal will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal better coordinates Section 901.2 of the IBC and will further clarify that such system installations are considered required if used as a tradeoff .

Assembly Action:

None

Final Hearing Results

F113-12

AS

Code Change No: F115-13

Original Proposal

Section(s): 901.4.6 (IBC [F] 901.8)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

901.4.6 Pump and riser room size. Where provided fire pump rooms and automatic sprinkler system riser rooms shall be designed with adequate space for all equipment necessary for the installation, as defined by the manufacturer, with sufficient working room around the stationary equipment. Clearances around equipment to elements of permanent construction, including other installed equipment and appliances, shall be sufficient to allow inspection, service, repair or replacement without removing such elements of permanent construction or disabling the function of a required fire-resistance-rated assembly. Fire pump and automatic sprinkler system riser rooms shall be provided with a door(s) and unobstructed passageway large enough to allow removal of the largest piece of equipment.

Reason: A fire pump room, an automatic sprinkler riser room, or the combination is not required by this section. This section can be interpreted to require rooms around fire sprinkler risers. The Fire Code committee and proponent verbally clarified this intent during 09/10 cycle. The proponent's intent is to clarify these rooms are not required. When one is provided, it is required to meet Section 901.8.

Cost Impact: This code change will increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal clarifies that this section does not require a pump room or sprinkler riser room but instead simply provides size requirements where such rooms are required. This was felt to be a good clarification.

Assembly Action:

None

Final Hearing Results

F115-12

AS

Code Change No: F118-13

Original Proposal

Section(s): 903.2.1 (IBC [F] 903.2.1)

Proponent: Barry Gupton, PE, NC Department of Insurance, Office of State Fire Marshal, Engineering Division (barry.gupton@ncdoi.gov)

Revise as follows:

903.2.1 (IBC [F] 903.2.1) Group A. An *automatic sprinkler system* shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. For Group A-1, A-2, A-3 and A-4 occupancies, the *automatic sprinkler system* shall be provided throughout the floor area where the Group A-1, A-2, A-3 or A-4 occupancy is located, and in all floors from the Group A occupancy to, and including, the ~~nearest level~~ levels of exit discharge serving the Group A occupancy. For Group A-5 occupancies, the *automatic sprinkler system* shall be provided in spaces indicated in Section 903.2.1.5.

Reason This change insures that floors adjacent to all exit discharges serving the assembly occupancy are protected with sprinklers to provide the additional time required to egress the higher occupant load. The previous language of "nearest level of exit discharge" may only protect one exit when exit discharge is on more than one level.

Cost Impact: The code change proposal will increase the cost of construction for buildings with more than one level of exit discharge that would not otherwise require sprinklers.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed that all levels of exit discharge serving the Group A occupancy should be addressed in Section 903.2.1. The current language only required sprinklers be installed to the nearest level of exit discharge.

Assembly Action:

None

Final Hearing Results

F118-12

AS

Code Change No: F119-13

Original Proposal

Section(s): 903.2.1

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

Revise as follows:

903.2.1 Group A. An *automatic sprinkler system* shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. For Group A-1, A-2, A-3 and A-4 occupancies, the *automatic sprinkler system* shall be provided throughout the floor area where the Group A-1, A-2, A-3 or A-4 occupancy is located, and in all floors from the Group A occupancy to, and including, the nearest *level of exit discharge* serving the Group A occupancy. For Group A-5 occupancies, the *automatic sprinkler system* shall be provided in the spaces indicated in Section 903.2.1.5.

903.2.1.1 Group A-1. An *automatic sprinkler system* shall be provided for Group A-1 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 12,000 square feet (1115 m²).
2. The *fire area* has an *occupant load* of 300 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.
4. The *fire area* contains a multitheater complex. When separate fire areas share exit or exit access components that have a cumulative occupant load of 300 or more.

903.2.1.2 Group A-2. An *automatic sprinkler system* shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 5,000 square feet (464 m²).
2. The *fire area* has an *occupant load* of 100 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.
4. When separate fire areas share exit or exit access components that have a cumulative occupant load of 300 or more.

903.2.1.3 Group A-3. An *automatic sprinkler system* shall be provided for Group A-3 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 12,000 square feet (1115 m²).
2. The *fire area* has an *occupant load* of 300 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.
4. When separate fire areas share exit or exit access components that have a cumulative occupant load of 300 or more.

903.2.1.4 Group A-4. An *automatic sprinkler system* shall be provided for Group A-4 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 12,000 square feet (1115 m²).
2. The *fire area* has an *occupant load* of 300 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.
4. When separate fire areas share exit or exit access components that have a cumulative occupant load of 300 or more.

Reason: Under the current provisions for sprinkler protection is assembly occupancies, the option of a fire area allows for compartmentation to be utilized in place of installing a sprinkler system. The issue with this arrangement is that multiple small assembly occupancies can be placed in a single story building and not trigger a sprinkler system because of the installation of a rated corridor and separation wall.

This proposal adds the requirement that sprinkler systems shall be added when the convergence of more than 300 persons shares an exit. This is consistent with the intent of automatic sprinkler systems being required for life safety and to maintain tenable exiting in a fire event. A fire event that is near an exit is the same whether there are 300 occupants in one room or three rooms with 100 occupants each sharing an exit. This is also consistent with the requirement in the current IFC for A-1 occupancies in "multitheater complex", which is a requirement for anytime two or more theaters are in the same tenancy and does not consider occupant load as a trigger.

This proposal still provides options for those single story buildings with multiple tenancies that have separate exits and utilize the fire area separation concept; such as buildings with multiple restaurants with separate entrances and strip-style mall buildings.

The State of New York has had experience in both fire losses and new building construction with this topic. First, the Stouffer's Inn and conference center in 1981 killed 23 top-level executives when a fire in a common hallway trapped occupants in several small (50-100 person) conference rooms. Second, the fire area method of separating A-3 occupancies has provided a way to not sprinkler college and university lecture room buildings by separating the spaces but having room occupant loads approaching 1,000 people in the common hallway.

This proposal is submitted with the endorsement of the New York State Building Officials Conference, the New York State Fire Marshals and Inspectors Association, and the Association of Fire Districts of New York State.

Cost Impact: For buildings that have previously utilized the passive method of separating assembly occupancies when exiting is shared, this will increase the cost of construction due to the additional sprinkler requirement.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The terminology "when separate fire areas share exit or exit access components" was confusing. More specifically it was unclear what occupancies were sharing with the Group A occupancy. Second, concerns were raised with the deletion of the specific requirement for multi-theater complexes.

Assembly Action:

None

Public Comments

Public Comment:

Daniel E. Nichols, requests Approval as Modified by this Public Comment.

Replace the proposal as follows:

903.2.1.6 Multiple fire areas. An automatic sprinkler system shall be provided where multiple fire areas of Group A-1, A-2, A-3, or A-4 occupancies share exit or exit access components and the combined occupant load of these fire areas is 300 or more.

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: Much discussion was held on this topic in Dallas; mainly regarding the potential confusion of the language, the applicability to buildings with different types of assembly use groups, and coordination with other sections of the IBC.

This public comment has moved the originally proposed modifications to 903.2.1.1 through 903.2.1.4 to a new 903.2.1.6. This modification is done to address the different assembly use group issue. The language of the proposal has been modified to create a qualifier (...where multiple fire areas of Group A-1....) and the two conditions (1. share exit or exit access components and 2. the occupant load of the fire area is 300 or more). This is done to minimize confusion of when this section is used, as well as to direct the code user what the bounds of the occupant load are (i.e. the occupant load of the fire areas, not the exit or exit access components).

The multitheater complex is being retained. No changes to 903.2.1.1 through 903.2.1.4 are being considered in this proposal.

Final Hearing Results

F119-13

AMPC

Code Change No: F120-13

Original Proposal

Section(s): 903.2.1

Proponent: Carl D. Wren, P.E., Austin Fire Department, representing self (carl.wren@austintexas.gov)

Revise as follows:

903.2.1 Group A. An automatic sprinkler system shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. For Group A-1, A-2, A-3 and A-4 occupancies, the automatic sprinkler system shall be provided throughout the floor area where the fire area containing the Group A-1, A-2, A-3 or A-4 occupancy is located, and ~~in~~ throughout all floors of the building ~~from~~ above or below the Group A occupancy to, and including, the nearest level of exit discharge serving the Group A occupancy. For Group A-5 occupancies, the automatic sprinkler system shall be provided in the spaces indicated in Section 903.2.1.5.

903.2.1.1 Group A-1. An automatic sprinkler system shall be provided for fire areas containing Group A-1 occupancies and intervening floors of the building that impact the egress pathways where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.
4. The fire area contains a multitheater complex.

903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for fire areas containing Group A-2 occupancies and intervening floors of the building that impact the egress pathways where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464 m²).
2. The fire area has an occupant load of 100 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.1.3 Group A-3. An automatic sprinkler system shall be provided for fire areas containing Group A-3 occupancies and intervening floors of the building that impact the egress pathways where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.1.4 Group A-4. An automatic sprinkler system shall be provided for fire areas containing Group A-4 occupancies and intervening floors of the building that impact the egress pathways where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.

3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.1.5 Group A-5. An automatic sprinkler system shall be provided for Group A-5 occupancies in the following areas: concession stands, retail areas, press boxes and other accessory use areas in excess of 1,000 square feet (93 m2).

Reason: The current code language can be somewhat confusing since the charging language in 903.2.1 deals with the occupancy and certain building areas outside the occupancy but the language in subsections 903.2.1.1, 903.2.1.2, 903.2.1.3 and 903.2.1.4 require the "occupancy" to be protected by fire sprinklers while it addresses the thresholds in terms of the size of the "fire area". It is not the intent of this proposal to change the requirements of this section, only to clarify them.

Cost Impact: This code change is being proposed as an effort to clarify potentially confusing language and will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

903.2.1 Group A. An automatic sprinkler system shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. For Group A-1, A-2, A-3 and A-4 occupancies, the automatic sprinkler system shall be provided throughout the floor where the fire area containing the Group A-1, A-2, A-3 or A-4 occupancy is located, and throughout all floors of the building ~~from above or below~~ the Group A occupancy to, and including, the nearest level of exit discharge serving the Group A occupancy. For Group A-5 occupancies, the automatic sprinkler system shall be provided in the spaces indicated in Section 903.2.1.5.

903.2.1.1 Group A-1. An automatic sprinkler system shall be provided for fire areas containing Group A-1 occupancies and intervening floors of the building ~~that impact the egress pathways~~ where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m2).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.
4. The fire area contains a multi-theater complex.

903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for fire areas containing Group A-2 occupancies and intervening floors of the building ~~that impact the egress pathways~~ where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464 m2).
2. The fire area has an occupant load of 100 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.1.3 Group A-3. An automatic sprinkler system shall be provided for fire areas containing Group A-3 occupancies and intervening floors of the building ~~that impact the egress pathways~~ where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m2).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.1.4 Group A-4. An automatic sprinkler system shall be provided for fire areas containing Group A-4 occupancies and intervening floors of the building ~~that impact the egress pathways~~ where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m2).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.1.5 Group A-5. An automatic sprinkler system shall be provided for Group A-5 occupancies in the following areas: concession stands, retail areas, press boxes and other accessory use areas in excess of 1,000 square feet (93 m2).

Committee Reason: The committee felt that this proposal better clarified the application of 903.2.1 than proposal F117-13. Several modifications were made to further clarify the application of the proposal. The first removes "above or below" and restores the term "from." This will address above or below grade situations as necessary. The next modification removes the language "that impact the egress pathways" as the language was felt difficult to enforce.

Assembly Action:

None

Public Comments

Public Comment 1:

Gregory R. Keith, Professional heuristic Development, representing The Boeing Company, requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

903.2.1 Group A. An automatic sprinkler system shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. For Group A-1, A-2, A-3 and A-4 occupancies, the automatic sprinkler system shall be provided throughout the ~~story floor~~ where the fire area containing the Group A-1, A-2, A-3 or A-4 occupancy is located, and throughout all ~~stories floors~~ of the building from the Group A occupancy to, and including, the nearest level of exit discharge serving the Group A occupancy. For Group A-5 occupancies, the automatic sprinkler system shall be provided in the spaces indicated in Section 903.2.1.5.

903.2.1.1 Group A-1. An automatic sprinkler system shall be provided for fire areas containing Group A-1 occupancies and intervening floors of the building where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.
4. The fire area contains a multi-theater complex.

903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for fire areas containing Group A-2 occupancies and intervening floors of the building where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464 m²).
2. The fire area has an occupant load of 100 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.1.3 Group A-3. An automatic sprinkler system shall be provided for fire areas containing Group A-3 occupancies and intervening floors of the building where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.1.4 Group A-4. An automatic sprinkler system shall be provided for fire areas containing Group A-4 occupancies and intervening floors of the building where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.1.5 Group A-5. An automatic sprinkler system shall be provided for Group A-5 occupancies in the following areas: concession stands, retail areas, press boxes and other accessory use areas in excess of 1,000 square feet (93 m²).

Commenter's Reason: This public comment for approval as further modified is intended to be entirely editorial in nature. It replaces the term "floor(s)" with the term "story(s)" in two locations. Floor is not a defined term in the IBC or IFC. Story is a defined term: "That portion of a building included between the upper surface of a floor and the upper surface of the floor..." Additionally, Section 903.2.1 refers to the "level of exit discharge." That term is defined as, "The story at the point at which an exit terminates and an exit discharge begins." Replacement of the term "floor" with the term "story" will be consistent with current IBC/IFC terminology and will assist code users by clarifying the application of this important provision.

Final Hearing Results

F120-13

AMPC1

Code Change No: F124-13

Original Proposal

Section(s): 903.2.1.6 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

903.2.1.6 (IBC [F] 903.2.1.6) Assembly use on roofs. Where an occupied roof has an assembly use with an occupant load exceeding 100, all floors between the occupied roof and the level of exit discharge shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

Reason: Currently the code states that if you have a fire area containing an A-2 Assembly on a floor other than the floor of exit discharge, that floor level and all floors to the level of exit discharge must be sprinklered. Frequently, roof tops are being used and occupied as assemblies. Building owners will provide an open air roof-top bar or lounge, or other use similar to a Group A-2 occupancy on the roof of a building.

The roof of the building does not meet the definition of a fire area. So protection of the occupants can be less than what would otherwise be required if the occupancy was on a floor rather than on the roof.

The current fire sprinkler threshold for Group A-2 is an occupant load of 100. It is appropriate to apply this same threshold to the occupant load on the roof.

This proposal will require that when a roof top is occupied for an assembly use AND the occupant load exceeds 100, then the building must be protected with sprinklers. This proposal does not require that the roof top itself is sprinklered, but provides sprinkler protection on all floors to the level of exit discharge.

The reference to Section 903.3.1.2 is added, since this use can occur on the roof of multi-family housing facilities.

Cost Impact: The code change will increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

903.2.1.6 (IBC [F] 903.2.1.6) Assembly use occupancy on roofs. Where an occupied roof has an assembly ~~use~~ occupancy with an occupant load exceeding 100, all floors between the occupied roof and the level of exit discharge shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

Committee Reason: Requiring an automatic sprinkler system within a building where a group A occupancy is located on the roof was felt to be a necessary lifesafety requirement. This is consistent with the requirements in Section 903.2.1 that protect the occupants from hazards they may need to egress through. The occupants of the Group A occupancy, whether within the building or on the roof, are unaware of the hazards in the building and need to evacuate through the building. There was some concern that this proposal along with F122-13 were overly restrictive. Sprinklers would be required when the occupant load of the Group A occupancy exceeds 100. The modification revises the term "use" to "occupancy" to be consistent with the use of the terms in the I-Codes.

Assembly Action:

None

Public Comments

Public Comment 1:

Emory Rodgers, VDHCO, representing self, requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

903.2.1.6 Assembly occupancy on roofs. Where an occupied roof has an assembly occupancy with an occupant load exceeding 100 for Group A-2 and 300 for other Group A occupancies, all floors between the occupied roof and the level of exit discharge shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

Commenter's Reason:

- Other Group A occupancies require sprinklers at 300 occupants not 100 that is only for A-2's. These other Group A's could have roof assemblies.
- The fire data clearly demonstrates there is no need to have such stringency for all other Group A occupancies
- In fact this Group A roof assembly and the 903.2.1 for Group A occupancies already will trigger sprinklers for any unsprinkled occupancy with a Group A-2 occupancy when on a 1st floor for that entire floor to be sprinkled or any other floors to sprinkle the entire building.
- Support the AM challenge for open parking garages and this AM challenge to allow 300 occupants for Group A-1's, A-3's and A-4's.

Public Comment 2:

Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

903.2.1.6 (IBC [F] 903.2.1.6) Assembly occupancy on roofs. Where an occupied roof has an assembly occupancy with an occupant load exceeding 100, all floors between the occupied roof and the level of exit discharge shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

Exception: Open parking garages of Type I or II construction.

Commenter's Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

The proposed exception for open parking garages is consistent with the existing code requirement exception for open parking garages under Section 903.2.11.3 for "Buildings 55 feet or more in height".

It is becoming more common in the urban renewal areas throughout the US that jurisdictions are asking developers to provide additional recreational and green spaces for its citizens to enjoy within their own communities. Because of the limited space available it is not uncommon for such recreational and green spaces to be provided on the roofs of open parking garages. Based on the existing wording of this new Section (903.2.1.6) of code, these recreational and green spaces greater than 700 sq. ft. (based on 7 sq. ft. net /occupant) or 1500 sq. ft. (based on 15 sq. ft. net /occupant) would now require the open parking garage to be sprinklered. In other words, an open recreational or green space on a roof of an open parking structure that is more than a 26' to 39' square would require the garage to be sprinklered with a dry pipe sprinkler system that is initially a major cost to the project as well as a major monthly and yearly maintenance expense. Such an expense would most likely have an adverse affect on developers doing major city urban renewal projects from agreeing to provide such amenities for the local jurisdiction.

There is considerable supporting data for this proposed exception for open parking garages in the following national publications:

1. 2006 NFPA Fire Data Report, "Structure and Vehicle Fires in General Vehicle Parking Garages"
2. 2008 Parking Consultants Council Fire Safety Committee Report, "Parking Structure Fire Facts"

These fire reports provide the following justifications for support of this public comment:

1. There is an average of only 660 fire/year in **all** types of parking garages in the US. This represents only 0.006% of all the annual fires/year in the US in all occupancy classifications. These fires caused an annual average of under one death, 11 injuries. However, for parking garages constructed of Construction Type I or II, they account for only 200 fire/year with no

fire deaths, and only 2 injuries/year. Therefore, fires in parking garages occur very infrequently, especially for Construction Type I or Type II parking garages.

2. No structural damage occurred in 98.7% of vehicle fires in parking garages.
3. Vehicle fires in parking garages typically do not spread (external spread of vehicle fires occurred in only 7% of the incidents).

Final Hearing Results

F124-13

AMPC1, 2

Code Change No: F128-13

Original Proposal

Section(s): 903.2.9 (IBC [F] 903.2.9), 903.2.9.1 (IBC [F] 903.2.9.1), 903.2.10.1 (IBC [F] 903.2.10.1), 202

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

903.2.9 (IBC [F] 903.2.9) Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group S-1 fire area used for the storage of ~~commercial trucks or buses~~ commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).
5. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

903.2.9.1 (IBC [F] 903.2.9.1) Repair garages. An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406.8 of the International Building Code, as shown:

1. Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m²).
2. Buildings no more than one story above grade plane, with a fire area containing a repair garage exceeding 12,000 square feet (1115 m²).
3. Buildings with repair garages servicing vehicles parked in basements.
4. A Group S-1 fire area used for the repair of ~~commercial trucks or buses~~ commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).

903.2.10.1 (IBC [F] 903.2.10.1) Commercial parking garages. An automatic sprinkler system shall be provided throughout buildings used for storage of ~~commercial trucks or buses~~ commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).

Add new definition as follows:

SECTION 202 GENERAL DEFINITIONS

COMMERCIAL MOTOR VEHICLE. A motor vehicle used to transport passengers or property where the motor vehicle:

1. Has a gross vehicle weight rating of 10,000 pounds or more; or
2. Is designed to transport 16 or more passengers, including the driver.

Reason: The current text is not clear on what constitutes a "commercial" truck or bus. The intent of this proposal is that sprinklers should be installed based on the size of the vehicle. A definition of a commercial motor vehicle is needed. These criteria are from the DOT regulations 49CFR390.5, and correlate with IBC Section 1607.7. (See S70-09/10, AMPC1.)

The fuel load is significantly increased with these larger vehicles. Large commercial vehicles typically have an increased quantity of fuel in the vehicle fuel tanks. The vehicles may have larger amounts of upholstered interior furnishings. Large commercial vehicles may be storing or transporting additional combustibles on-board which also increases the fuel load and fire duration.

Cost Impact: The code change will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal provides a more appropriate term to clarify what is considered “commercial.” The term “Commercial Motor Vehicle” is also defined by the proposal. This will clarify the application of Sections 903.2.9 and 903.2.9.1.

Assembly Action:

None

Final Hearing Results

F128-12

AS

Code Change No: F131-13

Original Proposal

Section(s): 903.2.11.3 (IBC [F] 903.2.11.3)

Proponent: Brad Emerick, Denver Fire Department representing the Fire Marshal's Association of Colorado (FMAC) and the Colorado Chapter of the ICC (CCICC) (brad.emerick@denvergov.org)

Revise as follows:

903.2.11.3 (IBC [F] 903.2.11.3) Buildings 55 feet or more in height. An automatic sprinkler system in accordance with Section 903.3.1.1 shall be installed throughout buildings with a floor level having an occupant load of 30 or more that is located 55 feet (16 764 mm) or more above the lowest level of fire department vehicle access.

Exceptions:

1. Airport control towers.
2. Open parking structures.
3. Occupancies in Group F-2.

Reason: This proposal revises the language to specify a NFPA 13 sprinkler system is required in buildings meeting the height criteria. The proposed change only affects residential buildings on sloping sites where the lowest level of fire department vehicle access is significantly below grade plane. It has no other effect on sprinkler requirements related to the height of a building, namely IBC Section 540.2 which permits NFPA 13R sprinkler systems in residential buildings up to 60 feet in height – measured to the roof from grade plane (vs. lowest level of FD vehicle access).

If the lowest level of fire department vehicle access is at grade plane or on the high-elevation side of a sloping site, and the building height with respect to grade plane is 60 feet, then the highest occupied floor will be 10+ feet below this at a height of 50 feet or less – but below “55 feet to the highest occupied floor” in either case. Per IBC Section 540.2, a 13R sprinkler system is still permitted.

On a sloping site, where the lowest level of fire department vehicle access is on the low-elevation side of the site, firefighters are presented a building face taller in stories and feet than the nominal height of the building. If this face is tall enough that the highest occupied floor is 55 feet above them, the additional protection afforded by an NFPA 13 sprinkler system- especially with combustible construction – is warranted.

Cost Impact: This change will not affect the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

903.2.11.3 (IBC [F] 903.2.11.3) Buildings 55 feet or more in height. An automatic sprinkler system ~~in accordance with Section 903.3.1.1~~ shall be installed throughout buildings that have one or more stories with a floor level having an occupant load of 30 or more ~~that is~~ located 55 feet (16 764 mm) or more above the lowest level of fire department vehicle access, measured to the finished floor.

Exceptions:

1. Airport control towers.
2. Open parking structures.
3. Occupancies in Group F-2.

Committee Reason: This proposal was approved as it helps to clarify how the height of the building is to be measured to determine whether a sprinkler system is required and through the modification the specific requirement for a NFPA 13 system was removed. There are likely very few situations that an NFPA 13R system would be applicable and the justification to restrict the type of sprinkler systems to NFPA 13 was not provided. The modification further clarifies that the measurement is taken to the finished

floor level and not to the ceiling of the story.

Assembly Action:

None

Final Hearing Results

F131-13

AM

Code Change No: F132-13

Original Proposal

Section(s): 903.2.11.3 (IBC [F] 903.2.11.3)

Proponent: Eric R. Rosenbaum, Hughes Associates, Inc. representing the Air Traffic Control Tower Fire Life Safety Task Group (erosenbaum@haifire.com)

Revise as follows:

903.2.11.3 (IBC [F] 903.2.11.3) Buildings 55 feet or more in height. An automatic sprinkler system shall be installed throughout buildings with a floor level having an *occupant load* of 30 or more that is located 55 feet (16 764 mm) or more above the lowest level of fire department vehicle access.

Exceptions:

- ~~1. Airport control towers.~~
- ~~2.1. Open parking structures.~~
- ~~3.2. Occupancies in Group F-2.~~

Reason: The proposed change reflects changes accepted in Section 412.3 of the IBC regarding air traffic control towers. The accepted change in the IBC requires an automatic sprinkler system in all air traffic control towers with an occupiable floor 35 ft or more above the lowest level of fire department vehicle access. This accepted change is more restrictive than current IFC requirements and could cause confusion if left in the IFC. A copy of the accepted change is as follows:

412.3 Airport traffic control towers. The provisions of Sections 412.3.1 through 412.3.11 shall apply to airport traffic control towers occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

412.3.1 Type of construction. Airport traffic control towers shall be constructed to comply with the height limitations of Table 412.3.2.

**TABLE 412.3.2
HEIGHT LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS**

TYPE OF CONSTRUCTION	HEIGHT ^a (feet)
IA	Unlimited
IB	240
IIA	100
IIB	85
IIIA	65

a. Height to be measured from grade plane to cab floor

412.3.2 Stairway Stairways in Airport traffic control towers shall conform to the requirements of Section 1009. Such *stairways* shall be a smokeproof enclosure in accordance with Section 909.20. The stair pressurization alternative in accordance with Section 909.20.5 shall be permitted to be used. *Stairways* shall not be required to extend to the roof as specified in Section 1009.11.

412.3.3 Exit access. From observation levels, airport traffic control towers shall be permitted to have a single means of exit access for a distance of travel not exceeding 100 ft (30 m). This means of egress shall be permitted to include exit access utilizing an unenclosed stair at the observation level.

412.3.4 Single means of egress. Not less than one *exit stairway* shall be permitted for airport traffic controls towers of any height provided that the *occupant load* per floor is not greater than 15 and the area per floor does not exceed 1,500 square feet (140 m²).

412.3.4.1 Arrangement of single means of egress. Airport traffic control towers permitted a single exit and located above another building shall be provided with one of the following:

1. Exit enclosure separated from the other building with no door openings to or from the other building
2. Exit enclosure leading directly to an exit enclosure serving the other building, with walls and door separating the exit enclosures from each other, and another door allowing access to the top floor of the building that provides access to a second exit serving that floor.

412.3.4.2 Interior Finish. Airport traffic control towers permitted a single exit in accordance with Section 412.3.4 shall be restricted to interior wall and ceiling finishes of Class A or Class B.

412.3.5 Automatic fire detection systems. Airport traffic control towers shall be provided with an automatic fire detection system installed in accordance with Section 907.2.

412.3.6 Automatic sprinkler system. Airport traffic control towers shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

412.3.7 Standby power. A standby power system that conforms to Chapter 27 shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:

1. Pressurization equipment, mechanical equipment and lighting.
2. Elevator operating equipment.
3. Fire alarm and smoke detection systems.

412.3.8 Elevator Protection. Wires or cables that provide normal and standby power, control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire-detecting systems to elevators shall be protected by construction having a minimum 1-hour *fire resistance rating* or shall be circuit integrity cable having a minimum 1-hour *fire-resistance rating*.

412.3.9 Accessibility. Airport traffic control towers need not be *accessible* as specified in the provisions of Chapter 11.

Cost Impact: This code change will increase the cost of construction from the current code requirements in some instances; however, reflects current building practices of the FAA.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal correlates revisions made in Group A for air traffic control towers. The deletion of the exception for air traffic control towers from the sprinkler requirement was necessary as they would be required to be sprinklered in Chapter 4 of the IBC.

Assembly Action:

None

Final Hearing Results

F132-12

AS

Code Change No: F133-13

Original Proposal

Section(s): 903.3.1.1 (IBC [F] 903.3.1.1), 903.3.1.1.2 (New) [IBC [F] 903.3.1.1.2]

Proponent: Marshall Klein, International Code Consultants, representing Multi Housing Council

Revise as follows:

903.3.1.1 (IBC [F] 903.3.1.1) NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 except as provided in Sections 903.3.1.1.1 and 903.3.1.1.2.

903.3.1.1.2 (IBC [F] 903.3.1.1.2) Bathrooms. In Group R occupancies, other than Group R residential care facilities, sprinklers shall not be required in bathrooms that do not exceed 55 square feet in area and are located within individual dwelling units or sleeping units, provided that walls and ceilings, including the walls and ceilings behind any shower enclosure or tub, are of noncombustible or limited-combustible materials with a 15-minute thermal barrier rating.

Reason: This change is necessary to reinstate an exception that has been in existence since 1976 but was nevertheless deleted from the 2013 edition of NFPA 13 with no technical justification. Because the 2015 I-codes will reference the 2013 edition of NFPA 13, it is necessary and appropriate for the IBC and IFC to reverse NFPA's unsupported action on this issue.

Although reinstating the small bathroom exception will have a limited impact on new construction because many bathrooms exceed the 55 sq. ft. area limit in the exception to accommodate wheelchair access, the more important consequence will be removing an unnecessary cost increase for building owners who choose to retrofit existing properties with small bathrooms that were built before it was common to provide wheelchair access. Codes and standards should not erect any unnecessary barriers to retrofitting sprinklers into existing properties, such as existing high-rise buildings.

Background: In the 1976 edition of the Life Safety Code, to encourage cost effective fire protection systems for apartment buildings, NFPA 101 Section 11-3.8.3.4.1 provided an exception to permit bathrooms that did not exceed 55 sq. ft within individual dwelling units to omit sprinklers when the apartment building was sprinklered in accordance with NFPA 13. The basis of the 55 sq. ft. area is that this area accommodates a "typical" small bathroom that contains a standard tub, a toilet and a sink...nothing more. This exception was later duplicated from NFPA 101 into the 1991 edition of NFPA 13 with the understanding that the next edition of NFPA 101 (1994) could delete the exception since NFPA 13 would have it covered. NFPA 101-1994 then, as planned, deleted the exception.

The situation remained "status quo" until the cycle that produced the 2010 edition of NFPA 13. A proposal to delete the bathroom exception for apartments was initially rejected by the NFPA 13 Committee during the ROP process (Code Proposal 13-202 Log #79) with the Committee Statement for rejection as "No technical data was provided supporting this change". During the ROC process, a public comment (Comment 13-141 Log #235) was submitted by the National Fire Sprinkler Association (NFSA), and the NFPA 13 Committee reversed itself by accepting the Comment, even though no new technical information had been provided. Nevertheless, the NFPA membership rejected this revision at NFPA's annual conference, and the 2010 edition of NFPA 13 retained the exception.

During the 2013 edition cycle for NFPA 13, the issue was raised again, and this time, still with no technical justification, NFPA accepted the change. As a result, NFPA 13-2013 (Section 8.15.8.1.1) only allows omission of sprinklers from in bathrooms in hotels and motels, not apartments.

The history of apartment unit bathroom fires is statistically minimal. According to the recent NFPA Home Structure Fire Report, January 2009, Table 9B, "Reported Apartment Structure Fires by Area of Origin 2003-2006 Annual Averages", out of 113,000 fires/year, only 1600 (1%) are in bathrooms. Given that we have more than 35 years of experience with the bathroom sprinkler exception being in place (since it was put into NFPA 101 in 1976), one would certainly expect anecdotal or statistical experience to indicate the existence of a problem, if there were one. On the contrary, apartments have consistently rank at the top of the list with respect to sprinkler reliability and performance statistics, and no statistical (or other) evidence was presented to or by the NFPA 13 committee to justify deletion of the bathroom sprinkler exception for apartments.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

903.3.1.1 (IBC [F] 903.3.1.1) NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 except as provided in Sections 903.3.1.1.1 and 903.3.1.1.2.

903.3.1.1.2 (IBC [F] 903.3.1.1.2) Bathrooms. In Group R occupancies, other than ~~Group R-4 occupancies~~ ~~Group R residential care facilities~~, sprinklers shall not be required in bathrooms that do not exceed 55 square feet in area and are located within individual dwelling units or sleeping units, provided that walls and ceilings, including the walls and ceilings behind any shower enclosure or tub, are of noncombustible or limited-combustible materials with a 15-minute thermal barrier rating.

Committee Reason: The exception for bathrooms has been deleted in the 2013 edition of NFPA 13 with no technical justification. Therefore, to retain this exception for use with the IFC and IBC it is necessary to add a new section 903.3.1.1.2. In addition it was a concern that this particular allowance should be within the IBC and IFC as often the architects miss the 15 minute thermal barrier requirement that NFPA 13 requires. The modification simply replaces "Group R residential care facility" with the proper I-Code occupancy terminology Group R-4.

Assembly Action:

None

Final Hearing Results

F133-13

AM

Code Change No: F134-13

Original Proposal

Section(s): 903.3.1.2 (IBC [F] 903.3.1.2)

Proponent: Brad Emerick, Denver Fire Department representing the Fire Marshal's Association of Colorado (FMAC) and the Colorado Chapter of the ICC (CCICC) (brad.emerick@denvergov.org)

Add new text as follows:

903.3.1.2 (IBC [F] 903.3.1.2) NFPA 13R sprinkler systems. *Automatic sprinkler systems* in Group R occupancies up to and including four stories and 60 feet in height above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R.

Reason: There has been confusion as to where you measure the four story limitation for NFPA 13R sprinkler systems. This proposal clarifies the intent of NFPA 13R limitations by using the correct language for building height and correlating with the NFPA 13R committee.

There is a breakpoint in the codes for building heights between 30 feet above the lowest level of fire department access and four stories. This is the point where stair enclosures have to be 2-hour rated, where at least one stair is required to extend to the roof, when standpipes are required, where emergency escape and rescue windows are no longer required, etc. This height correlates with the upper limit at which fire departments can conduct operations using ground ladders. Hand-carried ladders can typically only reach 30 to 40 feet above the grade from where they're set. A higher degree of safety has historically been required in buildings taller than this because an offensive attack will include – maybe exclusively – internal operations.

In residential buildings, this is also the threshold where sprinkler systems are required to be more robust; i.e., where NFPA 13 systems are required.

With the relaxation in requirements for residential pedestal buildings leading to the consolidation of combustible framing (and the contents) in the highest stories, it makes no sense to also relax the sprinklering requirements for that portion of the building. More stories means more time required for search and rescue. Combustible construction – especially if the attics and interstitial floor/ceiling spaces are not protected, means less time is provided.

Cost Impact: This change will not affect the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

903.3.1.2 (IBC [F] 903.3.1.2) NFPA 13R sprinkler systems. *Automatic sprinkler systems* in Group R occupancies up to and including four stories and 60 feet in height above grade plane in buildings not exceeding 60 feet in height above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R.

Committee Reason: The proposal correlates the limitations on height of the installation of a NFPA 13R sprinkler system with the scope of NFPA 13R. The modification corrects the proposed language to more closely correlate with NFPA 13R. More specifically, as originally written it appeared as if the limitation of 4 stories was related to grade plane but only the building height in feet is intended to relate to grade plane.

Assembly Action:

None

Final Hearing Results

F134-13

AM

Code Change No: F135-13

Original Proposal

Section(s): 903.3.1.2 (IBC [F] 903.3.1.2)

Proponent: Tim Pate, City and County of Broomfield, CO, representing Colorado Chapter Code Change Committee

Revise as follows:

903.3.1.2 (IBC [F] 903.3.1.2) NFPA 13R sprinkler systems. Automatic sprinkler systems in Group R occupancies up to and including four stories ~~in height~~ above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R.

Exception: The number of stories of Group R occupancies constructed in accordance with Section 510.2 and 510.4 of the International Building Code shall be measured from the horizontal assembly creating separate buildings.

Reason: There has been confusion as to where you measure the four story limitation for NFPA 13R sprinkler systems. This proposal clarifies the intent of NFPA 13R limitations by using the correct language for building height and addressing the use of these systems in podium buildings.

Cost Impact: This change will not affect the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

903.3.1.2 (IBC [F] 903.3.1.2) NFPA 13R sprinkler systems. Automatic sprinkler systems in Group R occupancies up to and including four stories ~~in height above grade plane~~ shall be permitted to be installed throughout in accordance with NFPA 13R.

Exception: The number of stories of Group R occupancies constructed in accordance with Section 510.2 and 510.4 of the International Building Code shall be measured from the horizontal assembly creating separate buildings.

Committee Reason: This proposal was approved as it addresses the scenario where NFPA 13R systems are desired to be installed on residential buildings using the podium building allowance in Section 510.2 and 510.4 of the IBC. The modification clarifies that the number of stories in height is not related to grade plane. In addition the exception was revised to be part of the main section as the provisions of the exception are merely clarification of the application of the provisions in Section 510.2 and 510.4. The committee made it clear that it was not their intention to override the action taken on F134-13.

Assembly Action:

None

Final Hearing Results

F135-13

AM

Code Change No: **F136-13**

Original Proposal

Section(s): 903.3.1.2.1 (IBC [F] 903.3.1.2.1)

Proponent: Jeffrey M. Hugo, CBO, representing the National Fire Sprinkler Association (hugo@nfsa.org)

Revise as follows:

903.3.1.2.1 (IBC [F] 903.3.1.2.1) Balconies and decks. Sprinkler protection shall be provided for exterior balconies, decks and ground floor patios of *dwelling units* and *sleeping units* where the building is of Type V construction, provided there is a roof or deck above. Sidewall sprinklers that are used to protect such areas shall be permitted to be located such that their deflectors are within 1 inch (25 mm) to 6 inches (152 mm) below the structural members and a maximum distance of 14 inches (356 mm) below the deck of the exterior balconies and decks that are constructed of open wood joist construction.

Reason: According to the current text, a balcony or deck from a sleeping unit would be exempt from fire sprinklers. Sleeping units are common for dormitories, hotel rooms, assisted living, etc. and we do not believe this is the intent of the code to forego protection of these balconies and decks because they lack sanitation or cooking facilities.

DWELLING UNIT. A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

SLEEPING UNIT. A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a *dwelling unit* are not sleeping units.

Cost Impact: Will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The revision was necessary as both dwelling units and sleeping units should be provided with sprinkler protection on exterior balconies, decks and ground floor patios when a NFPA 13R system is installed.

Assembly Action:

None

Final Hearing Results

F136-12

AS

Code Change No: F137-13

Original Proposal

Section(s): 202, 903.3.1.2.2 (New) [IBC [F] 903.3.1.2.2 (New)], 1104.21

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Add new text as follows:

SECTION 202 GENERAL DEFINITIONS

OPEN-ENDED CORRIDOR. An interior corridor that is open on each end, and connects to an exterior *stairway or ramp* at each end with no intervening doors or separation from the corridor.

Revise as follows:

903.3.1.2.2 (IBC [F] 903.3.1.2.2) Open-ended Corridors. Sprinkler protection shall be provided in *open-ended corridors* and associated *exterior stairways* and *ramps* as specified in Section 1026.6, exception 4.

1104.21 Exterior stairway protection. Exterior *exit stairs* shall be separated from the interior of the building as required in Section 1026. Openings shall be limited to those necessary for egress from normally occupied spaces.

Exceptions:

1 through 3 (No change to current text)

4. Separation from the interior *open-ended corridor* of the building is not required for *exterior stairways* connected to *open-ended corridors*, provided that:
 - 4.1 ~~The building, including corridors, and stairs, is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.~~
 - 4.2 ~~4.1~~ The *open-ended corridors* comply with Section 1018.
 - 4.3 ~~4.2~~ The *open-ended corridors* are connected on each end to an *exterior exit stairway* complying with Section 1026.
 - 4.4 ~~4.3~~ At any location in an *open-ended corridor* where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 m²) or an *exterior stairway or ramp* shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

Reason: This is a correlation with code change E153-12 which was approved last cycle. New Section 903.3.1.2.2 is to clarify that when using a 13R system for this provision, extra heads are required in the breezeway.

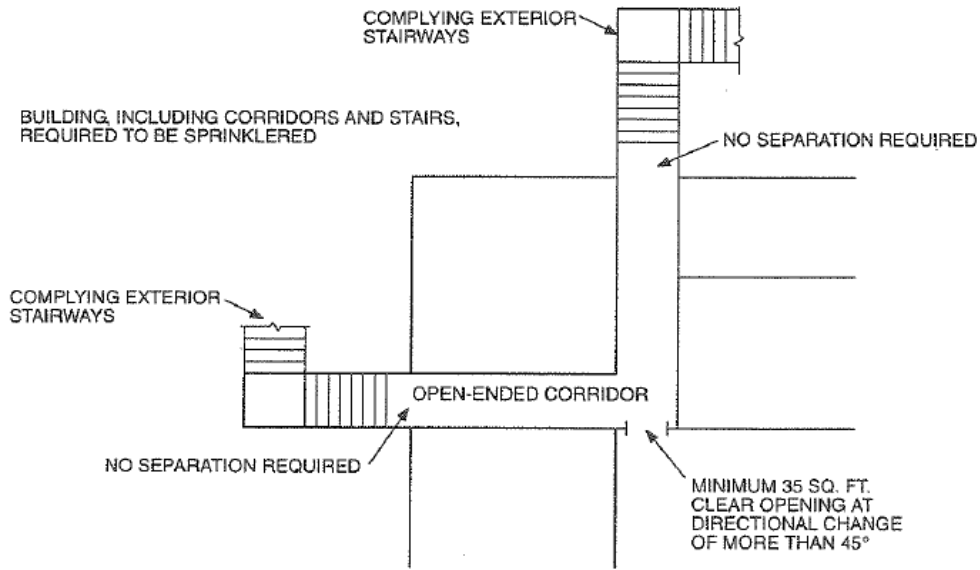
The Reason statement for E153-12 is as follows:

Reason: Breezeway stairs is what this section is talking about. Whether straight through the building with a stair on each side, or taking a turn somewhere during its path through the building with a stair on either end, it is still a breezeway with exterior stairs. This point is not clear in the current language.

There is this opinion that an open breezeway stairs are allowed by basic code. They are not. 2012 IBC Section 1026.6 states that exterior stairs must be separated from the interior of the building. The breezeway (interior corridor) is part of the interior of the building. I have conferred with the original proponent of this code change many times and confirmed that the intent was to allow the removal of the wall and door that separates the stair from the corridor, creating a breezeway.

So, if the walls on each side of the stair have to be protected, how can a large opening where the door occurs be removed and have an unprotected connection to the interior corridor.

The 2000 IBC Handbook, provided an accurate depiction of what this code change applied to as follows:



OPEN-ENDED CORRIDOR

FIGURE 1005-10

Here is the original code change that inserted the provision. Notice the statement "The purpose of this analysis was to determine if an equivalent level of life safety could be achieved by the design of an open breezeway in comparison to an enclosed corridor or balcony for these multifamily buildings."

technical change.

Public Hearing: Committee: AS AM D
Assembly: ASF DF

1008.7-2

Proponent: Ron Nickson, National Multi Housing Council/National Apartment Association

1. Revise as follows:

1008.7 Exterior exit stairways. Exterior exit stairways that conform to the requirements for interior exit stairways except for the enclosure requirements, are permitted as an element of a required means of egress for buildings not exceeding six stories or 75 feet (22.9 m) in height for occupancies other than Group I-2.

An exterior exit stairway that serves as an exit component shall be open to the outside on at least one side except for required structural columns beams, and open-type handrails and guards. A minimum of 35 square feet (3.22 m²) of aggregate open area shall be provided within the horizontal projection of each floor to ceiling level at each exterior stair or within the horizontal projection of the floor to ceiling level of the stairway landing that is located no more than 1/2 level above the corridor floor.

The adjoining open areas shall be either yards, courts or public ways; the remaining sides are permitted to be enclosed by the exterior walls of the building. Any stairway not meeting the definition of an exterior stairway shall comply with the requirements for interior stairways.

Exterior stairways shall be located in accordance with Section 1009.1.

2. Revise the definition of Stairway, Exterior as follows:

SECTION 1002 DEFINITIONS

STAIRWAY, EXTERIOR A stairway that is open on at least one side, except for required structural columns, beams, and open-type handrails, and guards. The adjoining open areas shall be either yards, courts or public ways; the other sides of the exterior stairway need not be open.

Reason: To establish minimum requirements for open area on exterior exit stairways and permit the use of enclosed guards and handrail systems.

The 35 sq. ft. of open area is based on computer fire studies of six multifamily projects in Virginia containing more than 2000 individual dwelling units. The analysis was completed by the Sullivan Code Group using HAZARD I, a fire hazard assessment method developed by the

United States National Institute of Standards and Technology. The procedures used by the Sullivan Code Group were reviewed by Professor Jonathan Barnett, Ph.D., Associate Professor, Center for Firesafety Studies, Worcester Polytechnic Institute who checked for conformity with the fire modeling expectations and limitations.

The findings, which are based on the provisions in the 1996 BOCA National Building Code, apply equally to the provisions in the IBC. The results, summarized by the Sullivan Code Group in the following Executive Summary, for the six buildings included in the studies were very similar. The buildings studied were multifamily apartments with various configurations of corridors connected to exterior open stairs.

EXECUTIVE SUMMARY

The purpose of this analysis was to determine if an equivalent level of life safety could be achieved by the design of an open breezeway in comparison to an enclosed corridor or a balcony for these multifamily buildings.

The multifamily buildings were analyzed using engineering judgement, referenced literature, the suite of computer programs called FASTlite, and CFAST and, computer-based fire models developed by the United States National Institute of Standards and Technology, Building and Fire Research Laboratory.

The reasonable worst case fire scenario modeled was an arson fire on the breezeway. By assuming that the design fire is a fast growing arson fire, this analysis goes beyond the requirements of the Building Code which does not consider arson fire situations in determining building fire safety regulations. Therefore, this analysis is evaluating the building under more adverse conditions than are addressed in the Building Code. The results of the analysis are:

1. For the life safety of the building occupants on the floor of fire origin, the open breezeway configuration is superior to the enclosed corridor configuration.
2. For the life safety of the building occupants on floors other than the floor of fire origin, the open breezeway configuration meets the intent of the egress provisions in the BOCA Code. With the open breezeway configuration, at least one stairwell should maintain tenable egress conditions depending on the wind direction. In all cases analyzed, one stairwell was capable of handling the occupant load. Therefore, the intent of the code is met.
3. Smoke conditions on floors other than the floor of fire origin will remain safe for a suitable period of time to allow occupant egress with the open breezeway configuration, even without sprinklers. If there is a wind, the tenability in the open breezeways is improved.
4. With the enclosed corridor configuration, sprinkler activation is predicted to occur after the time at which the upper smoke layer reaches a level that could impede egress. With the open breezeway configuration, sprinkler activation is predicted to occur prior to the time at which the upper smoke layer reaches a level that could impede egress.
5. The results of this analysis have demonstrated that an open breezeway protected by quick response automatic sprinklers provides occupant egress conditions which are better than code-complying balcony designs. Therefore an open breezeway protected by quick response sprinklers, as designed for this project, should be regulated by the same requirements as the open balcony which does not require a fire resistance rated floor when standard response automatic sprinklers are present. The design of the open breezeway provides a level of life safety equivalent or superior to that required by the BOCA Code Sections 106.2 and 106.4.

Copies of the Fire Studies are submitted for reference (see NMHC/NAA proposal for Section 1004.7). Additional copies are available from the proponent.

Public Hearing: Committee: AS AM D
Assembly: ASF DF

In the 09/10 cycle, code change E134-09/10 made it clear that this exception only applied to the wall and door that would normally separate an exterior stair from the interior corridor. This exception does not apply to other separation requirements on the sides of the stairs.

The specific section reasoning for this code change is as follows:

Section 202, provide a definition of an open-corridor. Hopefully this will expand on code change E134-09/10 to clarify that this provision is only to eliminate the separation required between the stair and the interior corridor. Not the units on either side.

Section 1026.6, expanding the same concept, adding clarity.

Section 903.3.1.2.2, providing an explicit requirement that sprinkler protection must be provided in this open-ended corridor when using a residential system. As with Section 903.3.1.2.1, this protection is above the requirements of a standard 13R system. If not checked in the design, these heads will not be installed. As such, the open-ended corridor will not be in compliance with code.

Section 1104.21, deletes the sprinkler protection requirement for existing buildings. Once understood that in order to have breezeway stairs, the building, the breezeway and associated stairs must be sprinklered, this provision is actually a retroactive sprinkler provision for all existing buildings with breezeway stairs.

If not sprinklered, in order to keep the breezeway stairs, the building and corridor must be sprinklered. If already sprinklered with a 13R, retrofit sprinklers in the corridor must be installed.

Cost Impact: Since this is correlation between the IFC and IBC, no extra construction cost is expected. And, removing the retroactive implication to existing non-sprinklered breezeways, or 13R sprinklered breezeways without breezeway sprinklers, will reduce costs.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved to correlate with the revisions made in Group A through code change E153-12. The retroactive sprinkler requirement found in Chapter 11 exception 4 was felt to be overly restrictive and therefore was appropriate to delete.

Assembly Action:

None

Final Hearing Results

F137-12

AS

Code Change No: F138-13

Original Proposal

Section(s): 903.3, 903.3.8 (New), 903.4 (IBC [F] 903.4), 903.3.5.1 (IBC [F] 903.3.5.1), 903.3.5.2 (IBC [F] 903.3.5.2)

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

903.3 Installation requirements. *Automatic sprinkler systems* shall be designed and installed in accordance with Sections 903.3.1 through 903.3.87.

903.3.5.1.1 Limited area sprinkler systems.

~~Limited area sprinkler systems serving fewer than 20 sprinklers on any single connection are permitted to be connected to the domestic service where a wet automatic standpipe is not available. Limited area sprinkler systems connected to domestic water supplies shall comply with each of the following requirements:~~

- ~~1. Valves shall not be installed between the domestic water riser control valve and the sprinklers.~~

~~**Exception:** An approved indicating control valve supervised in the open position in accordance with Section 903.4.~~

- ~~2. The domestic service shall be capable of supplying the simultaneous domestic demand and the sprinkler demand required to be hydraulically calculated by NFPA 13, NFPA 13D or NFPA 13R.~~

903.3.5.1- 903.3.5.2 (IBC [F] 903.3.5.1- 903.3.5.2) Residential combination services. A single combination water supply shall be allowed provided that the domestic demand is added to the sprinkler demand as required by NFPA 13R.

903.3.8 (IBC [F] 903.3.8) Limited area sprinkler systems. Limited area sprinkler systems shall be in accordance with the standards listed in Section 903.3.1 except as provided in Sections 903.3.8.1 through 903.3.8.5.

903.3.8.1 Number of sprinklers. Limited area sprinkler systems shall not exceed 6 sprinklers in any single fire area.

903.3.8.2 Occupancy hazard classification. Only areas classified by NFPA 13 as Light Hazard or Ordinary Hazard Group 1 shall be permitted to be protected by limited area sprinkler systems.

903.3.8.3 Piping arrangement. Where a limited area sprinkler system is installed in a building with an automatic-wet standpipe system, sprinklers shall be supplied by the standpipe system. Where a limited area sprinkler system is installed in a building without a wet-pipe automatic standpipe system, water shall be permitted to be supplied by the plumbing system provided that the plumbing system is capable of simultaneously supplying domestic and sprinkler demands.

903.3.8.4 Supervision. Control valves shall not be installed between the water supply and sprinklers unless the valves are of an approved indicating type that are supervised or secured in the open position.

903.3.8.5 Calculations. Hydraulic calculations in accordance with NFPA 13 shall be provided to demonstrate that the available water flow and pressure are adequate to supply all sprinklers installed in any single fire area with discharge densities corresponding to the hazard classification.

903.3.5.2 903.3.5.3 (IBC [F] 903.3.5.2 903.3.5.3) Secondary water supply. An automatic secondary on-site water supply having a capacity not less than the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings in Seismic Design Category C, D, E or F as determined by the *International Building Code*. An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the *automatic sprinkler system*. The secondary water supply shall have a duration of not less than 30 minutes as determined by the occupancy hazard classification in accordance with NFPA 13.

Exception: Existing buildings.

903.4 (IBC [F] 903.4) Sprinkler system monitoring and alarms. All valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures, and water-flow switches on all sprinkler systems shall be electrically supervised.

Exceptions:

1. Automatic sprinkler systems protecting one- and two-family dwellings.
2. Limited area systems ~~servicing fewer than 20 sprinklers in accordance with Section 903.3.8.~~
3. through 7. (No change to current text)

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This code section as it exists allows the protection of large areas by a system of automatic sprinklers that is not afforded the same level of protection required by NFPA standards 13, 13R and 25. Some of these include waterflow alarms, components listed for fire protection systems, fire department connections, testing and maintenance. This code change would reduce the number of sprinklers that may be supplied from a building plumbing system to six in a single fire area to eliminate the potential for multiple limited area sprinkler systems and combined water supply demands necessary to control a single fire event.

It also limits the six sprinklers to a discharge density of Light Hazard or Ordinary Hazard Group I. The basis for these values provides coordination with longstanding requirements in NFPA 101, Life Safety Code, Section 9.7.1.2, which limits the number and discharge density of automatic sprinklers supplied from a plumbing system. Such a limit is reasonable in that it can allow for a pipe schedule design if the plumbing system is capable of satisfying the NFPA 13 pipe diameter requirements.

Cost Impact: This code change would increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved as it is more reasonable to allow limited area sprinkler systems for 6 sprinklers versus 20. There was some concern that now that there are more controls associated with such systems that the number should be revised back to 20.

Assembly Action:

None

Final Hearing Results

F138-12

AS

Code Change No: **F139-13**

Original Proposal

Section(s): 903.3.5.2 (IBC [F] 903.3.5.2); IBC [F] 403.3

Proponent: Jeffrey M. Hugo, CBO, representing the National Fire Sprinkler Association (hugo@nfsa.org)

Revise as follows:

IBC [F] 403.3 Automatic sprinkler system. Buildings and structures shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and a secondary water supply where required by Section ~~903.3.5.2~~ 403.3.3.

~~903.3.5.2 (IBC [F] 903.3.5.2)~~ **IBC [F]403.3.3 Secondary water supply.** An automatic secondary on-site water supply having a capacity not less than the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings assigned to Seismic Design Category C, D, E or F as determined by the International Building Code. An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the automatic sprinkler system. The secondary water supply shall have a duration of not less than 30 minutes

IBC [F] ~~403.3.3~~ 403.3.4 Fire pump room. Fire pumps shall be located in rooms protected in accordance with Section 913.2.1.

Reason: Secondary water supply for high rises is in Chapter 9, whereas the requirements for high rises are in Section 403 of the *International Building Code*. Since this secondary water supply requirement only applies to high rises it is more appropriate for designers and users in Section 403.3.3 of the *International Building Code*.

Cost Impact: Will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The secondary water supply requirements are very specific to high rise buildings and are more appropriately located within Section 403.3 of the IBC.

Assembly Action:

None

Public Comments

Public Comment:

Jeffrey M. Hugo, CBO, representing National Fire Sprinkler Association, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

IBC [F] 403.3 Automatic sprinkler system. Buildings and structures shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and a secondary water supply where required by Section 403.3.3.

IBC [F]403.3.3.Secondary water supply. An automatic secondary on-site water supply having a capacity not less than the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings assigned

to Seismic Design Category C, D, E or F as determined by the International Building Code. An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the automatic sprinkler system. The secondary water supply shall have a duration of not less than 30 minutes

IBC [F] 403.3.4 Fire pump room. Fire pumps shall be located in rooms protected in accordance with Section 913.2.1.

IFC 914.3.3 Secondary water supply. An automatic secondary on-site water supply having a capacity not less than the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings assigned to Seismic Design Category C, D, E or F as determined by the *International Building Code*. An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the *automatic sprinkler system*. The secondary water supply shall have a duration of not less than 30 minutes as determined by the occupancy hazard classification in accordance with NFPA 13.

Exception: Existing buildings.

Commenter's Reason: The proposal in the Committee Action Hearings did not make the change in the IFC. This public comment moves 903.3.5.2 of the IFC to 914.3.3. Approval of this public comment would make the IBC and the IFC the same in regards to secondary water for high rise buildings.

Final Hearing Results

F139-13

AMPC

Code Change No: **F140-13**

Original Proposal

Section(s): 903.3.7

Proponent: Brad Emerick, Denver Fire Department representing the Fire Marshal's Association of Colorado (FMAC) and the Colorado Chapter of the ICC (CCICC) (brad.emerick@denvergov.org)

Revise text as follows:

903.3.7 Fire department connections. ~~The location of fire department connections shall be approved by the fire code official~~ installed in accordance with Section 912.

Reason: Section 912 provides the more comprehensive set of requirements for FDCs and except for "fire code official" vs. "fire chief", Section 903.3.7 is redundant with Section 912.2. Pointing to the comprehensive scope contained in Section 912 reduces the opportunity for any of its requirements to be overlooked.

Cost Impact: This change will not affect the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The cross reference to Section 912 for fire department connections (FDC) was a more comprehensive reference than the current text that simply states that the FDCs be approved by the fire code official.

Assembly Action:

None

Final Hearing Results

F140-12

AS

Code Change No: **F141-13**

Original Proposal

Section(s): 903.3.7, 905.1 (IBC [F] 905.1), 905.2 (IBC [F] 905.2), 912.1, 912.3 (IBC [F] 912.3); IBC [F] 903.3.7 (New), IBC [F] 912.1

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

903.3.7 Fire department connections. ~~The location of fire department connections for automatic fire sprinkler systems shall be approved by the fire code official in accordance with Section 912.~~

905.1 (IBC [F] 905.1) General. Standpipe systems shall be provided in new buildings and structures in accordance with ~~this section~~ Sections 905.2 through 905.10. ~~Fire hose threads used in connection with standpipe systems shall be approved and shall be compatible with fire department hose threads. The location of fire department hose connections shall be approved.~~ In buildings used for high-piled combustible storage, fire protection shall be in accordance with Chapter 32.

905.2 (IBC [F] 905.2) Installation standard. Standpipe systems shall be installed in accordance with this section and NFPA 14. Fire department connections for standpipe systems shall be in accordance with Section 912.

912.1 Installation. Fire department connections shall be installed in accordance with the NFPA standard applicable to the system design and shall comply with Sections 912.2 through ~~912.6~~ 912.7.

912.3 (IBC [F] 912.3) Fire hose threads. Fire hose threads used in connection with standpipe systems shall be approved and shall be compatible with fire department hose threads.

IBC [F] 903.3.7 Fire department connections. Fire department connections for automatic fire sprinkler systems shall be in accordance with Section 912.

IBC [F] 912.1 Installation. Fire department connections shall be installed in accordance with the NFPA standard applicable to the system design and shall comply with Sections 912.2 through ~~912.5~~ 912.6.

(Renumber subsequent sections)

Reason: Currently, there are several sections in the code which contain requirements for fire department connections. This proposal will correlate those requirements and place them into Section 912 where the bulk of the requirements exist. This proposal then either deletes the requirements found elsewhere, as in Section 905.1; or it makes reference to the requirements in Section 912. Section 903.3.7 is shown as an addition to the IBC, since the section is in the IFC but it is not currently in the IBC. There is no change in the requirements currently found in the code.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved as it places the details about fire department connections for both sprinklers and standpipes in a more appropriate location. Section 912 focuses upon the details of fire department connections.

Assembly Action:

None

Final Hearing Results

F141-12

AS

Code Change No: F144-13

Original Proposal

Section(s): 904.2 (IBC [F] 904.2), 904.2.1 (New) [IBC [F] 904.2.1 (New)], 904.12 (New) [IBC [F] 904.12 (New)], 202 (IBC 202), 902.1 (IBC [F] 902.1), Chapter 80 (IBC Chapter 35)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

904.2 (IBC [F] 904.2) Where ~~required~~ permitted. Automatic fire-extinguishing systems installed as an alternative to the required *automatic sprinkler systems* of Section 903 shall be *approved* by the fire code official. ~~Automatic fire-extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions allowed by other requirements of this code.~~

904.2.1 (IBC [F] 904.2.1) Restriction on using automatic sprinkler system exceptions or reductions. Automatic fire-extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions allowed for *automatic sprinkler systems* or by other requirements of this code.

~~904.2.1~~ **904.2.2 (IBC [F] 904.2.2) Commercial hoods and duct systems.** *(no change)*

904.12 (IBC [F] 904.12) Automatic Water Mist Systems. Automatic water mist systems shall be permitted in applications that are consistent with the applicable listing or approvals and shall comply with Sections 904.12.1 through 904.12.3.

904.12.1 (IBC [F] 904.12.1) Design and Installation Requirements. Automatic water mist systems shall be designed and installed in accordance with Sections 904.12.1.1 through 904.12.1.4.

904.12.1.1 (IBC [F] 904.12.1.1) General. Automatic water mist systems shall be designed and installed in accordance with NFPA 750 and the manufacturer's instructions.

904.12.1.2 (IBC [F] 904.12.1.2) Actuation. Automatic water mist systems shall be automatically actuated.

904.12.1.3 (IBC [F] 904.12.1.3) Water supplies. Connections to a potable water supply shall be protected against backflow in accordance with the International Plumbing Code.

904.12.1.4 (IBC [F] 904.12.1.4) Secondary water supply. Where a secondary water supply is required for an *automatic sprinkler system*, an *automatic water mist system* shall be provided with an approved secondary water supply.

904.12.2 (IBC [F] 904.12.2) Water mist system supervision and alarms. Supervision and alarms shall be provided as required for *automatic sprinkler systems* in accordance with Section 903.4.

904.12.2.1 (IBC [F] 904.12.2.1) Monitoring. Monitoring shall be provided as required for *automatic sprinkler systems* in accordance with Section 903.4.1.

904.12.2.2 (IBC [F] 904.12.2.2) Alarms. Alarms shall be provided as required for *automatic sprinkler systems* in accordance with Section 903.4.2.

904.12.2.3 (IBC [F] 904.12.2.3) Floor control valves. Floor control valves shall be provided as required for *automatic sprinkler systems* in accordance with 903.4.3.

904.12.3 (IBC [F] 904.12.3) Testing and maintenance. *Automatic water mist systems* shall be tested and maintained in accordance with the International Fire Code.

Add new definition as follows:

SECTION 202 GENERAL DEFINITIONS

AUTOMATIC WATER MIST SYSTEM. A system consisting of a water supply, a pressure source, and a distribution piping system with attached nozzles, which, at or above a minimum operating pressure, defined by its listing, discharges water in fine droplets meeting the requirements of NFPA 750 for the purpose of the control, suppression or extinguishment of a fire. Such systems include wet-pipe, dry-pipe and pre-action types. The systems are designed as engineered, pre-engineered, local-application or total flooding systems.

902.1 Definitions. The following terms are defined in Chapter 2:

AUTOMATIC WATER MIST SYSTEM

Add new standard to Chapter 80 as follows:

NFPA

750-14 Standard on Water Mist Fire Protection Systems

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal recognizes water mist as an alternative, in some applications, to automatic fire sprinkler systems. However, no exceptions, reductions, or "trade-offs" for water mist systems are granted or permitted by this proposal, as automatic water mist systems are not considered equivalent to automatic sprinkler systems. Automatic water mist systems have been approved by FM Global for occupancies similar to Light Hazard (as defined by NFPA 13) and by UL for occupancies similar to Ordinary Hazard Group I (as defined by NFPA 13). These listings permit automatic water mist systems to be installed as the primary suppression system in a variety of occupancy classifications.

In addition to the above text in Section 904, a definition and the installation standard NFPA 750 *Standard on Water Mist Fire Protection Systems* is added as a referenced standard.

Cost Impact: This code change will not increase the cost of construction

Analysis: A review of the standard proposed for inclusion in the code, NFPA 750-14, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of NFPA 750-14 relative to CP#28, Section 3.6, please visit: <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved as it was felt that water mist systems need to be officially recognized by the IFC and IBC. This was felt to be a good first step for such systems. It was suggested that perhaps water mist systems should be located outside Section 904 within their own section.

Assembly Action:

None

Final Hearing Results

F144-12

AS

Code Change No: F146-13

Original Proposal

Section(s): 904.12 (IBC [F] 904.12) (New), 904.12.1 (IBC [F] 904.12.1 (New)), 904.12.2 (IBC [F] 904.12.2 (New)), Table 906.1 (IBC [F] Table 906.1), Chapter 80 (IBC Chapter 35)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee
(cbaldassarra@RJAGroup.com)

Revise as follows:

904.12 (IBC [F] 904.12) Domestic cooking system in Group I-2 Condition 1. In Group I-2 Condition 1 occupancies where cooking facilities are installed in accordance with Section 407.2.5 of the *International Building Code*, the domestic cooking hood provided over the cooktop or range shall be equipped with an automatic fire-extinguishing system of a type recognized for protection of domestic cooking equipment. Pre-engineered automatic extinguishing systems shall be tested in accordance with UL 300A and listed and labeled for the intended application. The system shall be installed in accordance with this code, its listing and the manufacturer's instructions.

904.12.1 (IBC [F] 904.12.1) Manual system operation and interconnection. A manual actuation device for the hood suppression system shall be installed in accordance with Section 904.11.1 and 904.11.2

904.12.2 (IBC [F] 904.12.2) Portable fire extinguishers for domestic cooking equipment in Group I-2 Condition 1. A portable fire extinguisher complying with Section 906 shall be installed within 30 feet (9144 mm) travel distance of domestic cooking appliances.

**TABLE 906.1 (IBC [F] TABLE 906.1)
ADDITIONAL REQUIRED PORTABLE FIRE EXTINGUISHERS**

Section	Subject
904.12.2 (IBC 407.2.5)	Domestic cooking hoods in Group I-2 Condition 1 occupancies

(Portions of table not shown remain unchanged)

Add new standard to Chapter 80 (IBC Chapter 35) as follows:

UL

300A-2006 Outline of Investigation for Extinguishing System Units for Residential Range Top Cooking Surfaces

Reason: M76 clarified requirements for domestic appliance located in facilities such as nursing homes and assisted living where they are only used for domestic (not commercial) cooking. G65 requires a range hood with a UL300A protection system in a Group I-2 Condition 1 (nursing home). The purpose of this change is for the standard to be required in the Fire Code. The requirements follow what passed in G65 in Items 6, 7 and 9.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Analysis: The standard proposed for inclusion in the code, UL 300A, was accepted as a referenced standard in the IBC by approval of Group A code change G65-12 (AMPC).

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal similar to F145-13 adds UL300A to the IFC and IBC but is more specific to the application to nursing homes. This correlates with actions taken in Group A that allow these domestic cooking settings within nursing homes.

Assembly Action:

None

Final Hearing Results

F146-12

AS

Code Change No: F148-13

Original Proposal

Section(s): 905.4

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Revise as follows:

905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required interior *exit stairway*, a hose connection shall be provided for each floor level above, ~~and~~ below and at grade. Hose connections shall be located at an intermediate floor level landing between floors, unless otherwise approved by the fire code official.
- 2 through 6 (*No change to current text*)

Reason: Since hose connections are placed at intermediate landings between floors, it is not clear as to which floor the hose connection serves. However, by not listing "at grade" the provision could be read that one is not required to serve the floor at grade, whichever intermediate landing that might be, leading to some challenges of its meaning. Hopefully, this provides clarification.

Cost Impact: This appears to be a correction. As such, it is not an increase in cost over what the original intent of the code provision should require.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved as it will require the appropriate placement of hose connections including the floor level at grade. Note that there were some concerns with terminology such as "for each floor level" that may be better addressed by language that addresses stories. However, it was noted that use of the term "story" may lose locations such as penthouses and mezzanines.

Assembly Action:

None

Public Comments

Public Comment 1:

Gregory R. Keith, Professional heuristic Development, representing The Boeing Company, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required *interior exit stairway*, a hose connection shall be provided for each floor level above, and below ~~and at~~ grade plane. Hose connections shall be located at an intermediate floor level landing between floors, unless otherwise approved by the fire code official.
- 2 through 6 (*No change to current text*)

Commenter's Reason: The original proposal intended to clarify that the provision applied to stories at grade. Unfortunately, it modified currently incorrect terminology. "Grade" is not a defined term in the IBC/IFC. However, "grade plane" is a defined term. Returning to the original "above and below" language and adding "plane" after "grade" solves the problem. "Grade plane" is a

defined term and represents a reference datum plane. "Story above grade plane" is also a defined term. Accordingly, all stories are either above or below grade plane. If a story is precisely at grade plane, it is above grade plane, by definition. Approval of this editorial modification will bring this standpipe provision into context with current IBC/IFC definitions and intent and will provide for more consistent interpretations.

Public Comment 2:

Gregory R. Keith, Professional heuristic Development, representing The Boeing Company, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required *interior exit stairway*, a hose connection shall be provided for each ~~story floor level~~ above, below and at grade. Hose connections shall be located at an intermediate ~~floor level~~ landing between ~~stories floors~~, unless otherwise approved by the fire code official.
- 2 through 6 (*No change to current text*)

Commenter's Reason: When the IFC Code Committee approved this proposal, it mentioned in its reason statement, "Note that there were some concerns with terminology such as "for each floor level" that may be better addressed by language that addresses stories. "Floor" and "floor level" are not defined terms in the IBC/IFC. The term "story" is a defined term. This modification addresses that concern and uses proper terminology that will result in more consistent interpretations of this provision.

Final Hearing Results

F148-13

AMPC1, 2

Code Change No: F150-13

Original Proposal

Section(s): 901.8.2 (New)

Proponent: William Freer, New York State Office of Fire Prevention and Control
(WFreer@DHSES.ny.gov)

Add new text as follows:

901.8.2 Removal of occupant use hose. Removal of the occupant use hose line attached to a Class II standpipe system or a Class III standpipe system shall be permitted where either of the following conditions exist:

1. The building is equipped with a Class I standpipe system.
2. The building is not required to be equipped with a Class I standpipe system and the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

Reason: The current code does not require occupant use hoses in as many locations as were required in previous codes. There has been a shift in the philosophy of whether or not occupants should be asked to attempt to extinguish the fire or evacuate the structure. Most of the population is now being taught to evacuate the building, not fight the fire. This shift is mainly due to the safety risk of having a non-trained person attempting to fight a fire with more than a fire extinguisher.

Many jurisdictions have already enacted local legislation or code changes to address this issue.

The City of Philadelphia has added the following:

F-905.11 Existing buildings. Existing structures with occupied floors located more than 50 feet (15,240 mm) above or below the lowest level of fire department *vehicle* access shall be equipped with standpipes installed in accordance with Section F-905. The standpipes shall have an approved fire department connection with hose connections at each floor level above or below the lowest level of fire department *vehicle* access. [The fire code official is authorized to approve the installation of manual standpipe systems to achieve compliance with this section where the responding fire department is capable of providing the required fire flow at the highest standpipe outlet.] *These requirements shall also apply to buildings that were granted variances prior to January 1, 2004 to omit standpipes from the required exit stairways. Buildings or structures that are not in compliance with Section F-905 on the effective date of this code, shall, with written request to and upon written approval from the Fire Department, be granted three years from the effective date of this code to comply.*

Exceptions:

- In existing buildings having the highest occupied floors located not more than 75 feet above the lowest level of fire department vehicle access, Class I standpipe systems are permitted to be manual wet systems.*
- Standpipe systems installed prior to January 1, 1995 that provide a residual pressure of 65 psi (448 kPa) or greater at the highest hose outlet are exempt from the requirement to provide a residual pressure of 100 psi (690 kPa) at the highest hose outlet.*
- Standpipe systems with a residual pressure of less than 100 psi (690 kPa) at the topmost hose outlet are permitted where:*
 - The building existing prior to the effective date of this code;*
 - The building is equipped throughout with an automatic sprinkler system; and*
 - The highest floor level is not more than 150 feet (45 720 mm) above the lowest level of fire department vehicle access,*

F-905.11.1 Removal of occupant use hoseline or Class II standpipe systems. Removal of the hoseline attached to a Class II standpipe system or a Class III standpipe system that is not required by this code, or removal of an entire Class II standpipe system is permitted where the following conditions are met:

- Removal of hoseline only: The building is equipped with a Class I standpipe system or the building is not required to have a Class I system.*
- Removal of the Class II standpipe system is permitted where one of the following exists:*
 - The building is equipped throughout with an automatic fire-extinguishing system and has more than one*

- Class I standpipe hose outlet riser in a multi-exit building or at least one riser in a single exit building;*
- 2.2 *The building is in the process of being equipped throughout with an automatic fire-extinguishing system and there is more than one standpipe hose outlet riser in a multi-exit building or there is at least one riser in a single exit building. When the sprinklers on a floor have been placed in service, the Class II standpipe hose stations on that floor are permitted to be removed; or*
- 2.3 *The building is not equipped throughout with an automatic fire-extinguishing system, there is more than one automatic wet Class I standpipe hose outlet riser in a multi-exit building and there is at least one automatic wet riser in a single exit building.*

The City of San Francisco added:

4.09 Removal of Class II Standpipe Hose Cabinets in Sprinkler Retrofitted Buildings (PDF)

Reference: 2010 S.F.F.C. 901.8

Section 901.8 of the 2010 SFFC requires written approval from the fire code official in order to remove existing fire appliances. In order to speed the permit process, buildings subject to the San Francisco High-rise Sprinkler Ordinance will be permitted to remove Class II Standpipe hose cabinets on individual floors after they have been fully sprinklered. The applicant shall state his or her intention to remove the hose cabinets on the approved sprinkler plans.

Buildings not subject to the ordinance will continue to require written approval from the fire code official in order to remove any fire appliance. These written requests will be considered on a case-by-case basis.

Canada also allows the removal of occupant hoses but requires more signage in places where it is done.

It should also be noted that occupant use hoses are not required by NFPA 14 as follows:

1. NFPA 14--2007, Standard for the Installation of Standpipe and Hose Systems details the design and installation of standpipe systems.
 - 7.3.4 Class III Systems. Class III systems shall be provided with hose connections as required for both Class I and Class II systems.
 - 7.3.4.1 Where the building is protected throughout by an approved automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, and NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to Four Stories in Height, Class II hose stations for use by trained personnel shall not be required, subject to the approval of the local fire department, provided that each Class I hose connection is 2 1/2 in. and is equipped with a 2 1/2 in. x 1 1/2 in. reducer and a cap attached with a chain.

This code change would not increase the cost of construction but would decrease the cost of maintenance and upkeep.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Substitute the proposal as follows:

901.8.2 Removal of occupant use hose. The fire code official is authorized to permit the removal of existing 1 ½- inch (38 mm) hose lines where the following conditions exist:

1. The current fire and building codes do not require their placement and
2. The fire code official determines that the 1 ½ -inch (38 mm) hose line will not be utilized by the trained personnel or the fire department.

Committee Reason: The committee approved the proposal to address the concern that it is often necessary to remove occupant use hose but no authority is provided. However, the proposal as initially written took the authority away from the fire code official to determine. The proposed modification places that authority back but provides them with the necessary tool to allow the removal of hose lines that are not required and that will not be used by the building occupants.

Assembly Action:

None

Public Comments

Public Comment:

Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

901.8.2 Removal of existing occupant-use hose lines. The *fire code official* is authorized to permit the removal of existing ~~1½-inch (38 mm)~~ occupant-use hose lines where all of the following conditions exist:

1. Installation is not required by the current *International Fire Code* or *International Building Code* ~~The current fire and building codes do not require their placement and~~
2. The fire code official determines that the 1½-inch (38 mm) hose lines will not be utilized by ~~the~~ trained personnel or the fire department.
3. The remaining outlets are compatible with local fire department fittings.

Commenter's Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

The committee approved F150-13 at the hearings in Dallas with modification. After review, the FCAC felt that clarification and modifications were needed. The modifications were made due to the following:

- Hoses may be of different sizes, not always 1 1/2", so the reference to the size was removed. Also, the language was modified to say that all of the conditions (1, 2 and 3) need to have been met for the removal to be allowed.
- The language in condition 1 was changed to reference installation, not placement, and includes reference to the current IFC and IBC.
- The language in condition 2 was modified to delete an unnecessary fire code official determination; this authority is already established in the charging section.
- A condition 3 was added to ensure that any outlets that remained were useable by the Fire Department by requiring them to be compatible with local fire department fittings.

Final Hearing Results

F150-13

AMPC

Code Change No: F152-13

Original Proposal

Section(s): 907.1.2 (IBC [F] 907.1.2)

Proponent: Thomas P. Hammerberg, representing Automatic Fire Alarm Association (TomHammerberg@afaa.org)

Revise as follows:

907.1.2 (IBC [F] 907.1.2) Fire alarm shop drawings. Shop drawings for fire alarm systems shall be submitted for review and approval prior to system installation, and shall include, but not be limited to, all of the following where applicable to the system being installed:

1. A floor plan that indicates the use of all rooms.
2. Locations of alarm-initiating devices.
3. Locations of alarm notification appliances, including candela ratings for visible alarm notification appliances.
4. Design minimum audibility level for occupant notification.
- ~~45.~~ Location of fire alarm control unit, transponders and notification power supplies.
- ~~56.~~ Annunciators.
- ~~67.~~ Power connection.
- ~~78.~~ Battery calculations.
- ~~89.~~ Conductor type and sizes.
- ~~910.~~ Voltage drop calculations.
- ~~1011.~~ Manufacturers' data sheets indicating model numbers and listing information for equipment, devices and materials.
- ~~1112.~~ Details of ceiling height and construction.
- ~~1213.~~ The interface of fire safety control functions.
- ~~1314.~~ Classification of the supervising station.

Reason: The "where applicable" addition is necessary to clarify that only those items applicable to the system being installed are required to be submitted. For example, if the system is only to monitor a sprinkler system and no fire alarm notification appliances are required, there is no need to provide voltage drop calculations or minimum audibility levels that the system will be designed to meet.

The other change is necessary to assist fire alarm designers, installers and authorities having jurisdiction with meeting minimum audibility requirements per NFPA 72. This change will decrease the amount of interpretation issues that usually arise at the final acceptance test and will result in better designed and installed systems.

Cost Impact: none

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved as audibility is an issue that comes up during testing and providing that data within the shop drawings is necessary.

Assembly Action:

None

Final Hearing Results

F152-12

AS

Code Change No: F157-13

Original Proposal

Section(s): 907.2.3 (IBC [F] 907.2.3)

Proponent: Frank G. Castelvechi, III, PE, representing County of Henrico, Virginia (cas13@co.henrico.va.us)

Revise as follows:

907.2.3 (IBC [F] 907.2.3) Group E. A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group E occupancies. When *automatic sprinkler systems* or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

Exceptions:

1. A manual fire alarm system is not required in Group E occupancies with an *occupant load* of ~~30~~ 50 or less.
2. Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:
 - 2.1. Interior *corridors* are protected by smoke detectors.
 - 2.2. Auditoriums, cafeterias, gymnasiums and similar areas are protected by *heat detectors* or other *approved* detection devices.
 - 2.3. Shops and laboratories involving dusts or vapors are protected by *heat detectors* or other *approved* detection devices.
3. Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1, the emergency voice/alarm communication system will activate on sprinkler water flow and manual activation is provided from a normally occupied location.

Reason: Changing the threshold from 50 to 30 imposed this requirement on most school trailers and small daycare centers by moving the classroom size from 1000 sq ft to 600 sq ft. Requiring an expensive voice alarm system in a school trailer or small storefront daycare center is a ludicrous imposition of significant costs to schools and small businesses. In these small buildings any emergency situation would be readily apparent to all occupants—if you cannot see the flames, smell the smoke or feel the heat in a one room schoolhouse-- a synthesized voice is not going to do any good and may well interfere with the children understanding the teachers instructions.

There is no record of fire deaths and injuries in these occupancies to justify these added expenses. The children in these occupancies are required to be under competent adult supervision.

Cost Impact: This will reduce the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved as it is consistent with the action taken on F158-13. This provides a method of making the change from 30 occupants to 50 occupants if F158-13 should fail in final action.

Assembly Action:

None

Final Hearing Results

F157-12

AS

Code Change No: F158-13

Original Proposal

Section(s): 907.2.3 (IBC [F] 907.2.3)

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

907.2.3 (IBC [F] 907.2.3) Group E. A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group E occupancies. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

Exceptions:

1. A manual fire alarm system is not required in Group E occupancies with an occupant load of ~~30~~ 50 or less.
2. Emergency voice/ alarm communication systems meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall not be required in Group E occupancies with occupant loads of 100 or less, provided that activation of the manual fire alarm system initiates an approved occupant notification signal in accordance with Section 907.5.
- ~~23.~~ Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:
 - ~~2.1~~ 3.1. Interior corridors are protected by smoke detectors.
 - ~~2.2~~ 3.2. Auditoriums, cafeterias, gymnasiums and similar areas are protected by heat detectors or other approved detection devices.
 - ~~2.3~~ 3.3. Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices.
- ~~34.~~ Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, the emergency voice/alarm communication system will activate on sprinkler water flow and manual activation.

Reason: Many small schools or day cares consist of one or two rooms. For such small buildings, there is no need to install a notification system to warn occupants of fires or other emergencies, as occupants are typically in close visual or audible contact with all occupied spaces and with each other. This arrangement provides for adequate means to notify all occupants of the building of potential hazardous conditions to initiate emergency actions, including evacuation.

The threshold in Exception 1 has been reduced from 50 to 30 with no apparent loss history. The testimony presented by the proponent of Code Change F107-09/10 was that the number was modified to correlate the occupant load trigger for 1-HR rated corridors. It is common that individual classrooms contain an occupant load of 30 students. It seems that a more appropriate occupant load trigger is the egress provision which requires a second exit at an occupant load of 50, not 30.

An alarm system in a single classroom, or set of small classrooms, does not appear justified. It appears that the appropriate 'occupant load trigger' is 50 since that is when a fire alarm system has been required for many years without any major incidents. Therefore, this proposal will move the trigger to an occupant load of 50 to determine when a manual fire alarm system is required.

Exception 2 is proposed to be added. This exception would require the emergency voice communication system when the occupant load exceeds 100, as buildings with larger numbers of occupants may necessitate detailed instructions regarding evacuation, relocation, or other actions to ensure safety of building occupants. Often, these buildings include multiple floors, fire areas, and egress paths, and occupants may require notification of more detailed or modified instructions on alternate courses of action other than those stated in a standard evacuation plan.

The result of this proposal is that when the occupant load is:
50 or less – fire alarm system is not required

51 to 100 – manual fire alarm system is required
101 or more – manual fire alarm system with emergency voice/alarm communication system

Cost Impact: The code change proposal will reduce the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was felt to be a more reasonable approach for smaller schools. A manual fire alarm system for greater than 50 is reasonable while still maintaining the emergency voice communication system where the occupant load exceeds 100.

Assembly Action:

None

Final Hearing Results

F158-12

AS

Code Change No: F160-13

Original Proposal

Section(s): 907.2.6 (IBC [F] 907.2.6), 907.5.2.1 (IBC [F] 907.5.2.1), 907.5.2.3 (IBC [F] 907.5.2.3)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Revise as follows:

907.2.6 (IBC [F] 907.2.6) Group I. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group I occupancies. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in accordance with Sections 907.2.6.1, 907.2.6.2 and 907.2.6.3.3.

Exceptions:

1. Manual fire alarm boxes in sleeping units of Group I-1 and I-2 occupancies shall not be required at exits if located at all care providers' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.4.2.1 are not exceeded.
2. Occupant notification systems are not required to be activated where private mode signaling installed in accordance with NFPA 72 is approved by the fire code official and staff evacuation responsibilities are included in the fire safety and evacuation plan required by Section 404.

907.5.2.1 (IBC [F] 907.5.2.1) Audible alarms. Audible alarm notification appliances shall be provided and emit a distinctive sound that is not to be used for any purpose other than that of a fire alarm.

Exceptions:

1. ~~Visible alarm notification appliances shall be allowed in lieu of audible alarm notification appliances in critical care areas of Group I-2 occupancies. Audible alarm notification appliances are not required in critical care areas of Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.~~
2. A visible alarm notification appliance installed in a nurses' control station or other continuously attended staff location in a Group I-2 Condition 2 suite shall be an acceptable alternative to the installation of audible alarm notification appliances throughout the suite in Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.
- 2.3. Where provided, audible notification appliances located in each occupant evacuation elevator lobby in accordance with Section 3008.10.1 of the *International Building Code* shall be connected to a separate notification zone for manual paging only.

907.5.2.3 (IBC [F] 907.5.2.3) Visible alarms. Visible alarm notification appliances shall be provided in accordance with Sections 907.5.2.3.1 through 907.5.2.3.4.

Exceptions:

1. Visible alarm notification appliances are not required in alterations, except where an existing fire alarm system is upgraded or replaced, or a new fire alarm system is installed.
2. Visible alarm notification appliances shall not be required in exits as defined in Section 1002.1.

3. Visible alarm notification appliances shall not be required in elevator cars.
4. Visual alarm notification appliances are not required in critical care areas of Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 100 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

The proposed changes are a clarification of the application of 'private mode' signaling as allowed by NFPA 72 and provide linkage to the emergency action plan necessary for 'private mode' to be safely implemented. A section-by-section summary follows:

Section 907.2.6: The change to Exception 2 links the use of "private mode" signaling under NFPA 72 to the emergency action plan portion of the code. The use of private mode appliances relies on a trained staff to respond and provide for occupant evacuation/defend in place actions.

Section 907.5.2.1: Exception 1 is proposed for modification to eliminate the requirement for the visible signal and the audible signal in Group I-2 hospital critical care areas, operating rooms for example. In private mode, as permitted by Section 907.2.6, Exception 1, there is still a requirement for an audible alarm notification from appliances, though at a much lower decibel level meant to alert staff of the alarm activation. The current language at Section 907.5.2.1, Exception 1 allows that audible alarm to be eliminated from critical care areas (operating rooms) in exchange for a visual notification device. However, the visual signal device also creates a distraction in critical care areas that may not be able to immediately stop a patient procedure and this proposal is to eliminate the visual alarm notification and to link the exception back to the primary allowance for private mode where we have provided for a link to the emergency action plan. The emergency action plan would include provisions for alerting of critical area staff and the actions to be taken.

A new second exception is added to this section to allow for an alarm indicator in a control area of a hospital suite in lieu of audible devices throughout the suite. In a suite arrangement the "control area" is the centrally manned location for staff monitoring patients in the separate rooms. An alarm indicator at this location will alert staff for response in a more effective and efficient manner.

Section 907.5.2.3: A fourth exception is added here to correlate the allowance for eliminating the audible and visual alarm devices from the critical care areas and to link the exception back to the primary allowance for private mode where we have provided for a link to the emergency action plan.

The emergency plan should reflect the response to the private mode alarm signals including the response necessary in critical care areas and who is responsible for alerting critical care area staff.

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved as the exceptions for audible and visible alarm notification were provided with necessary detail regarding care suites and critical care areas. This was also consistent with the federal CMS guidelines.

Assembly Action:

None

Final Hearing Results

F160-12

AS

Code Change No: F161-13

Original Proposal

Section(s): 907.2.9.3 (IBC [F] 907.2.9.3)

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration
(jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

907.2.9.3 (IBC [F] 907.2.9.3) Group R-2 college and university buildings. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group R-2 occupancies operated by a college and or university for student or staff housing buildings in the following locations:

1. Common spaces outside of *dwelling units* and *sleeping units*.
2. Laundry rooms, mechanical equipment rooms, and storage rooms.
3. All interior corridors serving *sleeping units* or *dwelling units*.

Exception: An automatic smoke detection system is not required in buildings that do not have interior corridors serving sleeping units or dwelling units and where each sleeping unit or dwelling unit either has a means of egress door opening directly to an exterior exit access that leads directly to an exit or a means of egress door opening directly to an exit.

Required smoke alarms in *dwelling units* and *sleeping units* in Group R-2 occupancies operated by a college and or university for student or staff housing buildings shall be interconnected with the fire alarm system in accordance with NFPA 72.

~~**Exception:** An automatic smoke detection system is not required in buildings that do not have interior corridors serving sleeping units or dwelling units and where each sleeping unit or dwelling unit either has a means of egress door opening directly to an exterior exit access that leads directly to an exit or a means of egress door opening directly to an exit.~~

Reason: This proposal intends to better define what constitutes “college and university buildings.” As proposed, such buildings would include those that are operated by a college or university for student or staff housing (regardless of whether the college or university actually owns the building). The difficulty with the current text is determining how it applies to off-campus housing that is open to the general public. Most apartment complexes near a university will probably contain some percentage of student tenants, and for that matter, complexes many miles away from a campus may have student tenants as well. The current code text provides no guidance in determining a threshold at which a “normal” apartment building becomes subject to the provisions of this section.

Based on a discussion last cycle with the proponents of this section, when it was added to the code, it is our understanding that the intent was to address “dormitory style” student housing that is operated by a college or university, and the proposed text intends to clarify that point so that the intended application of the code will be clearly conveyed.

In addition, the existing exception has been relocated in the section so that it is properly placed with respect to the paragraph that it applies to. No change has been made to the exception text.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The clarification as to which portion of the section that the exception was applicable was seen as an improvement. In addition, the clarification as to what is considered a college or university building was necessary.

Assembly Action:

None

Final Hearing Results

F161-12

AS

Code Change No: **F163-13**

Original Proposal

Section(s): 907.2.11.2 (IBC [F] 907.2.11.2), 907.2.11.5 (New) (IBC [F] 907.2.11.5 (New))

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

907.2.11.2 (IBC [F] 907.2.11.2) Groups R-2, R-3, R-4 and I-1. Single or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, R-4 and I-1 regardless of *occupant load* at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
2. In each room used for sleeping purposes.

~~**Exception:** Single or multiple station smoke alarms in Group I-1 shall not be required where smoke detectors are provided in the sleeping rooms as part of an automatic smoke detection system.~~

907.2.11.5 (IBC [F] 907.2.11.5) Smoke detection system. Smoke detectors listed in accordance with UL 268 and provided as part of the building's fire alarm system shall be an acceptable alternative to single and multiple-station smoke alarms and shall comply with the following:

1. The fire alarm system shall comply with all applicable requirements in Section 907.
2. Activation of a smoke detector in a dwelling unit or sleeping unit shall initiate alarm notification in the dwelling unit or sleeping unit in accordance with Section 907.5.2.
3. Activation of a smoke detector in a dwelling unit or sleeping unit shall not be required to activate alarm notification appliances outside of the dwelling unit or sleeping unit, provided that a supervisory signal is generated and monitored in accordance with Section 907.6.5.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal allow smoke detectors, provided as part of the buildings fire alarm system, to be used as an alternative to single and multiple-station smoke alarms in dwelling units or sleeping units. When a smoke detector activates, the system is required to generate an alarm signal in the dwelling unit or sleeping unit, which can easily be accomplished with an addressable fire alarm system.

There are some jurisdictions that currently allow smoke detectors to be installed in dwelling units and sleeping units under the alternate materials and methods provisions of the code. These systems may only generate alarm signals in the dwelling unit or sleeping unit, or may activate alarm notification appliances throughout the building. Both options are allowed in this proposal.

Item (3) requires smoke detection systems that only generate alarm notification in the dwelling unit or sleeping unit to transmit a supervisory alarm to an approved supervising station as required by Section 907.6.5. This monitoring is already required for fire alarm system if it also provides protection for the common areas of the building.

There are advantages if the smoke detection system option provides protection in these facilities. These include being able to automatically test smoke detector sensitivity, receive and act on trouble signals, and not have to provide both a fire alarm system and interconnected smoke alarms in the building. However, the code proposal does not prevent the smoke alarm option from being provided.

The proposal also deletes the exception to Section 907.2.11.2 that already allows these systems to be used in Group I-1 occupancies. The addition of Section 907.2.11.5 makes this exception unnecessary.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

907.2.11.2 (IBC [F] 907.2.11.2) Groups R-2, R-3, R-4 and I-1. Single or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, R-4 and I-1 regardless of *occupant load* at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
2. In each room used for sleeping purposes.

907.2.11.5 (IBC [F] 907.2.11.5) Smoke detection system. Smoke detectors listed in accordance with UL 268 and provided as part of the building's fire alarm system shall be an acceptable alternative to single and multiple-station smoke alarms and shall comply with the following:

1. The fire alarm system shall comply with all applicable requirements in Section 907.
2. Activation of a smoke detector in a dwelling unit or sleeping unit shall initiate alarm notification in the dwelling unit or sleeping unit in accordance with Section 907.5.2.
3. Activation of a smoke detector in a dwelling unit or sleeping unit shall not ~~be required to~~ activate alarm notification appliances outside of the dwelling unit or sleeping unit, provided that a supervisory signal is generated and monitored in accordance with Section 907.6.5.

Committee Reason: The proposal was felt necessary to provide the option of using a smoke detection system as an alternative to single and multi-station smoke alarms. There was one concern that item 3 would allow someone to design a system that would activate the alarm system throughout the building. The modification deletes this allowance by removing the terms "be required to."

Assembly Action:

None

Final Hearing Results

F163-13

AM

Code Change No: **F167-13**

Original Proposal

Section(s): 907.2.14 (IBC [F] 907.2.14)

Proponent: Gene Boecker, AIA, Code Consultants, Inc. representing Code Consultants, Inc.

Revise as follows:

907.2.14 (IBC [F] 907.2.14) Atriums Connecting more than two stories. A fire alarm system shall be installed in occupancies with an atrium connecting more than two stories, with smoke detection installed throughout the atrium in locations required by a rational analysis in Section 909.4 and in accordance with the system operation requirements in Section 909.17. The system ~~must~~ shall be activated in accordance with Section 907.5. Such occupancies in Group A, E or M shall be provided with an emergency voice/alarm communication systems complying with the requirements of Section 907.5.2.2.

Reason: The purpose of this code change proposal is to correct a substantial change to the requirements for smoke detection in atriums that was made with the intent of only clarifying the existing requirements.

In the 2003 and 2006 editions, the code required smoke detection in atriums only where required by a rational analysis in accordance with Section 909. Section 909.12.3 of the 2012 edition still indicates that automatic activation of a smoke control system is required to be by, "any smoke detection required by engineering analysis." However, modifications made to Section 907.2.13 in the 2009 edition (now Section 907.2.14 in the 2012 edition), that were intended only to clarify existing requirements, appear to require smoke detection in atriums regardless of the need for smoke detection as determined by a rational analysis.

When Section 907 was modified in the 2009 edition by code change proposal F163-07/08, the intent of the code change was to correlate the organization of Section 907 with Section 903. The main purpose of the code change was to correlate the terms "automatic smoke detection systems" and "manual fire alarm system". During the course of the code change process Section 907.2.13 was modified to require both a fire alarm system and a smoke detection system in atriums, although a smoke detection system had not been required in atriums by Section 907 of the prior edition. This is clear because code change proposal F58-01 that removed the requirement for smoke detection in atriums stated in its justification, "[t]he engineering analysis would determine if (or if not) smoke detectors would be required to maintain a tenable environment for the evacuation or relocation for the occupants of the building."

The modification in this code change proposal maintains the appropriate terminology, but returns the requirements to their original intent: that the requirements for smoke detection in atriums are unique to each atrium and should be determined by the required rational analysis.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved as it was felt that the placement of smoke detectors as it relates to smoke control should be addressed through the design process in order for the system to operate properly.

Assembly Action:

None

Final Hearing Results

F167-12

AS

Code Change No: F168-13

Original Proposal

Section(s): 907.2.22 (IBC [F] 907.2.22), 907.2.22.1 (New) [IBC [F] 907.2.22.1(New)], 907.2.22.2 (New) [IBC [F] 907.2.22.2(New)]

Proponent: Eric R. Rosenbaum, Hughes Associates, Inc. representing the Air Traffic Control Tower Fire Life Safety Task Group (erosenbaum@haifire.com+)

Revise as follows:

907.2.22 (IBC [F] 907.2.22) Airport traffic control towers. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in airport traffic control towers in ~~all occupiable and equipment spaces~~ accordance with Sections 907.2.22.1 and 907.2.22.2.

Exception: Audible appliances shall not be installed within the control tower cab.

907.2.22.1 (IBC [F] 907.2.22.1) Airport traffic control towers with multiple exits and automatic sprinklers. Airport traffic control towers with multiple exits and equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3, shall be provided with smoke detectors in the following locations.

1. Airport traffic control cab
2. Electrical and mechanical equipment rooms
3. Airport terminal radar and electronics rooms
4. Outside each opening into exit enclosures
5. Along the single means of egress permitted from observation levels
6. Outside each opening into the single means of egress permitted from observation levels.

907.2.22.2 (IBC [F] 907.2.22.2) Other airport traffic control towers. -Airport traffic control towers with a single exit or where sprinklers are not equipped throughout, shall be provided with smoke detectors in the following locations.

1. Airport traffic control cab
2. Electrical and mechanical equipment rooms
3. Airport terminal radar and electronics rooms
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.
6. Means of egress
7. Accessible utility shafts

Reason: The proposed change is the recommendation of the Air Traffic Control Tower Fire/Life Safety Task Group, and reflects the current approach to fire protection and life safety in airport traffic control towers and the provisions of the Life Safety Code. It is suggested that the proposed revisions provide the proper level of protection for facilities with single exits and multiple exits where delayed evacuation of the cab may be required. The change reduces the amount of detection required in multiple exit ATCT with automatic sprinkler protection based on the accepted revision to Section 412.3 of the IBC to require automatic sprinkler protection in towers where an occupied floor is located 35 ft or greater from the lowest level of fire department vehicle access. Automatic sprinklers are provided for detection and control of the fire. Smoke detection is specified as required to also detect a fire that may affect the means of egress for the tower. The changes also are intended to clarify the required locations of smoke detection in single exit ATCT based on the allowed uses in an airport traffic control tower in Section 412.3. The following is the accepted proposal to Section 412.3:

412.3 Airport traffic control towers. The provisions of Sections 412.3.1 through 412.3.511 shall apply to airport traffic control towers occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

412.3.1 Type of construction. Airport traffic control towers shall be constructed to comply with the height limitations of Table 412.3.2.

**TABLE 412.3.2
HEIGHT LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS**

TYPE OF CONSTRUCTION	HEIGHT ^a (feet)
IA	Unlimited
IB	240
IIA	100
IIB	85
IIIA	65

- a. Height to be measured from grade plane to cab floor

412.3.2 Stairway Stairways in Airport traffic control towers shall conform to the requirements of Section 1009. Such *stairways* shall be a smokeproof enclosure in accordance with Section 909.20. The stair pressurization alternative in accordance with Section 909.20.5 shall be permitted to be used. *Stairways* shall not be required to extend to the roof as specified in Section 1009.11.

412.3.3 Exit access. From observation levels, airport traffic control towers shall be permitted to have a single means of exit access for a distance of travel not exceeding 100 ft (30 m). This means of egress shall be permitted to include exit access utilizing an unenclosed stair at the observation level.

412.3.4 Single means of egress. Not less than one *exit stairway* shall be permitted for airport traffic controls towers of any height provided that the *occupant load* per floor is not greater than 15 and the area per floor does not exceed 1,500 square feet (140 m²).

412.3.4.1 Arrangement of single means of egress. Airport traffic control towers permitted a single exit and located above another building shall be provided with one of the following:

1. Exit enclosure separated from the other building with no door openings to or from the other building
2. Exit enclosure leading directly to an exit enclosure serving the other building, with walls and door separating the exit enclosures from each other, and another door allowing access to the top floor of the building that provides access to a second exit serving that floor.

412.3.4.2 Interior Finish. Airport traffic control towers permitted a single exit in accordance with Section 412.3.4 shall be restricted to interior wall and ceiling finishes of Class A or Class B.

412.3.5 Automatic fire detection systems. Airport traffic control towers shall be provided with an automatic fire detection system installed in accordance with Section 907.2.

412.3.6 Automatic sprinkler system. Airport traffic control towers shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

412.3.7 Standby power. A standby power system that conforms to Chapter 27 shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:

1. Pressurization equipment, mechanical equipment and lighting.
2. Elevator operating equipment.
3. Fire alarm and smoke detection systems.

412.3.8 Elevator Protection. Wires or cables that provide normal and standby power, control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire-detecting systems to elevators shall be protected by construction having a minimum 1-hour *fire resistance rating* or shall be circuit integrity cable having a minimum 1-hour *fire-resistance rating*.

412.3.9 Accessibility. Airport traffic control towers need not be *accessible* as specified in the provisions of Chapter 11.

Cost Impact: This code change will increase the cost of construction from the current code requirements in some instances; however, reflects current building practices of the FAA. Cost will be reduced in instances where detection is not required.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved as it correlates with the revisions made in Group A for aircraft control towers.

Assembly Action:

None

Final Hearing Results

F168-12

AS

Code Change No: **F169-13**

Original Proposal

Section(s): 907.3.1 (IBC [F] 907.3.1)

Proponent: Barry Greive, representing Target Corporation (barry.greive@target.com)

Revise as follows:

907.3.1 (IBC [F] 907.3.1) Duct smoke detectors. Smoke detectors installed in ducts shall be listed for the air velocity, temperature and humidity present in the duct. Duct smoke detectors shall be connected to the building's fire alarm control unit when a fire alarm system is required by Section 907.2. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location and shall perform the intended fire safety function in accordance with this code and the International Mechanical Code. Duct smoke detectors shall report as a supervisory signal not a fire alarm, and they shall not be used as a substitute for required open area detection.

Exceptions:

1. The supervisory signal at a constantly attended location is not required where duct smoke detectors activate the building's alarm notification appliances.
2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.

Reason: Duct detectors are widely known to be a cause of false alarms which is a safety concern for first responders. Duct detectors need to report as a supervisory signal to indicate that there is an issue and need to be repaired or replaced but should not report as a fire alarm like a water flow device. This adds clarity to a section that is not enforced uniformly and will add to fire fighter safety by lessening the amount of potential false alarms.

Cost Impact: This will not increase the cost of construction

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The proposal would create confusion on the application of the exceptions and possibly create a conflict. It was suggested that the proposal be reworded to deal with the potential conflict in the form of a public comment.

Assembly Action:

None

Public Comments

Public Comment:

Barry Greive, representing Target Corporation, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

907.3.1 Duct smoke detectors. Smoke detectors installed in ducts shall be listed for the air velocity, temperature and humidity present in the duct. Duct smoke detectors shall be connected to the building's fire alarm control unit when a fire alarm system is required by Section 907.2. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly

attended location and shall perform the intended fire safety function in accordance with this code and the International Mechanical Code. In facilities that are required to be monitored by a supervising station, duct smoke detectors shall only report as a supervisory signal and not a fire alarm ~~and~~. They shall not be used as a substitute for required open area detection.

Exceptions:

1. The supervisory signal at a constantly attended location is not required where duct smoke detectors activate the building's alarm notification appliances.
2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.

Commenter's Reason: Duct detectors are widely known to be a cause of false alarms which is a safety concern for first responders. Duct detectors need to report as a supervisory signal to indicate that there is an issue and either need to be repaired or replaced but should not report as a fire alarm like a water flow device. This change adds clarity to a section that is not enforced uniformly and will add to fire fighter safety by lessening the amount of potential false alarms

During the Committee hearings it was mentioned by several members that their reason for denial was that the code section already states that duct detectors shall report as supervisory and no further clarification is needed. Unfortunately this section is widely miss-interpreted, anytime a duct detector reports as a fire alarm we are putting the first responders in harm's way and it takes them away from more important duties. This code section needs greater clarification, smoke detectors and duct smoke detectors are one of the greatest contributors to false alarms in a building.

Final Hearing Results

F169-13

AMPC

Code Change No: F170-13

Original Proposal

Section(s): 907.4.2.1 (IBC [F] 907.4.2.1)

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

Revise as follows:

907.4.2.1 (IBC [F] 907.4.2.1) Location. Manual fire alarm boxes shall be located not more than 5 feet (1524 mm) from the entrance to each exit. In buildings not protected by an automatic sprinkler system in accordance with 903.3.1.1 or 903.3.1.2, additional manual fire alarm boxes shall be located so that the exit access travel distance to the nearest box does not exceed 200 feet (60 960 mm).

Reason: This code change proposal both addresses the current situation of manual pull boxes being seldom used to report fires and coordinates with Table 1016.2 on exit access travel distance.

With the exception of F-2, S-2, and U. Travel distance in unsprinklered buildings is a maximum of 200 feet (when such occupancy is permitted not to be sprinklered. Exit access travel distance is permitted to be increased by 50 feet (to 250 feet) for sprinkler installation in A, E, F-1, M, R, S-1 and 100 feet (to 300 feet) for Group B. What this proposal does is it permits the increased travel distance allowed by the sprinkler system to not then require an additional manual pull box.

The second part of the change is to coordinate with the defined term 'exit access' travel distance for the requirements for which measurements should be taken. The first part of 907.4.2.1 states the measurement is taken from each 'exit', which is the end of 'exit access'.

Cost Impact: This proposal will not affect the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved as it coordinates the additional manual fire alarm box requirements more appropriately with travel distance for unsprinklered buildings. Sprinklered buildings are allowed increased travel distances that are not consistent with this section.

Assembly Action:

None

Final Hearing Results

F170-12

AS

Code Change No: F171-13

Original Proposal

Section(s): 202, 907.5.2.3.1 (IBC [F] 907.5.2.3.1). 907.5.2.3.2 (IBC [F] 907.5.2.3.2)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee
(cbaldassarra@RJAGroup.com)

Revise as follows:

IFC 907.5.2.3.1 (IBC [F] 907.5.2.3.1) Public use areas and common use areas. Visible alarm notification appliances shall be provided in public use areas and common use areas.

~~**IFC 907.5.2.3.2 (IBC [F] 907.5.2.3.2) Employee work areas.**~~ **Exception:** Where *employee work areas* have audible alarm coverage, the notification appliance circuits serving the *employee work areas* shall be initially designed with a minimum of 20-percent spare capacity to account for the potential of adding visible notification appliances in the future to accommodate hearing impaired employee(s).

Add new definitions as follows:

SECTION 202 GENERAL DEFINITIONS

[B] COMMON USE. Interior or exterior circulation paths, rooms, spaces or elements that are not for public use and are made available for the shared use of two or more people.

[B] PUBLIC-USE AREAS. Interior or exterior rooms or spaces that are made available to the general public.

[B] EMPLOYEE WORK AREA. All or any portion of a space used only by employees and only for work. Corridors, toilet rooms, kitchenettes and break rooms are not employee work areas.

Reason: The intent of this proposal is to use defined terms for public use and common use to avoid confusion for where visible alarms are required. The definitions are copied from IBC. This requirement would be consistent with ADA 215.2.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None – This will be required by the 2010 ADA Standard for Accessible Design.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved as it coordinates with the accessibility requirements of the IBC and ADA.

Assembly Action:

None

Final Hearing Results

F171-12

AS

Code Change No: **F173-13**

Original Proposal

Section(s): 907.6 (IBC [F] 907.6)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

907.6 (IBC [F] 907.6) Installation and monitoring. A fire alarm system shall be installed and monitored in accordance with Sections 907.6.1 through 907.6.5.2 and NFPA 72.

Reason: This section addresses installation and monitoring. The proposal simply clarifies that monitoring is part of the installation. This proposal does not change or alter the exceptions to Section 907.6.5.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: Specifying both installation and monitoring was felt to be more reflective of the requirements within Section 907.6.

Assembly Action:

None

Final Hearing Results

F173-12

AS

Code Change No: F174-13

Original Proposal

Section(s): 907.6.3 (New) (IBC [F] 907.6.3), 907.6.3.1 (New) (IBC [F] 907.6.3.1)

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

907.6.3 (IBC [F] 907.6.3) Initiating device identification. The fire alarm system shall identify the specific initiating device address, location, device type, floor level where applicable and status including indication of normal, alarm, trouble and supervisory status, as appropriate.

Exception:

1. Fire alarm systems in single story buildings less than 22,500 square feet (2090 m²) in area
2. Fire alarm systems that only include manual fire alarm boxes, water flow initiating devices, and not more than 10 additional alarm initiating devices.
3. Special initiating devices that do not support individual device identification.
4. Fire alarm systems or devices that are replacing existing equipment.

907.6.3.1 (IBC [F] 907.6.3.1) Annunciation. The initiating device status shall be annunciated at an approved on-site location.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal improves the ability of emergency responders to identify the status of initiating devices at the time of an emergency. This proposal will help identify problematic initiating devices and thus reduce nuisance alarms. It also eliminates the requirements for providing zone indication of system status. This is considered particularly important in high-rise buildings, where the number of initiating devices and the geometry of the building warrant a need for point monitoring of individual devices, which is not currently accommodated by single floor zones.

This proposal would allow the fire code official the flexibility to not require individual detection device identification in smaller buildings, where the source of alarm and trouble signals can be more easily determined.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved as it is consistent with the abilities of new technology as it relates to fire alarms. In addition, it will help the first responders more quickly and effectively fight a fire.

Assembly Action:

None

Final Hearing Results

F174-12

AS

Code Change No: **F180-13**

Original Proposal

Section(s): 915 (New) [IBC [F] 915 (New)], 908.7(IBC [F] 908.7), 908.7.1 (IBC [F] 908.7.1)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

Revise as follows:

SECTION 915 **CARBON MONOXIDE DETECTION**

~~908.7(IBC [F] 908.7)~~ **915.1 (IBC [F] 915.1) Carbon monoxide alarms.** Group I or R occupancies located in a building containing a fuel-burning appliance or in a building which has an attached garage shall be equipped with single-station carbon monoxide alarms. The carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. An open parking garage, as defined in Chapter 2 of the *International Building Code*, or an enclosed parking garage ventilated in accordance with Section 404 of the *International Mechanical Code* shall not be considered an attached garage.

Exception: *Sleeping units or dwelling units* which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:

1. The *sleeping unit or dwelling unit* is located more than one story above or below any story which contains a fuel-burning appliance or an attached garage;
2. The *sleeping unit or dwelling unit* is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and
3. The building is equipped with a common area carbon monoxide alarm system.

~~908.7.1 (IBC [F] 908.7.1)~~ **915.2 (IBC [F] 915.2) Carbon monoxide detection systems.** Carbon monoxide detection systems, which include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be *listed* as complying with UL 2075.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal simply relocates CO alarm system requirements from Section 908.7 to a new Section 915, with no technical changes whatsoever. This is being done for the following reasons:

1. By definition emergency alarm systems provide indication and warning of emergency situations involving hazardous materials, which relates more closely to warning systems required by the hazardous materials chapters of this code (e.g. Chapter 50 to 67). Carbon monoxide that is generated by motor vehicle exhaust and damaged fuel burning appliances is not regulated by those chapters.
2. As currently written the CO alarm requirements in Section 908.7 stand alone, and do not relate in any way to the emergency alarm requirements in Sections 908.1 through 908.6. Thus there is no advantage to having both emergency alarm and carbon monoxide alarm requirements in the same Section.

3. This proposal relocates the carbon monoxide alarm requirements to a new Section 915, which was done so the current Sections 909 through 914 don't need to be renumbered.
4. It is recognized that there is at least one other proposal to revise the Section 908.7 CO alarm requirements. If that proposal succeeds, approval of this proposal is intended to retain the changes from the other proposal, and relocate the revised provisions into Section 915.

Cost Impact: The proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal to move the CO requirements to a new independent section was approved as such systems are not considered "emergency alarms" as currently addressed in other provisions of Section 908.

Assembly Action:

None

Final Hearing Results

F180-13

AS

Code Change No: F182-13

Original Proposal

Section(s): 908.7 (IBC[F] 908.7) , 908.7.1 (New) [IBC [F] 908.7.1 (New)], 908.7.1.1 (New) [IBC [F] 908.7.1.1 (New)], 908.7.1.2 (New) [IBC [F] 908.7.1.2 (New)]

Proponent: Roger Evans, Park City Municipal Corporation, representing the Utah Chapter of ICC (revans@parkcity.org)

Revise as follows:

908.7 (IBC[F] 908.7) Carbon monoxide alarms detection. Group I or R and E occupancies located in a building containing a fuel-burning appliance or in a building which has an attached garage shall be equipped with single-station carbon monoxide alarms detection. ~~The Group I and R occupancies shall be equipped with single-station carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. Group E occupancies shall be equipped with carbon monoxide detection in accordance with 907.1 and 907.2.~~ An open parking garage ventilated in accordance with Section 404 of the International Mechanical Code shall not be considered an attached garage.

Exception: *Sleeping units or dwelling units* which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:

1. The *sleeping unit* or *dwelling unit* is located more than one story above or below any story which contains a fuel-burning appliance or an attached garage;
2. The *sleeping unit* or *dwelling unit* is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and
3. The building is equipped with a common area carbon monoxide alarm system.

908.7.1 (IBC[F] 908.7.1) Group E Occupancy Locations. Where required by Section 908.7, carbon monoxide detectors in Group E occupancies shall be installed in the locations specified in Sections 908.7.2 through 908.7.2.2.

908.7.1.1 (IBC[F] 908.7.1.1) Fuel-burning appliances and fuel burning fireplaces. Carbon monoxide detectors shall be installed on the ceiling of a room containing a fuel-burning appliance or a fuel burning fireplace. The carbon monoxide alarm signal shall be automatically transmitted to a constantly attended on site location.

908.7.1.2 (IBC[F] 908.7.1.2) Forced air furnaces. Carbon monoxide detectors shall be installed on the ceiling of a room containing a fuel-burning forced air furnace or in occupied rooms served by a fuel-burning, forced air furnace. The carbon monoxide alarm signal shall be automatically transmitted to a constantly attended on site location.

908.7.1 (IBC[F] 908.7.1) 908.7.2 (IBC[F] 908.7.2) Carbon monoxide detection systems. Carbon monoxide detection systems, which include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075.

Reason: This proposal is intended to protect students and faculty from serious injury or possibly death from unintentional non-fire related carbon monoxide (CO) exposure by mandating the installation of CO detection devices in education occupancies. In the absence of a model code for the installation of CO detection in education occupancies each jurisdiction is developing its own regulations with varying installation requirements. For example, after several CO incidents in Connecticut (Public Act 11-248) and in

Maryland (SB 173), the Governors signed bills into law for the installation CO detection in education occupancies and left the location, performance, inspection, testing and maintenance of CO detection and warning equipment up to the Building Commission or the State Fire Marshal. Section 610 of the 2010 Fire Code New York State (FCNYS) requires CO detection in Group E occupancies.

Also a result of the national publicity generated from an incident at an Atlanta school (ABC News) that sent 42 students to hospitals, three states have introduced legislation requiring CO detection in schools.

. **Pennsylvania:**

<http://www.legis.state.pa.us/cfdocs/Legis/CSM/showMemoPublic.cfm?chamber=H&SPick=20130&cosponId=9878>

. **Florida:** <http://www.flsenate.gov/Session/Bill/20130116/BillText/Filed/HTML>

. **Georgia:** [HB 23](#)

Attached are fifty three (53) reports of CO incidents in schools from 2005 through 2012. Thirty (30) of these incidents were caused by problems with a permanently installed fuel burning appliance.

This proposal models the location requirements for schools after the current requirements in the 2012 edition of the IFC for detection in hotels, dormitories and apartment buildings as a basis.

The efficacy of voluntary national consensus codes, such as the IFC, ensures a collaborative, balanced and consensus-based process.

Cost Impact: Minimal cost as a percentage of the building valuation.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: Nationally the issue of requiring CO in Group E occupancies is becoming a larger concern. States and local governments are starting to draft requirements and the committee felt that it was important that the issue be dealt with at the model code level. It was noted that this proposal needs to be coordinated with F360-13.

Assembly Action:

None

Final Hearing Results

F182-12

AS

Code Change No: **F184-13**

Original Proposal

Section(s): 909.4.6 (IBC [F] 909.4.6, IMC [F] 513.4.6)

Proponent: Dave Frable representing U.S. General Services Administration, Public Buildings Service

Revise as follows:

909.4.6 (IBC [F] 909.4.6, IMC [F] 513.4.6) Duration of operation. All portions of ~~active or passive~~ engineered smoke control systems shall be capable of continued operation after detection of the fire event for a period of not less than either 20 minutes or 1.5 times the calculated egress time, whichever is ~~less~~ greater.

Reason: The intent of this code change is to provide clarification for determining the duration of operation for smoke control systems to ensure a tenable environment for occupants to either evacuate or relocate to a safe location within a building. In addition, the requirement has also been revised to determine the proper duration for the operation of the smoke control system to run during an emergency by correctly stating "whichever is greater" in lieu of "whichever is less". The 20 minute maximum time duration for the operation of the smoke control system is not sufficient for all evacuation situations and by revising the subject text, a more realistic and reasonable time duration for the operation of the smoke control system will be achieved.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved as it was felt the duration of the smoke control system operation should be tied specifically to the egress time.

Assembly Action:

None

Final Hearing Results

F184-12

AS

Code Change No: F185-13

Original Proposal

Section(s): 909.4 (IBC [F] 909.4, IMC [F] 513.4), 909.4.7 (New) [IBC [F] 909.4.7 (New), IMC [F] 513.4.7 (New)]

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee
(cbaldassarra@RJAGroup.com)

Revise as follows:

909.4 (IBC [F] 909.4, IMC [F] 513.4) Analysis. A rational analysis supporting the types of smoke control systems to be employed, their methods of operation, the systems supporting them and the methods of construction to be utilized shall accompany the submitted *construction documents* and shall include, but not be limited to, the items indicated in Sections 909.4.1 through ~~909.4.6~~ 909.4.6.7. [F]

909.4.7 (IBC [F] 909.4.7, IMC [F] 513.4.7) Smoke control system interaction. The design shall consider the interaction effects of the operation of multiple smoke control systems for all design scenarios.

Reason: The focus of this proposal is related to the interaction of multiple mechanical smoke control systems by asking for a specific analysis of the interaction of such systems similar to that required for the interaction of HVAC systems. The study of hoistway pressurization as an option for compliance with enclosed elevator lobby provisions drives the need to understand these interactions as stair pressurization will almost always be present in these buildings as well.

The CTC studied the need for elevator lobbies for traditional elevators (Section 713.14.1), FSAE (3007) and Occupant Evacuation elevators (3008). The Study Group assigned by the CTC conducted a technical analysis that concluded with several recommendations for the need for such lobbies and in addition provided a recommendation on the need for a closer analysis of buildings with more complexities. From this technical analysis the following excerpt is relative to this proposal.

In fact in many cases a traditional enclosed elevator lobby was determined to be unnecessary but for unusual building configurations there was more of a concern for interaction of systems and the negative impact of stack effect based upon the findings of the analysis. For instance, high-rise buildings may contain an atrium and will also use stair pressurization. In some cases hoistway pressurization could also be used as an option for compliance with the enclosed elevator lobby requirements. These are three smoke control systems that when running simultaneously may not work as intended. Below is recommendation 5 from the technical analysis.

5. Elevator hoistway pressurization design

- **The design of pressurization systems for elevator hoistways shall be based on a rational analysis in accordance with Section 909.4 that utilizes a network model approved by the AHJ and which includes an analysis of possible interactions between building shafts pressurized by different systems, and between pressurized and unpressurized shafts that exceed 420 feet in height.**

Add guidance to commentary for 909.4 that the rational analysis should show that the pressurization design will maintain the estimated Fractional Effective Dose (FED) below 0.5 and the estimated visibility distance above 25 feet within the stairway for 1.5 times the estimated evacuation time for each of the design fires selected.

- *Rationale: Taller buildings with more complex flow paths require analysis utilizing a network model that can account for these interacting flow paths. The criteria suggested for commentary represents the standard of practice for a fire hazard analysis performed as the required rational analysis.*

This proposal is one of several proposals submitted by the CTC Elevator lobby SG. The ICC Executive Board directed the Code Technology Committee (CTC) to study the issue of elevator lobby separations in November 2010 due to the number of code change proposals submitted addressing this issue over a number of code change cycles. The Code Technology Committee formed a study group on the elevator lobby separation issue in December 2010. Note that this subject had been previously addressed by CABO/BCMC in 1986 with a similar conclusion. The code change proposals submitted are the result of the CTC's study of the issue. Note that the scope of the activity was as follows:

Scope

- Review the need for elevator lobbies, with emphasis on building use, building and hoistway height, active and passive fire protection features associated with the aforementioned.
- Review the differences and specific needs when dealing with elevator lobbies of traditional-use elevators, fire service elevators, and occupant evacuation elevators.
- Review related code provisions, such as egress from and through elevator lobbies.
- Review the appropriate use of alternatives including pressurization of hoistways, additional doors, roll-down style barriers, and gasketing systems.
- Review with members of elevator industry to scope the requirements of applicable elevator reference standards as it deals with elevator lobby design, use and construction.
- Review design and construction requirements for elevator lobbies, including but not limited to dimensions, location and separation.
- Review applicable code change history, technical studies and loss statistics as part of this review.

Several proposals were submitted during the Group A Cycle and discussion of the content and outcome of these proposals and the full content of the technical analysis can be found at the following link. <http://www.iccsafe.org/cs/CTC/Pages/ElevatorLobbies.aspx>

Cost Impact: This proposal will increase the cost of construction where such analysis are not currently undertaken. It can be argued that such an analysis may possibly decrease the cost of construction. Potential delays can be avoided by reducing the need for rework after problems arise during commissioning as result of an upfront analysis. Also the upfront design analysis may eliminate possible excess capacity in the equipment.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The interaction of various smoke control systems such as stair pressurization, hoistway pressurization and atrium smoke control need to be addressed to make sure the systems will perform as designed . It was noted that this particular problem is dealt with on a regular basis.

Assembly Action:

None

Final Hearing Results

F185-12

AS

Code Change No: F186-13

Original Proposal

Section(s): 909.5 (IBC [F] 909.5, IMC [F] 513.5), 909.5.1 (IBC [F] 909.5.1, IMC [F] 513.5.1), 909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2)

Proponent: Jeffrey Tubbs, PE, FSFPE, Arup USA, Inc., representing self (jeff.tubbs@arup.com)

Revise as follows:

909.5 (IBC [F] 909.5, IMC [F] 513.5) Smoke barrier construction. Smoke barriers required for passive smoke control and a smoke control system using the pressurization method shall comply with Section 709, and shall be constructed and sealed to limit leakage areas exclusive of protected openings. The maximum allowable leakage area shall be the aggregate area calculated using the following leakage area ratios:

1. Walls: $A/A_w = 0.00100$
2. Interior *exit stairways* and *ramps* and *exit passageways*: $A/A_w = 0.00035$
3. Enclosed *exit access stairways* and *ramps* and all other shafts: $A/A_w = 0.00150$
4. Floors and roofs: $A/A_F = 0.00050$

where:

- A = Total leakage area, square feet (m^2).
 A_F = Unit floor or roof area of barrier, square feet (m^2).
 A_w = Unit wall area of barrier, square feet (m^2).

The leakage area ratios shown do not include openings due to gaps around doors, and operable windows, or similar gaps. The total leakage area of the smoke barrier shall be determined in accordance with Section 909.5.1 and tested in accordance with Section 909.5.2.

909.5.1 (IBC [F] 909.5.1, IMC [F] 513.5.1) Total Leakage area. The total leakage area of the barrier is the product of the *smoke barrier* gross area multiplied by the allowable leakage area ratio, plus the area of other openings such as gaps around doors and operable windows.

909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2) Testing of leakage area. Compliance with the maximum total leakage area shall be determined by achieving the minimum air pressure difference across the barrier with the system in the smoke control mode for mechanical smoke control systems utilizing the pressurization method. Compliance with the maximum total leakage area of passive smoke control systems shall be verified through methods such as door fan testing or other methods shall be as approved by the fire code official. ~~tested using other approved means such as door fan testing or other methods shall be as approved by the fire code official.~~

Reason: This code change clarifies leakage area calculation and testing, and clarifies requirements for passive smoke control systems.

Cost Impact: The code change may introduce a small to negligible cost impact to smoke control systems.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was a good clarification of the smoke barrier requirements as they relate to passive and pressurization type smoke control systems.

Assembly Action:

None

Final Hearing Results

F186-12

AS

Code Change No: F187-13

Original Proposal

Section(s): 909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2), 909.5.2.1 (New) [IBC [F] 909.5.2.1 (New), IMC [F] 513.5.2.1 (New)]

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Revise as follows:

909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2) Opening protection. Openings in *smoke barriers* shall be protected by automatic-closing devices actuated by the required controls for the mechanical smoke control system. Door openings shall be protected by fire door assemblies complying with Section 716.5.3 of the *International Building Code*.

Exceptions:

1. Passive smoke control systems with automatic-closing devices actuated by spot-type smoke detectors *listed* for releasing service installed in accordance with Section 907.3.
2. Fixed openings between smoke zones that are protected utilizing the airflow method.
3. In Group I-1 Condition 2, Group I-2 and ambulatory health care facilities, where ~~such doors are installed across corridors~~, a pair of opposite-swinging doors are installed across a corridor in accordance with Section 909.5.2.1, the doors shall not be required to be protected in accordance with Section 716 of the *International Building Code* ~~without a center mullion shall be installed having vision panels with fire-protection-rated glazing materials in fire protection-rated frames, the area of which shall not exceed that tested~~. The doors shall be close-fitting within operational tolerances and shall not have a center mullion or undercuts in excess of 3/4-inch, louvers or grilles. The doors shall have head and jamb stops, and astragals or rabbets at meeting edges and shall automatic-closing by smoke detection in accordance with Section 716.5.9.3 of the International Building Code. Where permitted by the door manufacturer's listing, ~~Positive-latching devices~~ are not required.
4. Group I-3.
5. Openings between smoke zones with clear ceiling heights of 14 feet (4267 mm) or greater and bank-down capacity of greater than 20 minutes as determined by the design fire size.

909.5.2.1 (IBC [F] 909.5.2.1, IMC [F] 513.5.2.1) Group I-1 Condition 2, I-2 and ambulatory care facilities. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, where doors are installed across a corridor, the doors shall be automatic closing by smoke detection in accordance with Section 716.5.9.3 of the International Building Code and shall have a vision panel with fire-protection rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested.

909.5.2.1 (IBC [F] 909.5.2.1, IMC [F] 513.5.2.1) 909.5.2.2 (IBC [F] 909.5.2.2, IMC [F] 513.5.2.2) Ducts and air transfer openings. (No change to current text)

Reason: Code changes FS76-07/08, G15-09/10 and FS40-12 have made amendments to IBC Section 709.5, exception 1 that are not reflected in Section 909.5.2. G31-12 added a new requirement for Group I-1 Condition 2 that needs to be picked up in 909.5.2.

Cost Impact: This is just a correlation between the two codes. Thus, there will be no increase in cost not already encountered.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal was approved as it was simply a correlation with revisions made to Chapter 10 during the Group A code change cycle. It was noted that the language proposed in the exception could use additional clarification.

Assembly Action:

None

Final Hearing Results

F187-12

AS

Code Change No: F188-13

Original Proposal

Section(s): 909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2)

Proponent: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

Revise as follows:

909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2) Opening protection. Openings in *smoke barriers* shall be protected by automatic-closing devices actuated by the required controls for the mechanical smoke control system. Door openings shall be protected by fire door assemblies complying with Section 716.5.3 of the *International Building Code*.

Exceptions:

1. Passive smoke control systems with automatic closing devices actuated by spot-type smoke detectors *listed* for releasing service installed in accordance with Section 907.10.
2. Fixed openings between smoke zones that are protected utilizing the airflow method.
3. In Group I-2 and ambulatory care facilities, where such doors are ~~installed across corridors~~, a pair of opposite-swinging doors installed across a corridor and without a center mullion, shall be installed having vision panels with fire-protection-rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested. The doors shall be close-fitting within operational tolerances and shall not have undercuts in excess of 1 inch, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges. Vision panels shall have fire-protection rated glazing materials in fire-protection-rated frames. The doors and shall be automatic-closing by smoke detection in accordance with Section 716.5.9.3 of the International Building Code. Where permitted by the door manufacturer's listing, Positive-latching devices are not required.
4. In Group I-2 and ambulatory care facilities, where such doors are special purpose horizontal sliding, accordion, or folding door assemblies installed in accordance with Section 1008.1.4.3 and are automatic closing by smoke detection in accordance with Section 716.5.9.3 of the International Building Code.
45. Group I-3.
56. Openings between smoke zones with clear ceiling heights of 14 feet (4267 mm) or greater and bank-down capacity of greater than 20 minutes as determined by the design fire size.

Reason: IFC Section 909.5.2 (and IBC Section 909.5.2) addresses requirements for opening protection in smoke barriers, as does IBC Section 709.5. This proposal updates IFC Section 909.5.2 (and IBC Section 909.5.2). The changing language, in IFC Section 909.5, requires smoke barriers to comply with the IBC, thus this language provides greater consistency with pertinent IBC requirements.

Also, IBC Section 709.5 includes an exception for doors complying with 1008.1.4.3 of the IBC, and IBC Section 1008.1.4.3 was revised for the 2015 IBC. The proposed language in Exception 4 for special purpose horizontal sliding, accordion, or folding door assemblies is intended to reflect this.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Modified

Substitute proposal as follows:

909.5.2 Opening protection. Openings in *smoke barriers* shall be protected by automatic-closing devices actuated by the required controls for the mechanical smoke control system. Door openings shall be protected by *fire door assemblies* complying with Section 716.5.3.

Exceptions:

1. Passive smoke control systems with automatic-closing devices actuated by spot-type smoke detectors *listed* for releasing service installed in accordance with Section 907.3.
2. Fixed openings between smoke zones that are protected utilizing the airflow method.
3. In Group I-2, where such doors are installed across corridors, a pair of opposite-swinging doors without a center mullion shall be installed having vision panels with fire protection-rated glazing materials in fire protection-rated frames, the area of which shall not exceed that tested. The doors shall be close-fitting within operational tolerances and shall not have undercuts, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges and shall be automatic-closing by smoke detection in accordance with Section 716.5.9.3. Positive-latching devices are not required.
4. In Group I-2 and ambulatory care facilities, where such doors are special purpose horizontal sliding, accordion, or folding door assemblies installed in accordance with Section 1008.1.4.3 and are automatic closing by smoke detection in accordance with Section 716.5.9.3 of the *International Building Code*.
45 Group I-3.
56 Openings between smoke zones with clear ceiling heights of 14 feet (4267 mm) or greater and bank-down capacity of greater than 20 minutes as determined by the design fire size.

Committee Reason: The proposal was revised through modification to only address the addition of a new exception 4. This eliminated conflict with F187-13. The new exception 4 addresses a new technology that had been added to the 2015 IBC during the Group A code change cycle. This proposal correlates with the 2015 IBC Section 1008.1.4.3.

Assembly Action:

None

Final Hearing Results

F188-13

AM

Code Change No: **F189-13**

Original Proposal

Section(s): 909.6.3 (New) [IBC [F] 909.6.3 (New), IMC [F] 513.6.3 (New)]

Proponent: Bob D. Morgan, P.E., Fort Worth, TX Fire Department representing Fire Advisory Board to North Central Texas Council of Governments

Revise as follows:

909.6.3 (IBC [F] 909.6.3, IMC [F] 513.6.3) Pressurized stairways and elevator hoistways. When stairways or elevator hoistways are pressurized, such pressurization systems shall comply with Section 909 as smoke control systems, in addition to the requirements of the Building Code Sections 909.20 and 909.21.

Reason: Section 909.6.3 specifically requires that stairway pressurization systems must comply as smoke control systems. Currently, Sections 909.20 and 909.21 of the Building Code are not copied into the Fire Code, leading to inconsistency with regards to design and controls for such systems, as well as, uncertainty on the part of designers as to the appropriate authority with regards to such. These are complicated systems and involve coordination between fire alarm systems and mechanical components – such should be a coordinated effort between Building and Fire Code Officials.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides needed correlation with the IBC.

Assembly Action:

None

Final Hearing Results

F189-12

AS

Code Change No: F190-13

Original Proposal

Section(s): 909.7 (IBC [F] 909.7, IMC [F] 513.7), 909.7.1 (IBC [F] 909.7.1, IMC [F] 513.7.1), 909.7.2 (IBC [F] 909.7.2, IMC [F] 513.7.2)

Proponent: Jeffrey Tubbs, PE, FSFPE, Arup USA, Inc., representing self (jeff.tubbs@arup.com)

Revise as follows:

909.7 (IBC [F] 909.7, IMC [F] 513.7) Airflow design method. When *approved* by the fire code official, smoke migration through openings fixed in a permanently open position, which are located between smoke control zones by the use of the airflow method, shall be permitted. The design airflow shall be in accordance with this section. Airflow shall be directed to limit smoke migration from the fire zone. The geometry of openings shall be considered to prevent flow reversal from turbulent effects. Smoke control systems using the airflow method shall be designed in accordance with NFPA 92.

909.7.1 (IBC [F] 909.7.1, IMC [F] 513.7.1) Velocity. The minimum average velocity through a fixed opening shall not be less than:

$$n = 217.2 [h(T_f - T_e)/(T_f + 460)]^{1/2} \text{ (Equation 9-2)}$$

$$\text{For SI: } n = 119.9 [h(T_f - T_e)/T_f]^{1/2}$$

where:

h = Height of opening, feet (m).

T_f = Temperature of smoke, °F (K).

T_e = Temperature of ambient air, °F (K).

n = Air velocity, feet per minute (m/minute).

909.7.2 (IBC [F] 909.7.2, IMC [F] 513.7.2) 909.7.1 (IBC [F] 909.7.1, IMC [F] 513.7.1) Prohibited conditions. This method shall not be employed where either the quantity of air or the velocity of the airflow will adversely affect other portions of the smoke control system, unduly intensify the fire, disrupt plume dynamics or interfere with exiting. In no case shall airflow toward the fire exceed 200 feet per minute (1.02 m/s). Where the formula in Section 909.7.1 calculated requires airflow to exceed this limit, the airflow method shall not be used.

Reason: This code change follows previous changes made to the exhaust method and references NFPA 92 Standard for Smoke Control Systems. NFPA 92 Section 5.10 details the use of the airflow method. Referencing NFPA 92 for the exhaust and airflow method provides a consistent approach for smoke control in atrium and other large volume spaces.

Cost Impact: The code change may introduce a small to negligible cost impact to smoke control systems.

Analysis: ADMIN UPDATE

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal reduces redundancy with NFPA 92 and will keep the requirements more consistent and current.

Assembly Action:

None

Final Hearing Results

F190-12

AS

Code Change No: F192-13

Original Proposal

Section(s): 909.12.1 (IBC [F] 909.12.1, IMC [F] 513.12.1), 909.20.6 (New)

Proponent: Jeffrey Tubbs, PE, FSFPE, Arup USA, Inc., representing self (jeff.tubbs@arup.com)

Revise as follows:

909.12 (IBC [F] 909.12, IMC [F] 513.12) Detection and control systems. Fire detection systems providing control input or output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and *listed* as smoke control equipment.

909.12.1 (IBC [F] 909.12.1, IMC [F] 513.12.1) Verification. Control systems for mechanical smoke control systems shall include provisions for verification. Verification shall include positive confirmation of actuation, testing, manual override, and the presence of power downstream of all disconnects. ~~A and, through a~~ preprogrammed weekly test sequence shall report abnormal conditions audibly, visually and by printed report. The preprogrammed weekly test shall operate all devices, equipment, and components.

Exception: Where verification of individual components tested through the preprogrammed weekly testing sequence will interfere with normal building operation and produce unwanted effects to normal building operation, such individual components are permitted to be bypassed from the weekly preprogrammed weekly testing, where approved by the code official and in accordance with the following:

1. Power supplies for components that are bypassed from the preprogrammed weekly test, such as power breakers, power disconnects, automatic transfer switches, motor starters, and motor controls, shall be electrically supervised by the listed control unit.
2. Testing of all components bypassed from the preprogrammed weekly test shall be in accordance with Section 909.20.6.

(Renumber subsequent sections)

909.20.6 Components bypassing weekly test. Where components of the smoke control system are bypassed by the preprogrammed weekly test required by Section 909.12.1 such components shall be tested semi-annually. The system shall also be tested under standby power conditions.

Reason: The current provisions require weekly tests of smoke control systems. For many systems, the weekly test requires the introduction of untreated air into the smoke zone. This can be impractical in areas with cold or hot climates, and for buildings that require close control of temperature and humidity, such as art museums and similar facilities. The introduction of the untreated air can also result in wasting energy to reheat, re-cool, humidify, or dehumidify the smoke control zone.

The intent of the current code provisions is to provide means to verify that the required systems will be available when needed. The code requires and will continue to require control units to comply with UL 864, thus all components of the control system will be supervised. The code change adds requirements for supervision of all power supply components such as power breakers, power disconnects, automatic transfer switches, motor starters, and motor controls. This will provide reasonable assurance that power will be available for all smoke control components, such as fans, dampers, doors, and windows. The code change also adds the semi-annual requirement for a complete system test. This allows the building owner to schedule complete system testing on days that will reduce the impact to the building and energy needs. The combination of additional supervision and additional testing provides a reasonable alternative to weekly testing.

Cost Impact: The code change allows optional additional features that may increase initial costs but reduce long-term operational costs.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal provides a viable option for the weekly preprogrammed test through semi-annual testing and more restrictive supervision requirements.

Assembly Action:

None

Public Comments

Public Comment:

Jeffrey Tubbs, Arup USA Inc, representing self, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

909.12 (IBC [F] 909.12; IMC [F] 513.12) Detection and control systems. Fire detection systems providing control input or output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of [Section 907](#). Such systems shall be equipped with a control unit complying with [UL 864](#) and *listed* as smoke control equipment.

909.12.1 (IBC [F] 909.12.1; IMC [F] 513.12.1) Verification. Control systems for mechanical smoke control systems shall include provisions for verification. Verification shall include positive confirmation of actuation, testing, manual override, and the presence of power downstream of all disconnects. A preprogrammed weekly test sequence shall report abnormal conditions audibly, visually and by printed report. The preprogrammed weekly test shall operate all devices, equipment, and components used for smoke control.

Exception: Where verification of individual components tested through the preprogrammed weekly testing sequence will interfere with normal building operation and produce unwanted effects to normal building operation, such individual components are permitted to be bypassed from the ~~weekly~~ preprogrammed weekly testing, where approved by the code official and in accordance with the following:

1. ~~Power supplies for Where the operation of components that are is~~ bypassed from the preprogrammed weekly test, such as power breakers, power disconnects, automatic transfer switches, motor starters, and motor controls, presence of power downstream of all disconnects shall be ~~electrically supervised~~ verified weekly by the ~~a~~ listed control unit.
2. Testing of all components bypassed from the preprogrammed weekly test shall be in accordance with Section 909.20.6.

(Renumber subsequent sections)

909.20.6 Components bypassing weekly test. Where components of the smoke control system are bypassed by the preprogrammed weekly test required by Section 909.12.1 such components shall be tested semi-annually. The system shall also be tested under standby power conditions.

Commenter's Reason: The intent of the current code provisions is to provide means to verify that the required systems will be available when needed. The code requires and will continue to require control units to comply with UL 864, thus all components of the control system will be supervised. The intent of the code change was to monitor the presence of power downstream rather than to mandate a specific method (electrical supervision vs monitoring of power) for monitoring the presence of power. The revised text retains the requirement to verify that power is present downstream of all disconnects without specifying any particular method, thereby allowing any method that is consistent with the listing of the control unit. As with the original code change, this modification includes the combination of additional supervision and additional testing, and thus provides a reasonable alternative to weekly testing.

Final Hearing Results

F192-13

AMPC

Code Change No: **F194-13**

Original Proposal

Section(s): [B] 909.21 (New)

Proponent: Joanne T. McCaughan, Code Specialist, Washington State Building Code Council, representing Washington State (joanne.mccaughan@des.wa.gov)

Add new text as follows:

[B] 909.21 Elevator hoistway pressurization alternative. Where elevator hoistway pressurization is provided in lieu of required enclosed elevator lobbies, the Pressurization system shall comply with Sections 909.21.1 through 909.21.11.

[B] 909.21.1 Pressurization requirements. Elevator hoistways shall be pressurized to maintain a minimum positive pressure of 0.10 inches of water (25 Pa) and a maximum positive pressure of 0.25 inches of water (67 Pa) with respect to adjacent occupied space on all floors. This pressure shall be measured at the midpoint of each hoistway door, with all elevator cars at the floor of recall and all hoistway doors on the floor of recall open and all other hoistway doors closed. The opening and closing of hoistway doors at each level must be demonstrated during this test. The supply air intake shall be from an outside uncontaminated source located a minimum distance of 20 feet (6096 mm) from any air exhaust system or outlet.

[B] 909.21.2 Rational analysis. A rational analysis complying with Section 909.4 shall be submitted with the construction documents.

[B] 909.21.3 Ducts for system. Any duct system that is part of the pressurization system shall be protected with the same fire-resistance rating as required for the elevator shaft enclosure.

[B] 909.21.4 Fan system. The fan system provided for the pressurization system shall be as required by Sections 909.21.4.1 through 909.21.4.4.

[B] 909.21.4.1 Fire resistance. When located within the building, the fan system that provides the pressurization shall be protected with the same fire-resistance rating required for the elevator shaft enclosure.

[B] 909.21.4.2 Smoke detection. The fan system shall be equipped with a smoke detector that will automatically shut down the fan system when smoke is detected within the system.

[B] 909.21.4.3 Separate systems. A separate fan system shall be used for each elevator hoistway.

[B] 909.21.4.4 Fan capacity. The supply fan shall either be adjustable with a capacity of at least 1,000 cfm (0.4719 m³/s) per door, or that specified by a registered design professional to meet the requirements of a designed pressurization system.

[B] 909.21.5 Standby power. The pressurization system shall be provided with standby power from the same source as other required emergency systems for the building.

[B] 909.21.6 Activation of pressurization system. The elevator pressurization system shall be activated upon activation of the building fire alarm system or upon activation of the elevator lobby smoke detectors. Where both a building fire alarm system and elevator lobby smoke detectors are present, each shall be independently capable of activating the pressurization system.

[B] 909.21.7 Special inspection. Special inspection for performance shall be required in accordance with Section 909.18.8. System acceptance shall be in accordance with Section 909.19.

[B] 909.21.8 Marking and identification. Detection and control systems shall be marked in accordance with Section 909.14.

[B] 909.21.9 Control diagrams. Control diagrams shall be provided in accordance with Section 909.15.

[B] 909.21.10 Control panel. A control panel complying with Section 909.16 shall be provided.

[B] 909.21.11 System response time. Hoistway pressurization systems shall comply with the requirements for smoke control system response time in Section 909.17.

Reason: In the 2012 IBC, a new sub-section, 909.21 Elevator hoistway pressurization, was provided in Chapter 9. This same sub-section was not added to the 2012 IFC. For code consistency between these two codes, this sub-section should be located in both codes. Instead of the IBC being the primary code for this section, it should be maintained under the Fire Code. Currently, there is potential conflict between Building and Fire Code enforcement and interpretation of the Codes in relation to these provisions. Adoption of this language into the 2015 IFC would eliminate the potential conflict.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved as it will provide more consistency between the IBC and IFC. Currently the provisions are only located with the IBC. It was noted that perhaps these provisions could be located before the maintenance provisions in current IFC Section 909.20.

Assembly Action:

None

Final Hearing Results

F194-13

AS

Code Change No: F195-13

Original Proposal

Section(s): 910 (IBC [F] 910), Table 901.6.1, Table 3206.2, 3206.7, Chapter 80 (IBC Chapter 35)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee
(cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 910 (IBC [F] 910) SMOKE AND HEAT REMOVAL

910.1 (IBC [F] 910.1) General. Where required by this code or otherwise installed, smoke and heat vents or mechanical smoke exhaust removal systems and draft curtains shall conform to the requirements of this section.

Exceptions:

- ~~1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an approved automatic sprinkler system.~~
- ~~2. Where areas of buildings are equipped with early suppression fast-response (ESFR) sprinklers, automatic smoke and heat vents shall not be required within these areas.~~

910.2 (IBC [F] 910.2) Where required. Smoke and heat vents or a mechanical smoke removal system shall be installed in the roofs of buildings or portions thereof occupied for the uses set forth in as required by Sections 910.2.1 and 910.2.2. In occupied portions of a building where the upper surface of the story is not a roof assembly, a mechanical smoke removal system in accordance with Section 910.4 shall be installed.

Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an approved automatic sprinkler system.
- ~~2. In occupied portions of a building where the upper surface of the story is not a roof assembly, mechanical smoke exhaust in accordance with Section 910.4 shall be an acceptable alternative.~~
2. Where areas of buildings are equipped with early suppression fast-response (ESFR) sprinklers, smoke and heat removal shall not be required within these areas.

910.2.1 (IBC [F] 910.2.1) Group F-1 or S-1. Smoke and heat vents installed in accordance with Section 910.3 or a mechanical smoke removal system installed in accordance with Section 910.4 shall be installed in buildings and portions thereof used as a Group F-1 or S-1 occupancy having more than 50,000 square feet (4645 m²) of undivided area.

Exception: Group S-1 aircraft repair hangars.

910.2.2 (IBC [F] 910.2.2) High-piled combustible storage. Smoke and heat removal required by Table 3206.2, for buildings and portions thereof containing high-piled combustible ~~stock or rack~~ storage shall be installed in accordance with Section 910.3 in unsprinklered buildings. In buildings and portions thereof containing high-piled combustible storage equipped throughout with an automatic sprinkler system in

accordance with Section 903.3.1.1 in any occupancy group when required by Section 3206.7, a smoke and heat removal system shall be installed in accordance with Section 910.3 or 910.4.

910.3 (IBC [F] 910.3) Smoke and heat vents Design and installation. The design and installation of smoke and heat vents and draft curtains shall be as specified in accordance with Sections 910.3.1 through 910.3.3 910.3.5.2 and Table 910.3.

**TABLE 910.3 (IBC [F] TABLE 910.3)
REQUIREMENTS FOR DRAFT CURTAINS AND SMOKE AND HEAT VENTS**

910.3.1 (IBC [F] 910.3.1) Design-Listing and labeling. Smoke and heat vents shall be *listed* and labeled to indicate compliance with UL 793 or FM 4430.

910.3.2 (IBC [F] 910.3.2) Vent operation. Smoke and heat vents shall be capable of being operated by *approved* automatic and manual means. Automatic operation of smoke and heat vents shall conform to the provisions of Sections 910.3.2.1 through 910.3.2.3.

910.3.2.1 (IBC [F] 910.3.2.1) Gravity-operated drop-out vents. Automatic smoke and heat vents containing heat sensitive glazing designed to shrink and drop out of the vent opening when exposed to fire shall fully open within 5 minutes after the vent cavity is exposed to a simulated fire, represented by a time-temperature gradient that reaches an air temperature of 500°F (260°C) within 5 minutes.

910.3.2.2 (IBC [F] 910.3.2.2) Sprinklered buildings. Where installed in buildings provided with an *approved automatic sprinkler system*, smoke and heat vents shall be designed to operate automatically.

910.3.2.3 (IBC [F] 910.3.2.3) Nonsprinklered buildings. Where installed in buildings not provided with an *approved automatic sprinkler system*, smoke and heat vents shall operate automatically by actuation of a heat responsive device rated at between 100°F (38°C) and 220°F (104°C) above ambient.

Exception: Gravity-operated drop-out vents complying with Section 910.3.2.1.

910.3.3 (IBC [F] 910.3.3) Vent dimensions. The effective venting area shall not be less than 16 square feet (1.5 m²) with no dimension less than 4 feet (1219 mm), excluding ribs or gutters having a total width not exceeding 6 inches (152 mm).

910.3.2 (IBC [F] 910.3.2) 910.3.4 (IBC [F] 910.3.4) Smoke and heat vent locations. Smoke and heat vents shall be located 20 feet (6096 mm) or more from adjacent *lot lines* and *fire walls* and 10 feet (3048 mm) or more from *fire barriers*. Vents shall be uniformly located within the roof in the areas of the building where the vents are required to be installed by Section 910.2, with consideration given to roof pitch, ~~draft curtain location~~, sprinkler location and structural members.

910.3.3 Smoke and heat vents area. The required aggregate area of smoke and heat vents shall be calculated as follows:

For buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1:

$$A_{VR} = V/9000 \quad \text{(Equation 9-4)}$$

Where:

A_{VR} = the required aggregate vent area (ft²)
 V = volume (ft³) of the area that requires smoke removal

For unsprinklered buildings:

$$A_{VR} = A_{FA}/50 \quad \text{(Equation 9-5)}$$

Where:

A_{VR} = the required aggregate vent area (ft²)

A_{FA} = the area of the floor of the area that requires smoke removal.

910.3.5 (IBC [F] 910.3.5) Draft curtains. Where required by Table 910.3, draft curtains shall be installed on the underside of the roof in accordance with this section.

Exception: Where areas of buildings are equipped with ESFR sprinklers, draft curtains shall not be provided within these areas. Draft curtains shall only be provided at the separation between the ESFR sprinklers and the non-ESFR sprinklers.

910.3.5.1 (IBC [F] 910.3.5.1) Construction. Draft curtains shall be constructed of sheet metal, lath and plaster, gypsum board or other approved materials that provide equivalent performance to resist the passage of smoke. Joints and connections shall be smoke tight.

910.3.5.2 (IBC [F] 910.3.5.2) Location and depth. The location and minimum depth of draft curtains shall be in accordance with Table 910.3.

910.4 (IBC [F] 910.4) Mechanical smoke removal systems exhaust. Where approved by the fire code official, engineered mechanical smoke removal systems exhaust shall be designed and installed in accordance with Sections 910.4.1 through 910.4.7 an acceptable alternative to smoke and heat vents.

910.4.1 Automatic sprinklers required. The building shall be equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

910.4.2 (IBC [F] 910.4.2) Exhaust fan construction. Exhaust fans that are part of a mechanical smoke removal system shall be rated for operation at 105 deg. C. Exhaust fan motors shall be located outside of the exhaust fan air stream.

910.4.3 (IBC [F] 910.4.3) System design criteria. The mechanical smoke removal system shall be sized to exhaust the building at a minimum rate of two air changes per hour based upon the volume of the building or portion thereof without contents. The capacity of each exhaust fan shall not exceed 30,000 cubic feet per minute.

910.4.3.1 Make-up air. Make-up air openings shall be provided within six feet (add metric) of the floor level. Operation of makeup air openings shall be manual or automatic. The minimum gross area of make-up air inlets shall be 8 ft² per 1000 cfm of smoke exhaust.

910.4.4 (IBC [F] 910.4.4) Activation. The mechanical smoke removal system shall be activated by manual controls only.

910.4.5 (IBC [F] 910.4.5) Manual control location. Manual controls shall be located so as to be accessible to the fire service from an exterior door of the building and be protected against interior fire exposure by not less than 1-hour fire barriers constructed in accordance with Section 707 of the *International Building Code* or horizontal assemblies constructed in accordance with Section 712 of the *International Building Code*, or both.

910.4.1 (IBC [F] 910.4.1) Location. Exhaust fans shall be uniformly spaced within each draft-curtained area and the maximum distance between fans shall not be greater than 100 feet (30 480 mm).

910.4.2 (IBC [F] 910.4.2) Size. Fans shall have a maximum individual capacity of 30,000 cfm (14.2 m³/s). The aggregate capacity of smoke exhaust fans shall be determined by the equation:

$$C = A \times 300 \text{ — (Equation 9-4)}$$

where:

C = Capacity of mechanical ventilation required, in cubic feet per minute (m³/s).

A = Area of roof vents provided in square feet (m²) in accordance with Table 910.3.

910.4.3 (IBC [F] 910.4.3) Operation. Mechanical smoke exhaust fans shall be automatically activated by the *automatic sprinkler system* or by *heat detectors* having operating characteristics equivalent to those described in Section 910.3.2. Individual manual controls for each fan unit shall also be provided.

910.4.6 (IBC [F] 910.4.6) 910.4.4 (IBC [F] 910.4.4) Control wiring and control. Wiring for operation and control of mechanical smoke removal systems exhaust fans shall be connected ahead of the main disconnect in accordance with Section 701.12E of NFPA 70 and be protected against interior fire exposure to temperatures in excess of 1,000°F (538°C) for a period of not less than 15 minutes. ~~Controls shall be located so as to be immediately accessible to the fire service from the exterior of the building and protected against interior fire exposure by not less than 1-hour fire barriers constructed in accordance with Section 707 of the International Building Code or horizontal assemblies constructed in accordance with Section 711 of the International Building Code, or both.~~

910.4.5 (IBC [F] 910.4.5) Supply air. Supply air for exhaust fans shall be provided at or near the floor level and shall be sized to provide a minimum of 50 percent of required exhaust. Openings for supply air shall be uniformly distributed around the periphery of the area served.

910.4.7 (IBC [F] 910.4.7) 910.4.6 (IBC [F] 910.4.6) Interlocks Controls. ~~On combination comfort air-handling/smoke removal systems or independent comfort air-handling systems, fans shall be controlled to shut down in accordance with the approved smoke control sequence. Where building air handling and mechanical smoke removal systems are combined or where independent building air-handling systems are provided, fans shall automatically shut down in accordance with the International Mechanical Code. The manual controls provided for the smoke removal system shall have the capability to override the automatic shutdown of fans that are part of the smoke removal system.~~

910.5 Maintenance. Smoke and heat vents and mechanical smoke removal exhaust systems shall be maintained in an operative condition in accordance with Section 910.5.1 or 910.5.2, respectively NFPA 204.

910.5.1 Smoke and heat vents. Smoke and heat vents shall be maintained in an operative condition in accordance with NFPA 204 and Section 910.5.1.1

910.5.1.1 Fusible links. Fusible links for smoke and heat vents shall be promptly replaced whenever fused, damaged or painted. ~~Smoke and heat vents and mechanical smoke exhaust systems shall not be modified.~~

910.5.2 Mechanical smoke removal systems. Mechanical smoke removal systems shall be maintained in accordance with the equipment manufacturer's maintenance instructions and Sections 910.5.2.1 through 910.5.2.4.

910.5.2.1 Frequency. Systems shall be operationally tested not less than once per year. Testing shall include the operation of all system components including control elements.

910.5.2.2 Testing. Operational testing of the mechanical smoke removal system shall include all equipment such as fans, controls and make-up air openings.

910.5.2.3 Schedule. A routine maintenance and operational testing program shall be initiated and a written schedule for routine maintenance and operational testing shall be established.

910.5.2.4 Written record. A written record of mechanical smoke exhaust system testing and maintenance shall be maintained on the premises. The written record shall include the date of the maintenance, identification of the servicing personnel and notification of any unsatisfactory condition and the corrective action taken, including parts replaced.

901.6.1 Standards. Fire protection systems shall be inspected, tested and maintained in accordance with the referenced standards listed in Table 901.6.1.

**TABLE 901.6.1
FIRE PROTECTION SYSTEM MAINTENANCE STANDARDS**

SYSTEM	STANDARD
Portable fire extinguishers	NFPA 10
Carbon dioxide fire-extinguishing system	NFPA 12
Halon 1301 fire-extinguishing systems	NFPA 12A
Dry-chemical extinguishing systems	NFPA 17
Wet-chemical extinguishing systems	NFPA 17A
Water-based fire protection systems	NFPA 25
Fire alarm systems	NFPA 72
Mechanical smoke exhaust systems	NFPA 204
Smoke and heat vents	NFPA 204
Water-mist systems	NFPA 750
Clean-agent extinguishing systems	NFPA 2001

Revise as follows:

**TABLE 3206.2
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS**

COMMODITY CLASS	SIZE OF HIGH-PILED STORAGE AREA ^a (square feet) (see Sections 3206.2 and 3206.4)	ALL STORAGE AREAS (See Sections 3206, 3207 and 3208) ^b					SOLID-PILED STORAGE, SHELF STORAGE AND PALLETIZED STORAGE (see Section 3207.3)		
		Automatic fire-extinguishing system (see Section 3206.4)	Fire detection system (see Section 3206.5)	Building access (see Section 3206.6)	Smoke and heat removal (see Section 3206.7)	Draft curtains (see Section 3206.7)	Maximum pile dimension ^c (feet)	Maximum permissible storage height ^d (feet)	Maximum pile volume (cubic feet)
<i>(Portions of table not shown remain unchanged)</i>									

3206.7 Smoke and heat removal. Where smoke and heat removal is are required by Table 3206.2, smoke and heat vents it shall be provided in accordance with Section 910. Where draft curtains are required by Table 3206.2, they shall be provided in accordance with Section 910.3.5.

Add new standard to Chapter 80 (IBC Chapter 35) as follows:

FM

4430-12 Approval Standard for Heat and Smoke Vents 910.3.1

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas

of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty-five meetings - all open to the public.

This proposed code change is a result of the CTC's investigation of smoke and heat removal through the Roof Vent Study Group (RVSG), which is part of the area of CTC study entitled "Balanced Fire Protection" the scope of which is: *"To investigate what constitutes an acceptable balance between active fire protection and passive fire protection measures with respect to meeting the fire and life safety objectives of the IBC."* As part of the CTC's review of the "balanced" fire protection issue, the CTC formed the RVSG to study the issue of smoke and heat vents with specific emphasis on: building area; sprinkler versus non sprinkler operation; impact on fire-fighting operations; relationship to the on-going updating of NFPA 204; the need for smoke and heat vent design requirements, regardless if smoke and heat vents are mandated by the code. The RVSG was formed in October 2006 and has been working on this issue since January 2007 and developed code change proposal F144-09/10 which was disapproved by the ICC membership. This subsequent code change proposal is a result of continued RVSG study on the issue.

The purpose of this code change proposal is to update the provisions which mandate roof smoke and heat removal systems in industrial and storage buildings based upon technical information on the operation of roof vents which has been developed in the United States over the last 20 years. The RVSG has developed its proposed revisions to the roof vent provisions based upon the following:

- ❖ Research on the interaction of sprinklers, roof vents and draft curtains funded by the National Fire Protection Research Foundation (NFPRF) and conducted at Underwriters Laboratories (UL) in 1997/1998. This research is summarized in a document referred to as National Institute of Science and Technology Interagency Report (NISTIR) 6196-1 dated September, 1998.
- ❖ Provisions for the use of roof vents in sprinklered buildings included in the 2010 and 2013 edition of NFPA 13, including the substantiation statement for the NFPA 13 roof vent provisions.
- ❖ The capability of standard spray sprinklers to both control and/or extinguish a fire within 30 minutes of sprinkler operation, without supplemental fire department activity has been documented.
- ❖ Recommendations contained in National Institute for Occupational Safety and Health (NIOSH) 2005-132, *Preventing Injuries and Deaths of Fire Fighters Due to Truss Systems*, and NIOSH 2010-153, *Preventing Deaths and Injuries of Fire Fighters using Risk Management Principles at Structure Fires*.
- ❖ Recommendations contained in the Initial Report of the Federal Emergency Management Agency (FEMA)/National Fallen Firefighter Foundation (NFFF[®]) Firefighter Life Safety Summit held on April 14, 2004 in Tampa, Florida.

The RVSG determined that the primary purpose of smoke and heat removal from the perspective of the building code requirement is to assist fire-fighting operations after control of the fire has been achieved by the automatic sprinkler system.. Automatic smoke and heat vents and automatic sprinkler systems were developed independently of one another and their interaction has been a concern for many years. Even today, there is no accepted method of analyzing their interaction and, therefore, the installation standards for each (NFPA 204 and NFPA 13, respectively) give cautions to the designers of buildings having both systems.

The RVSG also determined that a manually-activated mechanical smoke removal system could perform the same function as roof vents. This code change increases the emphasis and acceptability of mechanical smoke removal systems as an acceptable alternative to smoke and heat vents. Mechanical smoke removal systems as prescribed in this code change provide fire-rated, grade-level enclosures for the control of the mechanical smoke removal system. This provides greater control of the system for the fire incident commander and reduces the need to place fire fighters on roofs or in other hazardous situations to operate smoke and heat venting systems. This methodology is consistent with the latest recommendations from NIOSH and NFFF for fire fighter safety, risk management and recommended fire- fighting tactics.

Summary of general provisions of the proposal:

- Either automatic roof vents or a manually-activated mechanical smoke removal system are permitted to be provided in industrial and storage buildings protected by a sprinkler system (in buildings where these provisions are applicable).
- Only roof vents should be permitted to be provided in storage buildings with high-piled storage which are not protected by a sprinkler

system (i.e., buildings which contain high-piled storage with an area between 2,500 and 12,000 square feet). The rationale for this provision is that a mechanical smoke removal system capable of handling temperatures between 1,000° F and 2,000° F cannot be practically provided at a reasonable cost.

- Provisions for the design of a manually-activated mechanical smoke removal system have been included. These provisions require that the mechanical smoke removal system be sized to provide a minimum exhaust rate of 2 air changes per hour based upon the enclosed volume of the building space to be exhausted, without any deductions for the space occupied by storage or equipment. An exhaust rate of 2 air changes per hour is based on an analysis assuming a conservative approach using a Factory Mutual Research Corporation (FMRC) Standard Plastic Commodity (polystyrene cups in compartmented cartons). This commodity is recognized to represent a severe fire hazard of high density plastics. In a calculation based on this commodity, a maximum of 68,960 cfm of smoke was generated by the design fire. Based upon an empty building volume of 2.659 million cubic feet, the exhaust rate required to achieve two air changes per hour is 88,633 cfm. Because no single fan can exceed 30,000 cfm, this building required five fans, each exhausting 25,570 cfm for a total of 127,850 cfm. This exceeds the minimum two air changes per hour by more than 40 percent. Even at the minimum required rate of two air changes per hour, the calculation results show that the mechanical smoke removal system proposed will be capable of removing the smoke from the building faster than it will be generated, ultimately removing smoke from the building once the fire is extinguished. A degree of conservatism is added to this by the calculation using an empty building volume.
- Provisions for the design of roof vents in buildings protected by a sprinkler system have been modified to require that the area of roof vents provide equivalent venting to that required for the mechanical smoke removal system (2 air changes per hour) based upon an assumption that each square foot of vent area will provide 300 cubic feet per minute (cfm) of ventilation. The reason for this requirement is that the roof vents should at least provide venting equivalent to the minimum venting provided by the mechanical smoke removal system. A factor of 300 cfm of venting per square foot of vent area is presently included in the 2012 edition of the *International Building Code*, although the use of this conversion factor is questionable at best. The actual ventilation provided by each square foot of vent area will depend upon the temperature differential between ambient conditions and the smoke layer under the roof deck or the pressure achieved if positive pressure ventilation is utilized. If the prescribed value is not practical for a given building design, designers have the option of demonstrating other values which provide the same performance under the alternate method of design provisions in the code.
- Provisions for the design of roof vents in buildings not protected by a sprinkler system have been revised (simplified) to require that the ratio of the area of the vents to the floor area be a minimum of 1:50. The rationale for this revision is that the case where roof vents will be provided without sprinkler protection will be rare: buildings which contain high-piled storage with an area between 2,500 and 12,000 square feet. Given that this situation will be rare, a complex analysis to determine the required area of roof vents is unnecessary. The ratio of vent area to floor area of 1:50 is conservative based upon the present requirements included in the *International Building and Fire Codes*.
- Provisions for the mechanical smoke removal system permit the system to be designed to handle air at ambient temperature provided that the fan motors are located outside the air stream. The basis for this provision is the thermocouple temperature data for the large-scale fire tests conducted at UL in 1997/1998, specifically Tests P-1 and P-4. (In Tests P-1 and P-4, no vents opened so the ceiling temperatures recorded would be unaffected by the activation of vents. See Pages 40 and 52 of the NISTIR 6196-1 report dated September 1998 (on the CTC web site) for the thermocouple temperature data recorded as a function of time.)
 - The exposing temperatures and time periods were reviewed and not considered to pose a threat to the building structure, fans or power wiring.
 - The sprinkler activation times and ceiling temperature data for the five large-scale fire tests summarized in NISTIR 6196-1 indicate that the exposure of mechanical exhaust fans and ducts located at the ceiling to high temperatures will be relatively short. Since it is anticipated that the exhaust system will only be activated after the arrival of fire fighters at the scene (estimated to be 7 minutes or longer after ignition), ceiling temperatures should be reduced sufficiently to allow fans rated for only ambient temperatures to be used for the exhaust system.
- The existing provisions for the design of a mechanical exhaust system indicate that the electrical power supply for the system is to be wired ahead of the main building disconnect for increased reliability and to facilitate fire-fighting operations. This existing provision will remain as no adverse experience has been cited.

- The provisions for the design of a mechanical smoke removal system indicate that wiring providing power to exhaust fans located in the interior of the building is to be protected by materials which will provide a 15 minute finish rating protection. The ceiling temperature data collected in the five large-scale fire tests summarized in NISTIR 6196-1 (cited above) show that temperatures at the ceiling will be far less than the exposure temperatures defined by the ASTM E119 time-temperature curve and that the ceiling temperatures will rapidly decrease once sprinklers activate. The ceiling temperature data included in NISTIR 6196-1 indicates that providing 15 minute finish rating protection for the interior electrical power supply is more than adequate to prevent damage to the power supply wiring for the exhaust system.
- The provisions pertaining to draft curtains included in the code have been removed. The rationale for removing the provisions for draft curtains is that research conducted by Factory Mutual Research Corporation (FMRC) in 1994 and the research conducted at UL in 1997/1998 demonstrated that draft curtains affect the sequence of operation of sprinklers and may have an adverse effect on sprinkler operation.

Although the mechanical smoke removal system or roof vent system outlined above are intended to be utilized to assist fire fighters after fire control has been achieved, either one of these systems can be utilized to assist interior manual fire-fighting operations. In order to utilize the roof vent system to assist with manual interior fire-fighting, it will likely be necessary that the vents will have to be opened manually by sending fire fighters to the roof if this is within the responding fire department's operating procedures.

It should be noted that the effectiveness of manually-opened roof vents will be marginal at best once sprinklers have operated and the ceiling temperatures drop to near ambient. Hence, in order for roof vents to be of assistance for interior manual fire-fighting, fire fighters will likely either need to pressurize the building using positive pressure ventilation (PPV) or exhaust the building with supplemental equipment.

It should also be noted that this proposed code change does not make reference to NFPA 204 for the design of roof vent systems in either buildings protected by a sprinkler system or unsprinklered buildings. The rationale for this is that NFPA 204 does not address the use of roof vents in sprinklered buildings and the design provisions for roof vents presently included in NFPA 204 are too complex for application to relatively small buildings where vents would be permitted without sprinkler protection (i.e., buildings with high-piled storage less than 12,000 square feet in floor area).

The proposed code change developed by the RVSG is intended to incorporate the latest technology and research available on the interaction of sprinklers, roof vents and draft curtains, as well as the evolving thinking on fire fighter safety promoted by NIOSH and the NFFF into the code provisions.

The information on which this code change proposal is based did not exist when the provisions for roof vents were first included in the building and fire codes in the 1970s and 1980s. This proposal is a much needed update in the fire protection provisions for large industrial and storage buildings. A section-by-section summary follows:

910.1: The phrase "...or otherwise installed..." has been removed to clarify that these provisions are specific to required systems. None of the requirements in the section must be mandatory for non-required systems. Terminology was changed from "exhaust" to "removal" for consistency of terminology. This section is a general section but the exceptions are specific to when a smoke and heat removal system is required; therefore, the exceptions have been relocated to Section 910.2.

910.2: Exceptions 1 and 3 in this section have been relocated here from Section 910.1 as they are specific to when a smoke and heat removal system is required. In Exception 2, terminology has been changed from "exhaust" to "removal" for consistency of terminology. Additionally, the use of a mechanical smoke removal system is made mandatory instead of optional since it is the only practical way to provide smoke and heat removal in multi-story buildings.

910.2.1: This section has been editorially reworded into a complete sentence and mechanical smoke removal has been made an option for smoke and heat removal without requiring specific approval. Companion changes to the remainder of Section 910 have been made to move mechanical smoke removal as an option to smoke and heat venting.

910.2.2: This section has had a reference to IFC Table 3206.2 added and the reference to Section 3206.7 removed because Section 3206.2 sends the code user to the table first and then the table sends the user to Section 3206.7. The phrase "...stock or rack..." were removed because high-piled storage is not limited to stock or rack storage. The intent of the overall code change is to require smoke and heat vents as the method for protecting unsprinklered buildings and provide the option of vents or mechanical smoke removal for sprinklered buildings. This section was revised to accomplish that goal by referencing Section 910.3 for design of roof vents in non-sprinklered buildings and either Section 910.3 or 910.4 for sprinklered buildings.

910.3: This section has been revised to remove the reference to draft curtains as explained in the general reason statement. Additionally, the section and table references were updated to address section format changes.

Table 910.3: The table has been deleted and replaced with new Section 910.3.3 for calculation of required roof vent area.

910.3.1: The option to use FM Standard 4430 as an alternative to UL 793 has been added. Some manufacturers of roof vents only maintain an FM approval of their product, not a UL listing. Hence, making the UL standard the sole standard would require vents with only a FM approval to have their products tested by UL. FM 4430 and UL 793 are very similar in content. Permissive language contained in previous FM standards has been replaced with mandatory language in the most recent edition of the FM standard.

Current 910.3.2: Specific requirements for vent operation have been deleted. In (storage) buildings protected by a sprinkler system, the roof vent provisions contained in NFPA 13 dictate the temperature rating of the fusible element. Hence, there is no need to specify the temperature rating of the fusible element of the vent. With respect to the use of vents in unsprinklered high-piled storage areas, the temperature rating of the fusible element is not all that important. A listed fusible link or listed drop-out vent will operate when exposed to temperatures in excess of 1,000 degrees F. This issue is addressed in both the UL and FM standards for roof vents.

Proposed 910.3.2: This section has been relocated as indicated and revised to remove the reference to draft curtains as previously explained in the general reason statement.

Current 910.3.3: This section is to be deleted and replaced with new Section 910.3.3 that provides a simplified calculation for vent area. With respect to the minimum size of the vents, installing vents with dimensions less than 4 feet is not practical or economical. The more holes put in the roof, the more likely there is to be roof leakage problems. Hence, the minimum size of vents is "self-policing" from a practical and economic standpoint.

Proposed 910.3.3: The design of roof vent area has been simplified with two equations, one for sprinklered buildings and one for non-sprinklered buildings. A detailed explanation of the derivation of the equations is provided in the general reason statement.

910.3.5: The section on draft curtains has been removed. As detailed in the general reason statement, draft curtains can interfere with sprinkler operation and the RVSG found no evidence that they provided a valuable enhancement to roof vent performance.

910.4: This section has been revised to remove the qualification that a fire code official must approve the use of mechanical smoke removal systems. This code change changes mechanical smoke removal from an optional method that requires additional approval to an equally recognized, ~~if not superior~~, method of smoke removal that can be chosen without additional approval required. To address the qualifications for mechanical system use, additional prescriptive conditions were added to replace the case-by-case approval method.

910.4.1: This condition of mechanical system use requires that the building be sprinklered to protect the mechanical equipment from excessive heat.

Current 910.4.2: This section is deleted and replaced by new Section 910.4.3.

Proposed 910.4.2: This section requires exhaust fan motors be located out of the exhaust stream to protect the mechanical equipment from excessive heat.

Current 910.4.3: This section was deleted and replaced with **Section 910.4.4** and requires that mechanical systems are to be activated manually so that the fire department is in control of the system. In some situations, automatic operation could cause a fire to grow or spread, opening an excessive number of sprinklers. Automatic operation of the mechanical smoke removal system could be detrimental to the operation of the sprinkler system in a manner similar to draft curtains. The effect of the automatic mechanical smoke removal system on sprinkler operation would depend upon when the system was activated. The sooner the system is automatically activated, the greater the detrimental effect. The fire department will retain the option to shut down the exhaust system, as well.

Proposed 910.4.3. and 910.4.3.1: These sections specify the design requirement for the minimum number of air changes, maximum fan capacity, and requirements for the provision of make-up air. Based on NFPA 92-2012, Annex Section A-4.4.4.1, the maximum air velocity through the make-up air inlet is 1 m/sec or 200 ft/min. The area requirement is then derived as follows:

- Effective Vent Area = (1000 ft³/min)/(200 ft/min) = 5 ft² per 1000 cfm
- Assume an orifice coefficient of 0.6
- Gross Vent Area = 5 ft²/(0.6) = 8.33 ft² per 1000 cfm, which is rounded down due to the conservative nature of the requirement

The reason for this limitation is to prevent significant deflection of the plume, which will cause more air entrainment into the plume and more smoke production. This criteria is conservative as the requirement above assumes an active fire and the design philosophy for this code proposal is to provide post-fire smoke exhaust.

Current 910.4.5: This section has been deleted and replaced with more specific make-up air requirements in Section 910.4.3.

Proposed 910.4.5: This section establishes the required placement, access and protection of the manual controls to ensure the fire fighters will have quick and protected access to the controls.

910.4.6: This current section has been renumbered from 906.4.4 and addresses wiring and control. New Section 910.4.5 addresses the control system so the control provisions were removed from this section. The remaining text is unchanged.

910.4.7: This section has been revised to require that if a mechanical smoke removal system is integrated with a standard HVAC system, then the system must shut down upon detection of smoke as required by the IMC. This is a companion change to the new requirement in proposed Section 910.4.4 that mechanical smoke removal systems shall be manually operated only.

910.5 and Table 901.6.1. The reference to NFPA 204 for the maintenance of smoke and heat vents was retained; however, the reference to NFPA 204 for mechanical systems was removed and replaced with prescriptive testing and maintenance requirements placed in proposed Section 910.5.2. The RVSG determined that the maintenance requirements in NFPA 204 were not specific enough to ensure the necessary maintenance. In Section 910.5.1.1, the statement that vents cannot be modified was removed because it is not a maintenance issue. Modification of vents can be accomplished in a code compliant manner and such modification would require a building permit.

Table 3206.2: As previously noted, draft curtain requirements have been deleted and as a companion change, the column in IFC Table 3206.2 that prescribes draft curtain installation has been deleted.

Cost Impact: This proposal will not increase the cost of constructing industrial and storage buildings, and, in many cases, will reduce the cost of constructing these types of buildings.

Analysis: A review of the standard proposed for inclusion in the code, FM 4430-12, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of FM4430 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Modified

Modify the proposal as follows:

SECTION 910 (IBC [F] 910) SMOKE AND HEAT REMOVAL

910.1 (IBC [F] 910.1) General. Where required by this code, smoke and heat vents or mechanical smoke removal systems shall conform to the requirements of this section.

910.2 (IBC [F] 910.2) Where required. Smoke and heat vents or a mechanical smoke removal system shall be installed as required by Sections 910.2.1 and 910.2.2. ~~In occupied portions of a building where the upper surface of the story is not a roof assembly, a mechanical smoke removal system in accordance with Section 910.4 shall be installed.~~

Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an *approved automatic sprinkler system*.
2. Where areas of buildings are equipped with early suppression fast-response (ESFR) sprinklers, smoke and heat

removal shall not be required within these areas.

910.2.1 (IBC [F] 910.2.1) Group F-1 or S-1. Smoke and heat vents installed in accordance with Section 910.3 or a mechanical smoke removal system installed in accordance with Section 910.4 shall be installed in buildings and portions thereof used as a Group F-1 or S-1 occupancy having more than 50,000 square feet (4645 m²) of undivided area. In occupied portions of a building equipped throughout with a sprinkler system in accordance with Section 903.3.1.1 where the upper surface of the story is not a roof assembly, a mechanical smoke removal system in accordance with Section 910.4 shall be installed.

Exception: Group S-1 aircraft repair hangars.

910.2.2 (IBC [F] 910.2.2) High-piled combustible storage. Smoke and heat removal required by Table 3206.2, for buildings and portions thereof containing high-piled combustible storage shall be installed in accordance with Section 910.3 in unsprinklered buildings. In buildings and portions thereof containing high-piled combustible storage equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 a smoke and heat removal system shall be installed in accordance with Section 910.3 or 910.4. In occupied portions of a building equipped throughout with a sprinkler system in accordance with Section 903.3.1.1 where the upper surface of the story is not a roof assembly, a mechanical smoke removal system in accordance with Section 910.4 shall be installed.

910.3 (IBC [F] 910.3) Smoke and heat vents. The design and installation of smoke and heat vents shall be in accordance with Sections 910.3.1 through 910.3.3.

910.3.1 (IBC [F] 910.3.1) Listing and labeling. Smoke and heat vents shall be *listed* and labeled to indicate compliance with UL 793 or FM 4430.

910.3.2 (IBC [F] 910.3.2) Smoke and heat vent locations. Smoke and heat vents shall be located 20 feet (6096 mm) or more from adjacent *lot lines* and *fire walls* and 10 feet (3048 mm) or more from *fire barriers*. Vents shall be uniformly located within the roof in the areas of the building where the vents are required to be installed by Section 910.2, with consideration given to roof pitch, draft curtain location, sprinkler location and structural members.

910.3.3 Smoke and heat vents area. The required aggregate area of smoke and heat vents shall be calculated as follows:

For buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1:

$$A_{VR} = V/9000 \text{ (Equation 9-4)}$$

Where:

A_{VR} = the required aggregate vent area (ft²)

V = volume (ft³) of the area that requires smoke removal

For unsprinklered buildings:

$$A_{VR} = A_{FA} / 50 \text{ (Equation 9-5)}$$

Where:

A_{VR} = the required aggregate vent area (ft²)

A_{FA} = the area of the floor of the area that requires smoke removal.

910.4 (IBC [F] 910.4) Mechanical smoke removal systems exhaust. Mechanical smoke removal systems exhaust shall be designed and installed in accordance with Sections 910.4.1 through 910.4.7.

910.4.1 Automatic sprinklers required. The building shall be equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

910.4.2 (IBC [F] 910.4.2) Exhaust fan construction. Exhaust fans that are part of a mechanical smoke removal system shall be rated for operation at 10

910.4.3 (IBC [F] 910.4.3) System design criteria. The mechanical smoke removal system shall be sized to exhaust the building at a minimum rate of two air changes per hour based upon the volume of the building or portion thereof without contents. The capacity of each exhaust fan shall not exceed 30,000 cubic feet per minute.

910.4.3.1 Make-up air. Make-up air openings shall be provided within six feet (add metric) of the floor level. Operation of make-up air openings shall be manual or automatic. The minimum gross area of make-up air inlets shall be 8 ft² per 1000 cfm of smoke exhaust.

910.4.4 (IBC [F] 910.4.4) Activation. The mechanical smoke removal system shall be activated by manual controls only.

910.4.5 (IBC [F] 910.4.5) Manual control location. Manual controls shall be located so as to be accessible to the fire service from an exterior door of the building and be protected against interior fire exposure by not less than 1-hour fire barriers constructed in accordance with Section 707 of the *International Building Code* or horizontal assemblies constructed in accordance with Section 712 of the *International Building Code*, or both.

910.4.6 (IBC [F] 910.4.6) Control wiring. Wiring for operation and control of mechanical smoke removal systems shall be connected ahead of the main disconnect in accordance with Section 701.12E of NFPA 70 and be protected against interior fire exposure to temperatures in excess of 1,000°F (538°C) for a period of not less than 15 minutes.

910.4.7 (IBC [F] 910.4.7) Controls. Where building air handling and mechanical smoke removal systems are combined or where independent building air-handling systems are provided, fans shall automatically shut down in accordance with the *International Mechanical Code*. The manual controls provided for the smoke removal system shall have the capability to override the automatic shutdown of fans that are part of the smoke removal system.

910.5 Maintenance. Smoke and heat vents and mechanical smoke removal exhaust systems shall be maintained in an operative condition in accordance with Section 910.5.1 or 910.5.2, respectively.

910.5.1 Smoke and heat vents. Smoke and heat vents shall be maintained in accordance with NFPA 204 and Section 910.5.1.1

910.5.1.1 Fusible links. Fusible links for smoke and heat vents shall be promptly replaced whenever fused, damaged or painted.

910.5.2 Mechanical smoke removal systems. Mechanical smoke removal systems shall be maintained in accordance with the equipment manufacturer's maintenance instructions and Sections 910.5.2.1 through 910.5.2.4.

910.5.2.1 Frequency. Systems shall be operationally tested not less than once per year. Testing shall include the operation of all system components including control elements.

910.5.2.2 Testing. Operational testing of the mechanical smoke removal system shall include all equipment such as fans, controls and make-up air openings.

910.5.2.3 Schedule. A routine maintenance and operational testing program shall be initiated and a written schedule for routine maintenance and operational testing shall be established.

910.5.2.4 Written record. A written record of mechanical smoke exhaust system testing and maintenance shall be maintained on the premises. The written record shall include the date of the maintenance, identification of the servicing personnel and notification of any unsatisfactory condition and the corrective action taken, including parts replaced.

**TABLE 901.6.1
FIRE PROTECTION SYSTEM MAINTENANCE STANDARDS**

SYSTEM	STANDARD
Portable fire extinguishers	NFPA 10
Carbon dioxide fire-extinguishing system	NFPA 12
Halon 1301 fire-extinguishing systems	NFPA 12A
Dry-chemical extinguishing systems	NFPA 17
Wet-chemical extinguishing systems	NFPA 17A
Water-based fire protection systems	NFPA 25
Fire alarm systems	NFPA 72
Smoke and heat vents	NFPA 204
Water-mist systems	NFPA 750
Clean-agent extinguishing systems	NFPA 2001

**TABLE 3206.2
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS**

COMMODITY CLASS	SIZE OF HIGH-PILED STORAGE AREA ^a (square feet) (see Sections 3206.2 and 3206.4)	ALL STORAGE AREAS (See Sections 3206, 3207 and 3208) ^b				SOLID-PILED STORAGE, SHELF STORAGE AND PALLETIZED STORAGE (see Section 3207.3)		
		Automatic fire-extinguishing system (see Section 3206.4)	Fire detection system (see Section 3206.5)	Building access (see Section 3206.6)	Smoke and heat removal (see Section 3206.7)	Maximum pile dimension (feet)	Maximum permissible storage height ^d (feet)	Maximum pile volume (cubic feet)

(Portions of table not shown remain unchanged)

3206.7 Smoke and heat removal. Where smoke and heat removal is required by Table 3206.2, it shall be provided in accordance with Section 910.

Add new standard to Chapter 80 (IBC Chapter 35) as follows:

FM

4430-12 Approval Standard for Heat and Smoke Vents 910.3.1

Committee Reason: This proposal was felt to be a good compromise. This proposal still allows the use of smoke and heat vents and brings mechanical smoke removal to the same level as smoke and heat vents. Also it was felt that this proposal correlates with the change in the IBC that no longer allows increased travel distance for smoke and heat vents. Since the need for smoke removal in Section 910 is not related to occupant lifesafety but instead is focused upon fire fighting and property protection a compromise on a reliable source of power for mechanical systems was made. This proposal also clears up many conflicts and issues of concern related to smoke and heat vents. Allowances are provided for sprinklered buildings with regard to the area requiring venting. The modification relocates mechanical smoke removal for multi-story sprinklered buildings from the general 'where required' section to the two specific 'where required' sections to avoid the situation where those two 'where required' sections, if unchanged, could be interpreted to require gravity vents even though the general 'where required' section stated otherwise.

Assembly Action:

None

Final Hearing Results

F195-13

AM

Code Change No: F196-13

Original Proposal

Section(s): 910.1 (IBC [F] 910.1), 910.3.5 (IBC [F] 910.3.5), 202, 3202, Table 3206.2

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration
(jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

910.1 General. Where required by this code or otherwise installed, smoke and heat vents, or mechanical smoke exhaust systems, and draft curtains shall conform to the requirements of this section.

Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an *approved automatic sprinkler system*.
2. Where areas of buildings are equipped with early suppression fast-response (ESFR) or quick-response storage (QRS) sprinklers, automatic smoke and heat vents shall not be required within these areas.

910.3.5 (IBC [F] 910.3.5) Draft curtains. Where required by Table 910.3, draft curtains shall be installed on the underside of the roof in accordance with this section.

Exception: Where areas of buildings are equipped with ESFR or QRS sprinklers, draft curtains shall not be provided within these areas. Draft curtains shall only be provided at the separation between the ESFR sprinklers and the non-ESFR sprinklers, and between QRS and the non-QRS sprinklers.

Add new definition as follows:

SECTION 202 GENERAL DEFINITIONS

QUICK RESPONSE STORAGE (QRS) SPRINKLER. A sprinkler with a response time index of 50 or less that is listed to control a specified fire in stored commodities with 12 or fewer sprinklers.

Revise as follows:

SECTION 3202 DEFINITIONS

QUICK RESPONSE STORAGE (QRS) SPRINKLER.

**TABLE 3206.2
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS**

COMMODITY CLASS	SIZE OF HIGH-PILED STORAGE AREA ^a (square feet) (see Sections 3206.2 and 3206.4)	ALL STORAGE AREAS (See Sections 3206, 3207 and 3208) ^b					SOLID-PILED STORAGE, SHELF STORAGE AND PALLETIZED STORAGE (see Section 3207.3)		
		Automatic fire-extinguishing system (see Section 3206.4)	Fire detection system (see Section 3206.5)	Building access (see Section 3206.6)	Smoke and heat removal (see Section 3206.7)	Draft curtains (see Section 3206.7)	Maximum pile dimension ^c (feet)	Maximum permissible storage height ^d (feet)	Maximum pile volume (cubic feet)

(Portions of table not shown remain unchanged)

a through i (No change to current text)

j. Not required when storage areas are protected by early suppression fast response (ESFR) or quick-response storage (QRS) sprinkler systems installed in accordance with NFPA 13.

Reason: Factory Mutual data sheets no longer reference special sprinkler classifications, such as ESFR. Instead, FM now classifies sprinklers as “storage” and “non-storage” and provides appropriate installation parameters. Storage sprinklers now encompass a new category of quick-response sprinklers that share the key characteristics of ESFR sprinklers, i.e. fast response thermal elements and design areas that involve 12 or fewer sprinklers, but are not designated as ESFR. These quick-response storage sprinklers require similar precautions to ESFR sprinklers with respect to not introducing unknowns that were not represented in full-scale fire tests conducted to determine listing parameters. Thereby, it is important to extend the current provisions in Chapters 9 and 32 that are applicable to ESFR sprinklers to include quick-response storage sprinklers.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: There was concern that the technology was too new to be properly addressed within the code. In addition concerns and questions with regard to smoke and heat vent and the operation of the sprinklers were raised. There was particular concern with the terminology used and related testing. There was some concern for the need to provide specific data and reports for every installation.

Assembly Action:

None

Public Comments

Public Comment:

Jeffrey M. Shapiro, P.E., International Code Consultants, representing Tyco; Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Replace the proposal as follows:

910.1 General. Where required by this code or otherwise installed, smoke and heat vents, or mechanical smoke exhaust systems, and draft curtains shall conform to the requirements of this section.

Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an *approved automatic sprinkler system*.
2. Where areas of buildings are equipped with early suppression fast-response (ESFR) sprinklers, automatic smoke and heat vents shall not be required within these areas.
3. Where areas of buildings are equipped with control mode special application sprinklers with a response time index of 50 or less, which are listed to control a fire in the stored commodities with 12 or fewer sprinklers, automatic smoke and heat vents shall not be required within these areas.

910.3.5 (IBC [F] 910.3.5) Draft curtains. Where required by Table 910.3, draft curtains shall be installed on the underside of the roof in accordance with this section.

Exceptions:

1. Where areas of buildings are equipped with ESFR sprinklers, draft curtains shall not be provided within these areas. Draft curtains shall only be provided at the separation between the ESFR sprinklers and the non-ESFR sprinklers.
2. Where areas of buildings are equipped with control mode special application sprinklers with a response time index of 50 or less, which are listed to control a fire in the stored commodities with 12 or fewer sprinklers, draft curtains shall not be provided within these areas. Draft curtains shall only be provided at the separation between these areas and areas protected by other types of sprinklers.

**TABLE 3206.2
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS**

- j. Not required when storage areas are protected by either early suppression fast response (ESFR) sprinkler systems or control mode special application sprinklers with a response time index of 50 or less, which are listed to control a fire in the stored commodities with 12 or fewer sprinklers, installed in accordance with NFPA 13.

Commenter's Reason:

Shapiro: The text proposed in this public comment addresses the concerns that were raised at the committee hearing. In particular, it resolves questions that were raised about introducing the new term "quick response storage sprinkler" by no longer using that term, and it clarifies that both the RTI and number of sprinklers operating limits (not just one or the other) must be satisfied to for the referenced sprinklers to be treated equivalently to ESFR.

After the hearing, I spoke with a number of attendees and committee members to better understand their concerns and see if there were other questions about this proposal. I learned that some people were confused as to why the sprinklers included in this proposal are not simply considered ESFR. In response, I explained that the type of sprinklers covered by this proposal is very versatile. They can qualify and be used as either control mode density area (CMDA) or CMSA sprinklers under their UL listing and NFPA 13. When these sprinklers are used as CMDA, they are essentially "regular" sprinklers that can be used with smoke and heat vents because the installation will involve large design areas. When they are used as CMSA with limitations that parallel those that are applicable to ESFR (as described in this proposal), the same concerns about compatibility with smoke and heat vents apply. Once these points were clear, individuals who I spoke with, including some committee members who had opposed the change, agreed with the proposal.

It is also important to note that the proposal was cleared with FM, UL the National Fire Sprinkler Association and the American Fire Sprinkler Association.

Zubia: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

There is a new category of fire sprinklers that shares the key characteristics of ESFR sprinklers, i.e. thermal elements that have a response time index (RTI) of 50 or less and that are listed to protect a design area that involves 12 or fewer sprinklers. These sprinklers are not called ESFR, but they still require similar precautions to ESFR sprinklers with respect to not introducing unknowns, such as smoke and heat vents, that were not present in the full-scale fire tests that determined the listing parameters. Such unknowns can lead to sprinkler "skipping" and exceeding the 12 sprinkler design area, which was the exact concern that led to the ESFR-related provisions that are currently in Chapters 9 and 32. This comment will extend application of the special ESFR provisions to include quick-response storage sprinklers that share ESFR characteristics.

The public comment also resolves the concerns expressed by some at the committee hearing that the introduction of new terminology suggested in the original proposal might have confused some code users. The previously proposed terminology is not included in this public comment. Instead, the technical provisions are provided directly in the sections of the code where they will apply. The text has also been revised to clarify that sprinklers must have BOTH an RTI of 50 or less and be listed to control/suppress a fire with 12 or fewer sprinklers to qualify for an exception to smoke and heat venting requirements. Any sprinkler listed as "quick response" will satisfy the "50 RTI or less" criteria, based on the definition of "quick response" in NFPA 13 Section 3.6.4.7. The number of operating sprinklers will be indicated in the listing criteria for each sprinkler.

In summary, there is no technical basis for not accepting this proposal. The proposed exceptions parallel those that the code already provides for ESFR sprinklers, and the sprinklers that will qualify for the proposed new exceptions must meet the ESFR RTI and suppression area criteria.

Final Hearing Results

F196-13

AMPC

Code Change No: F199-13

Original Proposal

Section(s): IFC Table 911.1; IBC Table [F] 414.5.1

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

**TABLE 911.1
EXPLOSION CONTROL REQUIREMENTS^f**

MATERIAL	CLASS	EXPLOSION CONTROL METHODS	
		Barricade construction	Explosion (deflagration) venting or explosion (deflagration) prevention systems
HAZARD CATEGORY			
Combustible dusts ^a	—	Not Required	Required
Cryogenic fluids	Flammable	Not Required	Required
Explosives	Division 1.1	Required	Not Required
	Division 1.2	Required	Not Required
	Division 1.3	Not Required	Required
	Division 1.4	Not Required	Required
	Division 1.5	Required	Not Required
	Division 1.6	Required	Not Required
Flammable gas	Gaseous	Not Required	Required
	Liquefied	Not Required	Required
Flammable liquids	IA ^b	Not Required	Required
	IB ^c	Not Required	Required
Organic peroxides	Unclassified detonable	Required	Not Permitted
	I	Required	Not Permitted
Oxidizer liquids and solids	4	Required	Not Permitted
Pyrophoric	Gases	Not Required	Required
Unstable (reactive)	4	Required	Not Permitted
	3 Detonable	Required	Not Permitted
	3 Nondetonable	Not Required	Required
Water-reactive liquids and solids	3	Not Required	Required
	2 ^e	Not Required	Required
SPECIAL USES			
Acetylene generator rooms	—	Not Required	Required
Grain processing	—	Not Required	Required
Liquefied petroleum gas distribution facilities	—	Not Required	Required
Where explosion hazards exist ^d	Detonation	Required	Not Permitted
	Deflagration	Not Required	Required

a. Combustible dusts that are generated during manufacturing or processing. See definition of Combustible Dust in Chapter 22.

b. Storage or use.

c. In open use or dispensing.

d. Rooms containing dispensing and use of hazardous materials when an explosive environment can occur because of the characteristics or nature of the hazardous materials or as a result of the dispensing or use process.

- e. A method of explosion control shall be provided when Class 2 water-reactive materials can form potentially explosive mixtures.
 f. Explosion venting is not required for Group H-5 Fabrication Areas complying with Chapter 27 and the International Building Code.

Revise as follows:

[F] TABLE 414.5.1
 EXPLOSION CONTROL REQUIREMENTS^{a,h}

MATERIAL	CLASS	EXPLOSION CONTROL METHODS	
		Barricade construction	Explosion (deflagration) venting or explosion (deflagration) prevention systems ^b
HAZARD CATEGORY			
Combustible dusts ^c	—	Not Required	Required
Cryogenic flammables	—	Not Required	Required
Explosives	Division 1.1	Required	Not Required
	Division 1.2	Required	Not Required
	Division 1.3	Not Required	Required
	Division 1.4	Not Required	Required
	Division 1.5	Required	Not Required
	Division 1.6	Required	Not Required
Flammable gas	Gaseous	Not Required	Required
	Liquefied	Not Required	Required
Flammable liquid	IA ^d	Not Required	Required
	IB ^e	Not Required	Required
Organic peroxides	U	Required	Not Permitted
	I	Required	Not Permitted
Oxidizer liquids and solids	4	Required	Not Permitted
Pyrophoric gas	—	Not Required	Required
Unstable (reactive)	4	Required	Not Permitted
	3 Detonable	Required	Not Permitted
	3 Nondetonable	Not Required	Required
Water-reactive liquids and solids	3	Not Required	Required
	2 ^g	Not Required	Required
SPECIAL USES			
Acetylene generator room	—	Not Required	Required
Grain processing	—	Not Required	Required
Liquefied petroleum gas-distribution facilities	—	Not Required	Required
Where explosion hazards exist ^f	Detonation	Required	Not Permitted
	Deflagration	Not Required	Required

- a. See Section 414.1.3.
 b. See the International Fire Code.
 c. As generated during manufacturing or processing.
 d. Storage or use.
 e. In open use or dispensing.
 f. Rooms containing dispensing and use of hazardous materials when an explosive environment can occur because of the characteristics or nature of the hazardous materials or as a result of the dispensing or use process.
 g. A method of explosion control shall be provided when Class 2 water-reactive materials can form potentially explosive mixtures.
 h. Explosion venting is not required for Group H-5 Fabrication Areas complying with Section 415.10.1 and the International Fire Code.

Reason: This proposal is intended to reduce confusion in the application of explosion venting requirements for Group H-5 Occupancies. Currently, IBC and IFC require explosion venting where the MAQs are exceeded per IFC Table 5003.1.1 and IBC Table 307.1. However, fabrication areas of H-5 Occupancies are specifically allowed to exceed these quantities in accordance with IBC 415.10.1.1.1 and IFC 2704.2.2.1 due to the strict controls prescribed for those fabrication areas.

This proposal would clarify that explosion venting is not required in the fabrication areas of H-5 Occupancies. HPM storage rooms and gas rooms are also allowed to exceed the limits of Tables 2704.2.2.1 and IBC 415.10.1.1.1. Explosion venting would still potentially be required in the HPM storage rooms and gas rooms. This is consistent with the current text in IBC 415.10.5.5.

This proposal is consistent with current construction, industry practice and application of explosion venting requirements, as Group H-5 fabrication areas are generally constructed without explosion venting. This proposal simply provides clarification on how the Group H5 requirements correlate with MAQs and explosion venting requirements found elsewhere in code.

Cost Impact: The code change will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The revisions to IFC Table 911.1 and IBC Table 414.5.1 clarify that Group H-5 fabrication areas are not applicable to the explosion venting requirements. This proposal was felt to be consistent industry practice and current construction.

Assembly Action:

None

Final Hearing Results

F199-12

AS

Code Change No: **F204-13**

Original Proposal

Section(s): 913.2.2 (IBC [F] 913.2.2 (New)), Chapter 80 (IBC Chapter 35)

Proponent: Bob Eugene, representing Underwriters Laboratories (Robert.Eugene@ul.com)

Add new text as follows:

913.2.2 (IBC [F] 913.2.2) Circuits supplying fire pumps. Cables used for survivability of circuits supplying fire pumps shall be listed in accordance with UL 2196. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

Add new standard to Chapter 80 (IBC Chapter 35) as follows:

UL

2196-2001 Tests for Fire Resistive Cables, with revisions through December 7, 2003.....913.2.2

Reason: UL 2196 is the ANSI approved standard for tests of fire resistive cables. NFPA 20 (fire pumps) includes selective survivability requirements to assure integrity of certain critical circuits. NFPA 70 does not specify the applicable standard within the mandatory provisions of the code, but recognizes electrical circuit protective systems as an alternate to listed cables. An electrical circuit protective system is a field assembly of components that must be installed according to the listing requirements and manufacturer's instructions in order to maintain the listing for the system. There are more than two dozen electrical circuit protective systems listed in the UL Fire Resistance Directory.

Cost Impact: None.

Analysis: A review of the standard proposed for inclusion in the code, UL 2196-2001, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of UL2196-2001 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: This provides a direct reference to the standard that addresses cables used to provide survivability of circuits. This reference was felt necessary to avoid confusion as to what was required in accordance with NFPA 20 and NFPA 70.

Assembly Action:

None

Public Comments

Public Comment:

Bob Eugene, representing UL LLC, requests Approval as Modified by Public Comment.

Modify the proposal as follows:

UL	Standard Reference Number	Underwriters Laboratories Title	Referenced in Code Section Number
2196-2001		Tests for Fire Resistive Cables, with revisions through December 7, 2003 <u>March 2012</u>	913.2.2 <u>(913.2.2)</u>

(Portions of proposal not shown remain unchanged)

Commenter's Reason: This proposal was originally submitted with the Group A proposals, but held over for the Group B proposals. The revisions to the standard, including ANSI approval, occurred after the original submittal and should be included in the 2015 edition of the codes.

Analysis: The edition of UL2196 that was submitted for review by the IFC Committee included the revisions through March, 2012. For the analysis of the content of this standard, please visit: <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Final Hearing Results

F204-13

AMPC

Code Change No: F206-13

Original Proposal

Section(s): 914.8.2 (New)

Proponent: Eric R. Rosenbaum, Hughes Associates, Inc. representing the Air Traffic Control Tower Fire Life Safety Task Group (erosenbaum@haifire.com+)

Revise as follows:

914.8.2 Fire suppression for new airport traffic control towers. Where an occupied floor is located more than 35 feet (10668 mm) above the lowest level of fire department vehicle access, new airport traffic control towers shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.

914.8.2 914.8.3 Fire suppression for aircraft hangars Aircraft hangars shall be provided with a fire suppression system designed in accordance with NFPA 409, based upon the classification for the hangar given in Table 914.8.2.

Exception: When a fixed base operator has separate repair facilities on site, Group II hangars operated by a fixed base operator used for storage of transient aircraft only shall have a fire suppression system, but the system shall be exempt from foam requirements.

Reason: The proposed change reflects changes accepted in Section 412.3 of the IBC regarding new airport traffic control towers. The accepted change in the IBC requires an automatic sprinkler system in all new air traffic control towers with an occupiable floor 35 ft or more above the lowest level of fire department vehicle access. This change clarifies the application of the criteria in Section 914.8 Aircraft-related occupancies. A copy of the accepted change in the IBC is as follows:

412.3 Airport traffic control towers. The provisions of Sections 412.3.1 through 412.3.11 shall apply to airport traffic control towers occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

412.3.1 Type of construction. Airport traffic control towers shall be constructed to comply with the height limitations of Table 412.3.2.

TABLE 412.3.2
HEIGHT LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS

TYPE OF CONSTRUCTION	HEIGHT ^a (feet)
IA	Unlimited
IB	240
IIA	100
IIB	85
IIIA	65

a. Height to be measured from grade plane to cab floor

412.3.2 Stairway Stairways in Airport traffic control towers shall conform to the requirements of Section 1009. Such *stairways* shall be a smokeproof enclosure in accordance with Section 909.20. The stair pressurization alternative in accordance with Section 909.20.5 shall be permitted to be used. *Stairways* shall not be required to extend to the roof as specified in Section 1009.11.

412.3.3 Exit access. From observation levels, airport traffic control towers shall be permitted to have a single means of exit access for a distance of travel not exceeding 100 ft (30 m). This means of egress shall be permitted to include exit access utilizing an unenclosed stair at the observation level.

412.3.4 Single means of egress. Not less than one *exit stairway* shall be permitted for airport traffic control towers of any height provided that the *occupant load* per floor is not greater than 15 and the area per floor does not exceed 1,500 square feet (140 m²).

412.3.4.1 Arrangement of single means of egress. Airport traffic control towers permitted a single exit and located above another building shall be provided with one of the following:

1. Exit enclosure separated from the other building with no door openings to or from the other building
2. Exit enclosure leading directly to an exit enclosure serving the other building, with walls and door separating the exit enclosures from each other, and another door allowing access to the top floor of the building that provides access to a second exit serving that floor.

412.3.4.2 Interior Finish. Airport traffic control towers permitted a single exit in accordance with Section 412.3.4 shall be restricted to interior wall and ceiling finishes of Class A or Class B.

412.3.5 Automatic fire detection systems. Airport traffic control towers shall be provided with an automatic fire detection system installed in accordance with Section 907.2.

412.3.6 Automatic sprinkler system. Airport traffic control towers shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

412.3.7 Standby power. A standby power system that conforms to Chapter 27 shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:

1. Pressurization equipment, mechanical equipment and lighting.
2. Elevator operating equipment.
3. Fire alarm and smoke detection systems.

412.3.8 Elevator Protection. Wires or cables that provide normal and standby power, control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire-detecting systems to elevators shall be protected by construction having a minimum 1-hour *fire resistance rating* or shall be circuit integrity cable having a minimum 1-hour *fire-resistance rating*.

412.3.9 Accessibility. Airport traffic control towers need not be *accessible* as specified in the provisions of Chapter 11.

Cost Impact: This code change will increase the cost of construction from the current code requirements in some instances; however, reflects current building practices of the FAA.

Analysis: The accepted code change mentioned in the proposal is G86-12 (AMPC).

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

914.8.2 Fire suppression for new airport traffic control towers. Where an occupied floor is located more than 35 feet (10668 mm) above the lowest level of fire department vehicle access, new airport traffic control towers shall be equipped with an *automatic sprinkler system* in accordance with Section ~~903.3.1.1~~903.3.4.

914.8.3 Fire suppression for aircraft hangars Aircraft hangars shall be provided with a fire suppression system designed in accordance with NFPA 409, based upon the classification for the hangar given in Table 914.8.2.

Exception: When a fixed base operator has separate repair facilities on site, Group II hangars operated by a fixed base operator used for storage of transient aircraft only shall have a fire suppression system, but the system shall be exempt from foam requirements.

Committee Reason: This proposal simply correlates with the changes made to Chapter 4 of the IBC during Group A that now require sprinklers. The modification simply clarifies that the type of sprinkler system referenced is an NFPA 13 system.

Assembly Action:

None

Final Hearing Results

F206-13

AM

Code Change No: F208-13

Original Proposal

Section(s): 1030.2.1

Proponents: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com); John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

Revise as follows:

1030.2.1 Security devices and egress locks. Security devices affecting *means of egress* shall be subject to approval of the *fire code official*. ~~Special Security devices and locking arrangements in the means of egress including, but not limited to access-controlled egress doors, security grills, locks and latches, and delayed egress locks that restrict, control, or delay egress~~ shall be installed and maintained as required by this chapter.

Reason:

Williams/Baldassarra: Revisions approved in the 2012 ICC code development cycle for Chapter 10 of the 2015 IBC, and corresponding sections of Chapter 10 of the 2015 IFC, regarding “shall be permitted” locking systems should be coordinated in this section of the IFC.

The proposed modification deletes the “including, but not limited to” clause and clarifies that any security device or locking arrangement that restricts, controls, or delays egress is to be maintained as required by this chapter of the IFC. The table below lists the expected titles of these extensively revised sections, and the code change proposals affecting these sections.

2012 IBC and 2012 IFC	2015 IBC and 2015 IFC	Code Change Proposals
1008.1.9.6 Special locking arrangements in Group I-2.	1008.1.9.6 Controlled egress doors in Group I-1 and I-2.	E66-12 AMPC E67-12 AM E69-12 AMPC
1008.1.9.7 Delayed egress locks.	1008.1.9.7 Delayed egress.	E70-12 AM E72-12 AM E74-12 AMPC
1008.1.9.8 Access-controlled egress doors.	1008.1.9.8 Sensor release of electrically locked egress doors.	E77-12 AS E78-12 AM E80-12 AS
1008.1.9.9 Electromagnetically locked egress doors.	1008.1.9.9 Electromagnetically locked egress doors.	E77-12 AS E81-12 AS E82-12 AM

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Woestman: Revisions approved in the 2012 ICC code development cycle for Chapter 10 of the 2015 IBC, and corresponding sections of Chapter 10 of the 2015 IFC, regarding “shall be permitted” locking systems should be coordinated in this section of the IFC.

The proposed modification deletes the “including, but not limited to” clause and clarifies that any security device or locking arrangement that restricts, controls, or delays egress is to be maintained as required by this chapter of the IFC. The table below lists the expected titles of these extensively revised sections, and the code change proposals affecting these sections.

2012 IBC and 2012 IFC	2015 IBC and 2015 IFC	Code Change Proposals
1008.1.9.6 Special locking arrangements in Group I-2.	1008.1.9.6 Controlled egress doors in Group I-1 and I-2.	E66-12 AMPC E67-12 AM E69-12 AMPC
1008.1.9.7 Delayed egress locks.	1008.1.9.7 Delayed egress.	E70-12 AM E72-12 AM E74-12 AMPC
1008.1.9.8 Access-controlled egress doors.	1008.1.9.8 Sensor release of electrically locked egress doors.	E77-12 AS E78-12 AM E80-12 AS
1008.1.9.9 Electromagnetically locked egress doors.	1008.1.9.9 Electromagnetically locked egress doors.	E77-12 AS E81-12 AS E82-12 AM

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent’s reason statement that the code change provides a needed clarification of the text.

Assembly Action:

None

Final Hearing Results

F208-12

AS

Code Change No: F209-13

Original Proposal

Section(s): 1030.3.1 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Add new text as follows:

1030.3.1 Group I-2. In Group I-2, the required clear width for aisles, corridors and ramps that are part of the required means of egress shall comply with Section 1018.2. The facility shall have a plan to maintain the required clear width during emergency situations.

Exception: In areas required for bed movement, equipment shall be permitted in the required width where all the following provisions are met:

1. The equipment is low hazard and wheeled.
2. The equipment does not reduce the effective clear width for the means of egress to less than 5 feet (1525 mm).
3. The equipment is limited to:
 - 3.1 Equipment and carts in use;
 - 3.2 Medical emergency equipment;
 - 3.3 Infection control carts; and
 - 3.4 Patient lift and transportation equipment.
4. Medical emergency equipment and patient lift and transportation equipment, when not in use, is required to be located on one side of the corridor.
5. The equipment is limited in number to a maximum of one per patient sleeping room or patient care room within each smoke compartment.

Reason: The new language in Section 1030.3.1 is to be placed in the International Fire Code as a procedural requirement. It is recognized that the 8'-0" wide corridor in an Group I-2 occupancy where beds are moved is to remain at 8'-0" in width. The language recognizes and identifies the fact that certain movable pieces of equipment will be present in the corridor during normal operations of the patient care units and seeks to restrict the types and number of such pieces of equipment and the restrictions the equipment may impose on the means of egress.

The language also recognizes that during emergencies facilities must have an emergency management plan that address the steps that must be taken by the facility and responding staff to ensure that the required 8'-0" wide corridor is kept clear of movable obstructions.

The terminology is consistent with NFPA 101.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the

following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides hospitals with practical, needed flexibility in managing essential equipment in corridors that is currently being successfully applied in many jurisdictions.

Assembly Action:

None

Final Hearing Results

F209-12

AS

Code Change No: F212-13 Part I

Original Proposal

Section(s): 913.2.2 (IBC [F] 913.2.2 (New)), Chapter 80 (IBC Chapter 35)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IFC CODE DEVELOPMENT COMMITTEE AND PART II WILL BE HEARD BY THE IEBC CODE DEVELOPMENT COMMITTEE AS SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

PART I – INTERNATIONAL FIRE CODE

Revise as follows:

SECTION 1103 FIRE SAFETY REQUIREMENTS FOR EXISTING BUILDING

1103.1 Required construction. Existing buildings shall comply with not less than the minimum provisions specified in Table 1103.1 and as further enumerated in Sections 1103.2 through 1103.9.

The provisions of this chapter shall not be construed to allow the elimination of fire protection systems or a reduction in the level of fire safety provided in buildings constructed in accordance with previously adopted codes.

Exceptions:

1. Where approved in accordance with Section 102.4, in Group I-2 Condition 2 buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 has been added and the building is now sprinklered throughout, the existing fire resistance ratings, opening protectives, penetrations and joints in assemblies are not required to be maintained where such fire resistance ratings, opening protectives, penetrations and joints are not required in new construction for sprinklered buildings.
2. Group U occupancies.

SECTION 1104 MEANS OF EGRESS FOR EXISTING BUILDINGS

1104.1 General. *Means of egress* in existing buildings shall comply with the minimum egress requirements when specified in Table 1103.1 as further enumerated in Sections 1104.2 through 1104.23, and the building code that applied at the time of construction. Where the provisions of this chapter conflict with the building code that applied at the time of construction, the most restrictive provision shall apply. Existing buildings that were not required to comply with a building code at the time of construction shall comply with the minimum egress requirements when specified in Table 1103.1 as further enumerated in Sections 1104.2 through 1104.24.

Exception: Where approved in accordance with Section 102.4, in Group I-2 Condition 2 buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 has been added and the building is now sprinklered throughout, the existing fire resistance ratings, opening protectives, penetrations and joints in assemblies are not required to be maintained where such fire

resistance ratings, opening protectives, penetrations and joints are not required in new construction for sprinklered buildings.

Reason: The changes provide tradeoffs for installation of automatic sprinkler systems consistent with those allowed for new construction and also with those allowed by CMS. In many editions of the legacy codes and the ICC Codes dating from the 1980s and even before, the same or similar tradeoffs were allowed when a facility elected to provide sprinkler protection. The AD Hoc Committee on Health Care is proposing requiring retrofit of sprinklers in Hospitals that we feel provide the best protection available and feel because of this the tradeoffs are justified in existing facilities as has been vetted and justified in new construction for many years. These requirements are part of a package of retrofit requirements that provide a minimum level of safety considered necessary for patients, staff and first responders in an environment in which patients are in many instances not capable of self preservation and must be protected in place. Automatic sprinkler protection is key to any plan for protecting residents in place and for the safety of those responding to emergencies by providing the extra time needed to respond. The requirements are also consistent with current CMS standards that apply to all hospitals nationwide receiving Medicare/Medicaid funding and would not add additional requirements to those facilities beyond current nationwide Federal requirements but would allow the facilities to better meet those requirements without possible costly conflicts in other codes.

If this proposal is successful and the proposal for a new Section 1105 is also approved, the Adhoc Health Care committee will bring forward a corresponding exception to be applicable for the new Section 1105.1 as follows:

**SECTION 1105
CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2**

1105.1 General. Existing Group I-2 shall meet the following requirements:

1. The minimum fire safety requirements in Section 1103, and
2. The minimum egress requirements in Section 1104, and
3. The additional egress and construction requirements in Sections 1105.2 through 1105.7.5.2.

Where the provisions of this chapter conflict with the construction requirements that applied at the time of construction, the most restrictive provision shall apply.

Exception: Where approved in accordance with Section 102.4, in Group I-2 Condition 2 buildings where a sprinkler system installed in accordance with Section 903.3.1.1 has been added and the building is now sprinklered throughout, the existing fire resistance ratings, opening protectives, penetrations and joints in assemblies are not required to be maintained where such fire resistance ratings, opening protective, penetrations and joints are not required in new construction for sprinklered buildings.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

Public Hearing Results

PART I – IFC

Committee Action:

Disapproved

Committee Reason: The disapproval was based on the committee's concerns that the proposal needs to be well-correlated with code change EB26-13 which is related. It was also unclear as to why the exception should be limited to Group I-2 Condition 2 only when other occupancies would likely want to take advantage of it. The proposal also does not take into account alternative methods that may have been previously granted. Record keeping and documentation of reduced fire resistance ratings would be a major challenge as would trying to determine rating reductions by visual inspection.

Assembly Action:

None

Public Comments

Public Comment 3:

Robert J Davidson, Davidson Code Concepts, LLC, representing self, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

SECTION 1103 FIRE SAFETY REQUIREMENTS FOR EXISTING BUILDING

1103.1 Required construction. Existing buildings shall comply with not less than the minimum provisions specified in Table 1103.1 and as further enumerated in Sections 1103.2 through 1103.9.

The provisions of this chapter shall not be construed to allow the elimination of fire protection systems or a reduction in the level of fire safety provided in buildings constructed in accordance with previously adopted codes.

Exceptions:

1. ~~Where a change in fire resistance rating has been approved in accordance with Section 803.6 of the International Existing Building Code. Where approved in accordance with Section 102.4, in Group I-2 Condition 2 buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 has been added and the building is now sprinklered throughout, the existing fire resistance ratings, opening protectives, penetrations and joints in assemblies are not required to be maintained where such fire resistance ratings, opening protectives, penetrations and joints are not required in new construction for sprinklered buildings.~~
2. Group U occupancies.

Commenter's Reason: In response to the committee reason statement this proposal coordinates the IFC with the new language added to the IEBC by EB26-13 with a direct reference to the new language.

This puts into place a process for what is currently happening. Jurisdictions are granting approvals for passive fire protection reduction without clear guidance from the family of I-Codes. In some cases the reductions can be haphazardly approved and when buildings are not provided with an automatic fire suppression system throughout. The requirement is for the entire building to be sprinklered before this evaluation is considered and the pointer to the new Section 803.6 affirms that requirement and provides for a thorough review of the passive protection the applicant is seeking to obtain approval for reduction. This will have the added benefit of stopping the reduction in passive protections for projects to individual work areas or smoke compartments. The building would have to be considered as a whole.

EB26 is included here for reference.

EB26-13 AM

803.6 Fire-resistance ratings. *Where approved by the code official, buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 and 903.3.1.2 of the International Building Code has been added, and the building is now sprinklered throughout, the required fire-resistance ratings of building elements and materials shall be permitted to meet the requirements of the current building code. The building is required to meet the other applicable fire protection requirements of Chapter 9 of the International Building Code.*

Plans, investigation and evaluation reports, and other data shall be submitted indicating which building elements and materials the applicant is requesting the code official to review and approve for determination of applying the current building code fire-resistance ratings. Any special construction features, conditions of occupancy, approved modifications or approved alternative materials, design and methods of construction, and equipment applying to the building that impact required fire-resistance ratings shall be identified in the evaluation reports submitted.

Final Hearing Results

F212-13 Part I

AMPC3

Code Change No: F213-13

Original Proposal

Section(s): 1103.1.1 (New), [A] 102.6, Chapter 80

Proponent: Adolf Zubia, Chairman, IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new next as follows:

1103.1.1 Historic Buildings. Facilities designated as *historic buildings* shall develop a fire protection plan in accordance with Chapter 10 and 11 of NFPA 914. The fire protection plans shall comply with the maintenance and availability provisions in Section 404.4 and 404.5.

Revise as follows:

[A] 102.6 Historic buildings. The provisions of this code relating to the construction, *alteration*, repair, enlargement, restoration, relocation or moving of buildings or structures shall not be mandatory for existing buildings or structures identified and classified by the state or local jurisdiction as historic buildings when such buildings or structures do not constitute a distinct hazard to life or property. Fire protection in designated historic buildings and structures shall be provided ~~in accordance with an approved fire protection plan~~ as required in Section 1103.1.1.

Add new standard Chapter 80 as follows:

NFPA

914—2010 Code for Fire Protection of Historic Structures.1103.1.1

Reason: The intent of this code change is to clarify the requirements in the IFC with respect to the fire protection plan for historic buildings. This proposal does not change the current requirements for fire protection system, but only provides clarity.

IFC Section 102.6 currently requires an “approved fire protection plan.” But then the code provides no guidance as to what the plan needs to address, or what needs to be in the “approved fire protection plan.” This proposal adds a reference to NFPA 914 in Chapter 11 (new section 1103.1.1) which now establishes specific criteria to evaluate the historic building in accordance with NFPA 914 and requires maintenance and availability of the plan in accordance with current requirements for Fire Safety Plans as per Section 404 . This change will provide more specific guidance to code officials, design professionals and building owners as to the provisions that are applicable to fire protection plans for historic buildings in order to provide a reasonable level of building and life safety provisions.

Cost Impact: The code change will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 914 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

1103.1.1 Historic Buildings. Facilities designated as *historic buildings* shall develop a fire protection plan in accordance with ~~Chapter 10 and 11 of NFPA 914.~~ The fire protection plans shall comply with the maintenance and availability provisions in Section 404.4 and 404.5.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee approved the code change based on the proponent's reason statement. The modification will allow the use of additional provisions of the standard to achieve compliance with Chapters 10 and 11 of the standard.

Assembly Action:

None

Final Hearing Results

F213-13

AM

Code Change No: F215-13

Original Proposal

Section(s): 1103.3

Proponent: Greg Johnson, Johnson Consulting Services, representing self (gjohnsonconsulting@gmail.com)

Revise as follows:

1103.3 Elevator operation. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3.

Exceptions:

1. Buildings without occupied floors located more than 55 feet above the lowest level of fire department vehicle access where protected at the elevator shaft openings with additional fire doors in accordance with Section 716.5 of the *International Building Code* and where all of the following conditions are met:
 - 1.1 The doors shall be provided with vision panels of approved fire-protection-rated glazing so located as to furnish clear vision of the approach to the elevator. Such glazing shall not exceed 100 square inches in area.
 - 1.2 The doors shall be held open but be automatic-closing by activation of a fire alarm initiating device installed in accordance with the requirements of NFPA 72 as for Phase I Emergency Recall Operation, and shall be located at each floor served by the elevator; in the associated elevator machine room, control space, or control room; and in the elevator hoistway, when sprinklers are located in those hoistways.
 - 1.3 The doors, when closed, shall have signs visible from the approach area stating: WHEN THESE DOORS ARE CLOSED OR IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS.
2. Buildings without occupied floors located more than 55 feet above the lowest level of fire department vehicle access when provided with automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Freight elevators in buildings provided with both automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2 and at least one ASME 17.3 compliant elevator serving the same floors.

The provisions of this section shall not be construed to allow the elimination of previously installed Phase I emergency recall or Phase II emergency in-car systems.

Reason: Rule 211.3 of ASME A17.3, Firefighters' Service — Automatic Elevators, requires that: "*All automatic (nondesignated attendant) operation elevators having a travel of 25 ft (7.62 m) or more above or below the designated level shall conform to the requirements of this Rule.*"

The purpose of this proposed change is to:

- Clearly identify the fire code as the scoping document for the requirement of retroactive fire safety building features;
- Clarify the intent of the code with respect to which elevators must be retrofitted with Phase I emergency recall operation and Phase II emergency in-car operation;
- Provide the opportunity in existing low-rise buildings to substitute additional opening protectives at elevator shaft openings for Phase I emergency recall operation and Phase II emergency in-car operation retrofits; and,

- Provide the opportunity to substitute fire sprinkler installation for Phase I emergency recall operation and Phase II emergency in-car operation retrofits in low-rise buildings.

These changes are needed because of the exceeding expense of compliance for many of these retrofits. It is not unknown for application of the mandatory Phase I and Phase II retrofits required by the A17.3 Safety Code for Existing Elevators and Escalators to trigger complete replacement of the elevator machinery at costs running into the hundreds of thousands of dollars. What is a relatively inexpensive fire safety feature in a new elevator installation is unreasonably onerous when applied to existing elevators. It's therefore reasonable to codify alternate methods for building owners to meet the intent of the codes.

It's important to note that the 25 foot travel thresh-hold for ASME A17.3 emergency operation retrofit is not mitigated by occupant load; number of stories; elevator use; building fire or smoke compartment conditions; the presence of sprinklers; or any building specific operational firefighting considerations. For elevators installed prior to the adoption of newer elevator emergency operations features, many existing 3 story buildings require retrofit; elevators in non-atmospherically segregated spaces like low-rise atriums require retrofits; vintage freight elevators, regardless of maintenance condition or the ability of building occupants to access them, require retrofits. The problem of inflexible compliance options is magnified by the usual division of professional jurisdictions because elevator authorities typically do not have the expertise to assess fire risk on a total building basis; hence the need for the fire code to scope retroactive fire safety provisions.

By allowing for more affordable or effective alternatives to the Phase I and Phase II retrofits, less opposition should exist to adoption of ASME A17.3 and its other retroactive safety requirements such as safety bulkheads for hydraulic elevators and door restrictors, thereby enhancing overall elevator safety.

Status of State Adoptions of ASME A17.3 Phase I and Phase II FF Service Retroactive Requirements	
22	States adopt ASME A17.3
1	State modifies ASME A17.3 to trigger FF service retrofit at 70 feet of travel.
1	State amends away FF service retrofit for existing elevators.
1	State only requires FF service retrofit where triggered by other alterations; no blanket retroactivity.
1	State adopts ASME A17.3 <i>"for regulatory guidance only for elevators classified as remodeled."</i>
1	State amends ASME A17.3 to change 25 foot travel trigger to 3 stories.
1	State adopts ASME A17.3 but has a 5 year (until mid-2015) moratorium on required PH II retrofits.
28	States Do Not Adopt ASME A17.3

Intents of the Code

The intents of Phase I emergency recall are to prevent elevator users from being discharged at a floor that is engaged in a fire; from occupants accessing an elevator during a fire; and, in a detected fire condition, to return the elevator car to a designated floor for firefighter access for operations and rescue.

The intent of Phase II emergency in-car operation is to provide firefighters the ability to operate the elevator for firefighting operations.

Proposed Exception 1 meets the intent of the code by:

- Providing an additional fire door, with a vision panel, between elevator occupants and a fire engaged floor. This protects occupants from car and hoistway doors automatically opening directly to a fire event. The vision panel lets occupants view fire risk and select another floor to travel to for egress. This door provides an additional barrier to smoke and water contamination of the hoistway and improves building compartmentation.
- Providing additional signs on the added door immediately at the elevator opening telling building occupants to not use the elevator when the door is closed. In other words, if you can read the sign you shouldn't use the elevator.
- Recognizing that common firefighting operations policy requires firefighters to use the stairs to address any fire on the 6th floor or lower in a building; meaning that in low rise buildings immediate firefighter access to the elevators is not as critical. The 6th floor of a building typically corresponds to the building and fire codes' definition of a high-rise building as one with *"an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access."* This is broadly recognized as the elevation at which a compromise is achieved between the inherent hazard of using an elevator in a structural fire response and the need to respond in a timely way to the fire.

Exception 1 also tacitly acknowledges that these are not elevators that were ever *"intended to serve the needs of emergency personnel for fire-fighting or rescue purposes"* as the charging section states.

Locations of fire alarm initiating devices used to initiate door closing are identical to those used to initiate Phase I operations via reference to NFPA 72 by ASME A17.3.

Proposed Exception 2 recognizes that there is no documentation of civilian or firefighter life loss while in an elevator during a structural fire in a building protected with automatic fire sprinklers. It is reasonable that if an owner has already provided superior fire safety features in an existing building that they not be required to retrofit expensive fire safety features of limited value.

For buildings within the scope of the exception, which are not already sprinklered, Exception 2 provides an incentive to provide fire sprinklers.

The references to Sections 903.3.1.1 and 903.3.1.2 mean that only a fire sprinkler system installed in accordance with the appropriate technical standard will permit relaxation of the Phase I and Phase II emergency operations requirements.

55 feet was selected as the upper limit for the floor height of buildings within the scope of the proposed change after soliciting the advice of the Fire Code Action Committee at its November 2012 meeting. Committee members suggested a height limit of around four stories would be preferable when considering response factors associated with ascertaining elevator occupant locations and conditions. Since 55 feet is the elevation at which automatic sprinkler protection is triggered, and since it roughly corresponds to 4 stories, it is offered as a suitable threshold.

Proposed Exception 3 recognizes that buildings which already have an elevator equipped with Phase I and Phase II emergency operations already meet the intent of Phase II firefighter operations provisions. The fire sprinkler requirement and the limited passenger use of freight elevators means that the likelihood of life loss in the freight elevator is virtually nil. For buildings without fire sprinklers this provision provides an incentive to install fire sprinkler systems.

The codification of these substitutions is consistent with Section 1.3, Purpose and Exceptions, of ASME A17.3 which states: *"The purpose of this Code is to provide for the safety of life and limb, and to promote the public welfare.*

Where a requirement, because of practical difficulty, cannot be complied with literally or where its literal application would cause undue hardship, the authority having jurisdiction may, upon proper application, grant exceptions, but only when it is clearly evident that reasonable safety is assured.

The authority having jurisdiction may also grant exceptions or permit alternate methods where it is assured that equivalent objectives can be achieved by establishing and maintaining effective safety."

No suggestion is being made that new elevator systems should not be required to comply.

Finally, a corresponding request for a revision to ASME A17.3 will be submitted to clarify that the requirement for retrofitting the fire safety features of Phase I emergency recall operation and Phase II emergency in-car operation is triggered by the fire code.

Cost Impact: The change should reduce the cost of compliance by providing more flexibility for owners to comply.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

1103.3 Elevator operation. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3.

Exceptions:

1. Buildings without occupied floors located more than 55 feet above or 25 feet below the lowest level of fire department vehicle access where protected at the elevator shaft openings with additional fire doors in accordance with Section 716.5 of the *International Building Code* and where all of the following conditions are met:
 - 1.1 The doors shall be provided with vision panels of approved fire-protection-rated glazing so located as to furnish clear vision of the approach to the elevator. Such glazing shall not exceed 100 square inches in area.
 - 1.2 The doors shall be held open but be automatic-closing by activation of a fire alarm initiating device installed in accordance with the requirements of NFPA 72 as for Phase I Emergency Recall Operation, and shall be located at each floor served by the elevator; in the associated elevator machine room, control space, or control room; and in the elevator hoistway, when sprinklers are located in those hoistways.
 - 1.3 The doors, when closed, shall have signs visible from the approach area stating: WHEN THESE DOORS ARE CLOSED OR IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS.
2. Buildings without occupied floors located more than 55 feet above or 25 feet below the lowest level of fire department vehicle access when provided with automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Freight elevators in buildings provided with both automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2 and at least one ASME 17.3 compliant elevator serving the same floors.

~~The provisions of this section shall not be construed to allow the Elimination of previously installed Phase I emergency recall or Phase II emergency in-car systems shall not be permitted.~~

Committee Reason: The committee agreed with the proponent's reason statement that the code change brings important exceptions into the code. The modification clarifies the issue of elevator travel distance.

Assembly Action:

None

Final Hearing Results

F215-13

AM

Code Change No: F216-13

Original Proposal

Section(s): 1103.3 (New), 1103.3.1 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Revise as follows:

1103.3 Existing elevators. Existing elevators, escalators and moving walks shall comply with the requirements of Sections 1103.3.1 and 1103.3.2.

1103.3.1 Elevators, escalators and moving walks. Existing elevators, escalators and moving walks in Group I-2 Condition 2 occupancies shall comply with ASME A17.3.

1103.3.2 Elevator emergency operation. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3.

Reason: The healthcare industry has historically been required to comply with regulations set forth by accreditation and certification agencies, such as The Joint Commission. Because the ICC family of codes does not currently have an existing elevator standard, ASME A17.3 *Safety Code for Existing Elevators and Escalators* is proposed for compliance of existing elevators in Group I-2 Condition 2 occupancies. ASME A17.3 has been referenced by guidelines adopted by The Joint Commission for over a decade and this code change will provide correlation of the IFC with the mandated healthcare industry standard.

Adding a reference to ASME A17.3 will require that existing elevators escalators and moving walks and their related operating equipment in Group I-2 Condition 2 occupancies comply with a minimum level of safety. Because the occupants of these types of facilities are often incapable of self-preservation, it will also provide important features essential for occupant safety including escalator and moving walk emergency stop buttons and automatic skirt obstruction stop features. A new Section 1103.3 is included editorially to conform to established code style for multiple requirement sections.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Cost Impact: The code change proposal should not increase the cost of construction because compliance with similar requirements is already mandated by facility licensure requirements.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F216-12

AS

Code Change No: F217-13

Original Proposal

Section(s): 1103.4, 1103.4.1, 1103.4.2, 1103.4.3, 1103.4.4, 1103.4.8 (New)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee
(cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 1103 FIRE SAFETY REQUIREMENTS FOR EXISTING BUILDINGS

1103.4 Vertical openings. Interior vertical ~~shafts~~ openings, including but not limited to *stairways*, elevator hoistways, service and utility shafts, that connect two or more stories of a building, shall be enclosed or protected as specified in Sections 1103.4.1 through 1103.4.7.

1103.4.1 Group I-2 and I-3 occupancies. In Group I-2 and I-3 occupancies, interior vertical openings connecting two or more stories shall be protected with 1-hour fire-resistance-rated construction.

Exception: In Group I-3 occupancies, exit stairways or ramps and exit access stairways or ramps constructed in accordance with Section 408 in the *International Building Code*.

1103.4.2 Three to five stories. In other than Group I-2 and I-3 occupancies, interior vertical openings connecting three to five stories shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* shall be installed throughout the building in accordance with Section 903.3.1.1 or 903.3.1.2.

Exceptions:

1. Vertical opening protection is not required for Group R-3 occupancies.
2. Vertical opening protection is not required for open parking garages ~~and ramps~~.
3. Vertical opening protection for escalators shall be in accordance with Section 1103.4.5, 1103.4.6 or 1103.4.7.
4. Exit access stairways and ramps shall be in accordance with Section 1103.4.8.

1103.4.3 More than five stories. In other than Group I-2 and I-3 occupancies, interior vertical openings connecting more than five stories shall be protected by 1-hour fire-resistance-rated construction.

Exceptions:

1. Vertical opening protection is not required for Group R-3 occupancies.
2. Vertical opening protection is not required for open parking garages ~~and ramps~~.
3. Vertical opening protection for escalators shall be in accordance with Section 1103.4.5, 1103.4.6 or 1103.4.7.
4. Exit access stairways and ramps shall be in accordance with Section 1103.4.8.

1103.4.4 Atriums and covered malls. In other than Group I-2 and I-3 occupancies, interior vertical openings in a covered mall building or a building with an atrium shall be protected by either 1-hour fire-

resistance-rated construction or an *automatic sprinkler system* shall be installed throughout the building in accordance with Section 903.3.1.1 or 903.3.1.2.

Exceptions:

1. Vertical opening protection is not required for Group R-3 occupancies.
2. Vertical opening protection is not required for open parking garages ~~and ramps~~.
3. Exit access stairways and ramps shall be in accordance with Section 1103.4.8.

1103.4.5 Escalators in Group B and M occupancies. Escalators creating vertical openings connecting any number of stories shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* in accordance with Section 903.3.1.1 installed throughout the building, with a draft curtain and closely spaced sprinklers around the escalator opening.

1103.4.6 Escalators connecting four or fewer stories. In other than Group B and M occupancies, escalators creating vertical openings connecting four or fewer stories shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 shall be installed throughout the building, and a draft curtain with closely spaced sprinklers shall be installed around the escalator opening.

1103.4.7 Escalators connecting more than four stories. In other than Group B and M occupancies, escalators creating vertical openings connecting five or more stories shall be protected by 1-hour fire-resistance-rated construction.

1103.4.8 Occupancies other than Group I-2 and I-3. In other than Group I-2 and I-3 occupancies, floor openings containing exit access stairways or ramps that do not comply with one of the conditions listed in this section shall be protected by 1-hour fire-resistance-rated construction.

1. Exit access stairways and ramps that serve, or atmospherically communicate between, only two stories. Such interconnected stories shall not be open to other stories.
2. In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit.
3. Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or ramp, and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Groups B and M occupancies, this provision is limited to openings that do not connect more than four stories.
4. Exit access stairways and ramps within an atrium complying with the provisions of Section 404 of the International Building Code.
5. Exit access stairways and ramps in open parking garages that serve only the parking garage.
6. Exit access stairways and ramps serving open-air seating complying with the exit access travel distance requirements of Section 1028.7 of the International Building Code.
7. Exit access stairways and ramps serving the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities.

Reason: The intent of this code change is to resolve conflicts between the means of egress requirements in chapter 10 of both the IBC and IFC, and chapter 11 of the IFC regarding open exit access stairway and ramp construction. There are a number of building code provisions for new construction in current IBC/IFC chapter 10 Means of Egress that permit exit access stair floor openings without a fire rated enclosure. Many of these permitted floor openings are required to be fire rated by IFC chapter 11 Construction Requirements for Existing Buildings. This sets up a direct conflict not just between the IBC and IFC but between two chapters in the IFC. A building constructed under the 2012 IBC/IFC and in full compliance with chapter 10 of both codes is in violation of IFC sections 1103.4 through 1104.3.7 as soon as the certificate of occupancy issued. Clearly it was not the intent of IFC chapter 11 to contradict chapter 10 of the IFC or IBC. This code change takes the conditions that permit exit access stair and ramp floor openings and places them in IFC chapter 11 so that the requirements of IFC chapter 11 are consistent with IFC chapter 10 and IBC chapter 10.

Specific section changes:

Section 1103.4.1 was modified to specifically address groups I-2 and I-3 and 1103.4.2 through 1103.4.4 was modified to include I-1 and I-4 occupancies. This was done because the specific conditions that allow unenclosed exit access stairs in IBC and IFC chapter 10 differ based on that distinction. In addition the group I-3 exception was added to 1103.4.1 to be consistent with the current exception #10 to IFC/IBC section 1009.3 and the current single exception to IFC/IBC section 1022.2.

Sections 1103.4.2 through 1103.4.4 each had an exception added to refer to new section 1103.4.3 for conditions that allow unenclosed exit access stairs.

Section 1103.4.3 was added to provide all of the current conditions that allow an un-enclosed exit access stair or ramp. All of these conditions are existing from IFC/IBC chapter 10 section 1009.3. Note that in the 2015 IBC and IFC these conditions will be in new IFC/IBC section 1018. It is very important to note that this section and these conditions only apply to exit access stairs and ramps. This new section does not apply to exit stairs. Exit stairs are not exempted from enclosure.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and because it resolves conflict between the IBC and IFC.

Assembly Action:

None

Final Hearing Results

F217-12

AS

Code Change No: F218-13

Original Proposal

Section(s): 1103.4.1

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Revise as follows:

IFC 1103.4.1 Group I occupancies. In Group I occupancies, interior vertical openings connecting two or more stories shall be protected with 1-hour fire-resistance-rated construction.

Exceptions:

1. In Group I-2 Condition 2 equipped throughout with an automatic sprinkler system, vertical opening connecting two or more stories need not be protected with 1-hour fire-resistance-rated construction where both of the following conditions are met:
 - 1.1. The atrium volume is accounted for in the design of a smoke control system in accordance with Section 909.
 - 1.2 The floor levels within the vertical opening shall contain only low or ordinary fire hazard uses.
2. In Group I-2 Condition 2, where an automatic sprinkler system is installed in accordance with Section 404.6 of the *International Building Code*, glass walls shall be considered to be equivalent to 1-hour fire-resistance-rated construction for purposes of this section. Where glass doors are provided in the glass wall, they shall be either self-closing or automatic-closing.
3. In Group I-2 Condition 2, 1-hour fire-resistance-rated construction is not required where a glass-block wall assembly complying with Section 2110 of the *International Building Code* and having a ¾-hour fire protection rating is provided.

Reason: The intent of this code change is to make the IFC consistent with federal standards that are in place for the maintenance of Group I-2 Condition 2 (hospitals) and to clarify the allowable use and construction of atria in hospitals. This adds language to clarify the fire hazard class allowed in the existing atrium (no higher than ordinary), as opposed to only low hazard class in new. A smoke control system is also acknowledged as a factor when it comes to separation of the atrium, and clarifies that the smoke control system's engineering analysis must account for any spaces open to it.

Glass walls points back to the language in IBC Section 404.6 in an attempt to set that as a minimum, retroactive standard. It is far simpler to address a potential deficiency with addition of a smoke control system or properly installed sprinklers at the glass, rather than reconstructing the walls themselves.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Cost impact: This proposal would make the IFC consistent with federal standards that are in place for the maintenance of hospitals, and therefore would not represent an increase in cost.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The disapproval was based on the committee's concern that the exceptions in the proposal do not exactly mirror Section 404.6 of the IBC which it felt should be the minimum standard. The automatic sprinkler requirements are also not coordinated with regard to complete protection of the building or only protection in the Group I-2 fire area.

Assembly Action:

None

Public Comments

Public Comment 1:

John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee, requests Approval as Modified by this Public Comment.

Replace the proposal as follows:

IFC 1103.4.1 Group I occupancies. In Group I occupancies, interior vertical openings connecting two or more stories shall be protected with 1-hour fire-resistance-rated construction.

Exceptions:

1. In Group I-2, unenclosed vertical openings not exceeding two connected stories and not concealed within the building construction shall be permitted as follows:
 - 1.1 The unenclosed vertical openings shall be separated from other unenclosed vertical openings serving other floors by a smoke barrier.
 - 1.2 The unenclosed vertical openings shall be separated from corridors by smoke partitions.
 - 1.3 The unenclosed vertical openings shall be separated from other fire or smoke compartments on the same floors by a smoke barrier.
 - 1.4 On other than the lowest level, the unenclosed vertical openings shall not serve as a required means of egress.
2. In Group I-2, atriums connecting three or more stories shall not require a 1-hour fire resistance rated construction when the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3, and all of the following conditions are met:
 - 2.1. For other than existing approved atriums with a smoke control system, where the atrium was constructed and is maintained in accordance with the code in effect at the time the atrium was created, the atrium shall have a smoke control system that is in compliance with Section 909; and,
 - 2.2. Glass walls forming a smoke partition or a glass-block wall assembly shall be permitted when in compliance with 2.2.1 or 2.2.2:
 - 2.2.1. Glass walls forming a smoke partition shall be permitted where all of the following conditions are met:
 1. Automatic Sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway or occupied space on the atrium side.
 2. The sprinklers shall not be more than 12 inches away from the face of the glass and at intervals along the glass of not greater than 72 inches.
 3. Windows in the glass wall shall be non-operating type.
 4. The glass wall and windows shall be installed in a gasket frame in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates.
 5. The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction.
 - 2.2.2. A fire barrier is not required where a glass-block wall assembly complying with Section 2110 of the International Building Code and having a 3/4-hour fire protection rating is provided.
 - 2.3. Where doors are provided in the glass wall, they shall be either self-closing or automatic-closing and shall be constructed to resist the passage of smoke.

Commenter's Reason: Based on the input from the committee and interested parties, the AHC and CTC present the revised proposal above. The intent of this change is to appropriately address floor openings in existing construction. Today a conflict exists in the code, the building code would allow you to construction a floor opening without a 1 hour fire barrier in certain specific cases. The fire code would then tell you that approval is void and unilaterally require a 1 hour rating around all openings. This also impacts all historical non-rated floor openings that have been reviewed, approved and maintained. Practically we believe that this is not being enforced today and may be a reason why many jurisdictions do not adopt this chapter of the IFC. To set an appropriate retroactive standard, we believe the code should consider the historical context of the model codes. Unrated vertical openings have been allowed in hospitals and nursing homes previously. Atriums have been installed with various types of smoke venting and

removal systems over the past few decades. The AHC has attempted to determine the general requirements that have been broadly used through these versions of codes. If we set the requirements based on the current version of the IBC, the facilities will constantly be tearing out existing, compliant construction to upgrade to new requirements. The federal regulations governing hospitals and nursing homes have used a retroactive standard similar to the one above for the past 10 years. Through our experiences with facilities during that period of time, we believe that the requirements listed above are reasonably consistent with that action.

In regards to the sprinkler question, currently all Group I-2 fire areas are required to have sprinklers retroactively per Chapter 11 of this Code. In Dallas, a code change was accepted to provide sprinkler protection throughout the building by a date certain provided by the adopting jurisdiction. The code change here was modified to state that the atrium option can be used if the "building is equipped throughout".

Final Hearing Results

F218-13

AMPC1

Code Change No: F220-13

Original Proposal

Section(s): 1103.4.8 (New), 1103.4.9 (New), 603.8.6 (New), 603.8.7 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Add new text as follows:

1103.4.8 Waste and linen chutes. In Group I-2 occupancies, existing waste and linen chutes shall comply with Sections 1103.4.8.1 through 1103.4.8.5.

1103.4.8.1 Enclosure. Chutes shall be enclosed with 1-hour fire-resistance-rated construction. Opening protectives shall be in accordance with Section 716 of the *International Building Code* and have a fire protection rating of not less than 1-hour.

1103.4.8.2 Chute intakes. Chute intakes shall comply with Section 1103.4.8.2.1 or 1103.4.8.2.2.

1103.4.8.2.1 Chute intake direct from corridor. Where intake to chutes is direct from a corridor, the intake opening shall be equipped with a chute intake door in accordance with Section 716 of the *International Building Code* and having a fire protection rating of not less than 1-hour.

1103.4.8.2.2 Chute intake via a chute intake room. Where the intake to chutes is accessed through a chute intake room, the room shall be enclosed with 1-hour fire-resistance rated construction. Opening protectives for the intake room shall be in accordance with Section 716 of the *International Building Code* and have a fire protection rating of not less than $\frac{3}{4}$ hour. Opening protective for the chute enclosure shall be in accordance with Section 1103.4.8.1.

1103.4.8.3 Automatic sprinkler system. Chutes shall be equipped with an *approved automatic sprinkler system* in accordance with Section 903.2.11.2.

1103.4.8.4 Chute discharge rooms. Chutes shall terminate in a dedicated chute discharge room. Such rooms shall be separated from the remainder of the building by a minimum of 1-hour fire-resistance-rated construction. Opening protectives shall be in accordance with Section 716 of the *International Building Code* and have a fire protection rating of not less than 1-hour.

1103.4.8.5 Chute discharge protection. Chute discharges shall be equipped with a self-closing or automatic-closing opening protective in accordance with Section 716 of the *International Building Code* and having a fire protection rating of not less than 1-hour.

1103.4.9 Flue-fed incinerators. Existing flue-fed incinerator rooms and associated flue shafts shall be protected with 1-hour fire-resistance-rated construction and have no other vertical openings connected with the space other than the associated flue. Opening protectives shall be in accordance with Section 716 of the *International Building Code* and have a fire protection rating of not less than 1-hour.

Add new text as follows:

603.8.6 Flue-fed incinerators in Group I-2. In Group I-2 occupancies, the continued use of existing flue-fed incinerators is prohibited.

603.8.7 Incinerator inspections in Group I-2. Incinerators in Group I-2 occupancies shall be inspected at least annually in accordance with the manufacturer's instructions. Inspection records shall be maintained on the premises and made available to the fire code official upon request.

Reason: The intent of this code change is to clarify the allowable use and construction of chutes and incinerators in Group I-2 occupancies. These items are still used as an integral part of the operation of a healthcare facility, especially the waste or linen chutes. Some incinerators are still in use, but this proposed requirement seeks to separate them from other vertical openings, especially a trash chute, by requiring a separate discharge room from the incinerator. Although newer incinerators are designed to contemporary codes, standards and regulations, most older incinerators are not in use or are otherwise abandoned in existing facilities because of other regulation from entities such as the EPA, this requirement seeks to separate and protect any potential hazard of inactive incinerator systems from the rest of the building.

Also, in older facilities that pre-date current requirements, there is the occasion that the chute door opens into a corridor. It was not prohibited at the time of construction, so it is not practical to reconstruct the chute to meet modern standards. Therefore, this section aims to directly address that situation by defining requirements for which it should be safely maintained.

This proposal would make the IFC consistent with federal standards that are in place to maintain hospitals, and therefore would not represent an increase in cost.

This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

Cost Impact: No increase in the cost of construction is associated with this code change. This change is consistent with existing federal certification requirements.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change reflects an important and needed coordination effort to correlate the IFC with Federal Center for Medicaid and Medicare Services (CMS) healthcare regulations with which all facilities must now comply and that it will eliminate costly conflicting requirements among different codes applicable to such facilities.

Assembly Action:

None

Final Hearing Results

F220-12

AS

Code Change No: F225-13

Original Proposal

Section(s): 1103.5.3 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Add new text as follows:

1103.5.3 Group I-2 Condition 2. In addition to the requirements of Section 1103.5.2, existing buildings of Group I-2 Condition 2 occupancy shall be equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. The automatic sprinkler system shall be installed by [DATE TO BE INSERTED BY THE JURISDICTION].

Reason: The intent of this code change is to make mandatory the use of an approved automatic sprinkler system throughout existing hospital (Group I-2 Condition 2) occupancies. The healthcare industry recognizes sprinkler systems are a vital component of the safety of the overall building systems and components. The current mandatory sprinkler retrofit requirement in Section 1103.5.2 first entered the Fire Code in the 2009 version, but does not require sprinklering the entire building throughout. The Ad Hoc for Healthcare, which is made up of representatives from both regulated facilities and enforcement, believe that it is time to take the requirement a step further and require the ENTIRE building to be sprinklered within a reasonable time frame.

To ensure continuous operation in healthcare facilities, the installation of sprinklers systems needs to be carefully planned so as to not adversely affect patient health. Accessing and exposing ceiling spaces can create conditions that will lead to infection and possibility death to patients with compromised or suppressed immune systems. In many situations, hospitals may not be able to appropriately retrofit the installation of a fire suppression system; in those situations, a time frame is needed to replace facilities. . The period for adoption of this proposed requirement has been left to the local authority having jurisdiction. Coordinating the timeframe for adoption with federal requirements is recommended. It is currently anticipated that the Centers for Medicaid and Medicare (the federal authority having jurisdiction) will require retroactive sprinklering of hospitals by the year 2021. However, the exact timeframe is uncertain at the time of development of this change.

Regardless, the federal government is considering the reasons noted above. This is an important next step in ensuring the safety of fragile population. Facilities need some time to accomplish this safety, without adversely affected the health of patients and disrupting patient care. These are the same factors that a jurisdiction should consider when choosing a date for adoption. It should be also clear that this change is a separate measure that must be taken in addition to the current requirement. It is not intended to allow a facility to have a timeframe for installing the current requirement (although jurisdictions may choose to do this). Nor is it intended to imply that the entire building containing a hospital should be sprinklered immediately. At a minimum, a three year timeframe is recommended for implementation of this requirement. This considers the process planning, capital approval, regulatory approval, design and installation of the sprinkler system. The capital planning piece of a large scale initiative, such as a building-wide sprinkler system, normally spans multiple fiscal years, and more can be considered if the regulatory environment allows.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Cost impact: This proposal would make the IFC consistent with the direction that federal standards are taking to maintain hospitals and therefore would not represent an increase in cost.

Analysis: The "Group I-2 Condition 2" terminology used in this proposal in lieu of "Group I-2 hospital" is the result of approved Group A code change G257-12.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

1103.5.3 Group I-2 Condition 2. In addition to the requirements of Section 1103.5.2, existing buildings of Group I-2 Condition 2 occupancy shall be equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. The automatic sprinkler system shall be installed as established by the adopting ordinance by [DATE TO BE INSERTED BY THE JURISDICTION].

Committee Reason: The committee approved the code change based on the proponent's reason statement. The modification is more in keeping with established code style for such provisions.

Assembly Action:

None

Analysis: The following is shown for illustration purposes only and is not part of the code change or the modification. If this code change is successful, the sample adopting ordinance for the IFC that appears in the IFC preface pages will be revised in Section 2 to read as follows:

Section 2. That the following sections are hereby revised:

Section 101.1. Insert: **[NAME OF JURISDICTION]**

Section 109.4. Insert: **[OFFENSE, DOLLAR AMOUNT, NUMBER OF DAYS]**

Section 111.4. Insert: **[DOLLAR AMOUNT IN TWO LOCATIONS]**

Section 1103.5.3. Insert: **[DATE BY WHICH SPRINKLER SYSTEM MUST BE INSTALLED]**

(Portions of the ordinance not shown remain unchanged.)

Assembly Action:

None

Final Hearing Results

F225-13

AM

Code Change No: F227-13

Original Proposal

Section(s): 1103.7.2

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

1103.7.2 Group I-1. An automatic fire alarm smoke detection system shall be installed in existing Group I-1 residential care/assisted living facilities in accordance with Section 907.2.6.1.

Exceptions:

1. Manual fire alarm boxes in resident or patient sleeping areas shall not be required at *exits* if located at all nurses' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.5.2 are not exceeded.
2. Where each sleeping room has a *means of egress* door opening directly to an exterior egress balcony that leads directly to the *exits* in accordance with Section 1019, and the building is not more than three stories in height.

Reason: The deletion after Group I-1 is for consistency with the terminology established in G31-12. The change of terminology is for consistency with Section 907.2.6.1. See below.

907.2.6.1 Group I-1. An automatic smoke detection system shall be installed in *corridors*, waiting areas open to *corridors* and *habitable spaces* other than *sleeping units* and kitchens. The system shall be activated in accordance with Section 907.5.

Exceptions:

1. Smoke detection in *habitable spaces* is not required where the facility is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. Smoke detection is not required for exterior balconies.

This will not change the single-station smoke detector requirements in Section 1103.8.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

1103.7.2 Group I-1. An automatic fire alarm smoke detection system shall be installed in existing Group I-1 facilities in accordance with Section 907.2.6.1.

Exceptions:

1. ~~Manual fire alarm boxes in resident or patient sleeping areas shall not be required at exits if located at all nurses' control stations or other constantly attended staff locations, provided such stations are visible and continuously~~

~~accessible and that travel distances required in Section 907.5.2 are not exceeded.~~

2. Where each sleeping room has a *means of egress* door opening directly to an exterior egress balcony that leads directly to the *exits* in accordance with Section 1019, and the building is not more than three stories in height.

Committee Reason: The committee approved the code change based on the proponent's reason statement. The modification returns the main text to the original to be consistent with the terminology in the sections both before and after this section. However, the reference to Section 907.2.6.1 is still only for a smoke detection system. The first exception is no longer needed as it is redundant with the exception already permitted in Section 907.2.6.

Assembly Action:

None

Final Hearing Results

F227-13

AM

Code Change No: F228-13

Original Proposal

Section(s): 1103.7.6

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration
(jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

1103.7.6 Group R-2. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in existing Group R-2 occupancies more than three stories in height or with more than 16 *dwelling* or *sleeping units*.

Exceptions:

1. Where each living unit is separated from other contiguous living units by *fire barriers* having a *fire-resistance rating* of not less than 0.75 hour, and where each living unit has either its own independent *exit* or its own independent stairway or ramp discharging at grade.
2. A separate fire alarm system is not required in buildings that are equipped throughout with an *approved supervised automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 and having a local alarm to notify all occupants.
3. A fire alarm system is not required in buildings that do not have interior *corridors* serving *dwelling units* and are protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that *dwelling units* either have a *means of egress* door opening directly to an exterior *exit access* that leads directly to the *exits* or are served by open ended *corridors* designed in accordance with Section 1026.6, Exception 4.
4. A fire alarm system is not required in buildings that do not have interior *corridors* serving *dwelling units*, do not exceed 3 stories in height and comply with all of the following:
 - 4.1 Each *dwelling unit* is separated from other contiguous *dwelling units* by *fire barriers* having a *fire-resistance rating* of not less than $\frac{3}{4}$ hour
 - 4.2 Each *dwelling unit* is provided with interconnected smoke alarms complying with Section 907.2.11 in all sleeping rooms, plus not less than one hardwired smoke alarm in the common area of each floor or mezzanine level. Interconnection shall be permitted to be hardwired or by listed smoke alarms with wireless interconnect capability

Reason: The proposal provides a reasonable alternative to retrofitting a manual fire alarm system in existing Group R-2 occupancy buildings not exceeding three stories in height and having exits that lead directly to the outside. Fire risk in apartments tends to be greatest for occupants inside the dwelling unit where a fire originates, and money spent to retrofit firesafety equipment in apartments is better spent within dwelling units, as opposed to common areas.

Countless existing apartment buildings have only a single smoke alarm in the common area, and the IFC does not require retrofitting of smoke alarms in sleeping rooms when such alarms weren't required at the time of construction. The lack of smoke alarms in bedrooms, and particularly the lack of interconnecting alarm signals, increases the risk of injury or death in a unit of fire origin and other units that experience smoke infiltration. An additional consequence may be delayed recognition of a fire event, which increases the risk of harm to other building occupants and may delay notification of the fire department.

The alternative of a manual fire alarm system is less beneficial from a safety perspective because it requires an occupant to detect a fire event (which may take more time with fewer smoke alarms) and then find and activate a pull stations. Occupants must then respond to the alarm signal, and with the history of false alarms associated with manual fire alarm systems in apartment buildings, a response without other indications of a fire is questionable.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change will provide an increased level of life safety in an economical fashion for existing Group R-2 buildings.

Assembly Action:

None

Public Comments

Public Comment 1:

Jeffrey M. Shapiro, P.E., International Code Consultants, representing National Multi Housing Council, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

1103.7.6 Group R-2. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in existing Group R-2 occupancies more than three stories in height or with more than 16 *dwelling* or *sleeping units*.

Exceptions:

1. Where each living unit is separated from other contiguous living units by *fire barriers* having a *fire-resistance rating* of not less than 0.75 hour, and where each living unit has either its own independent *exit* or its own independent stairway or ramp discharging at grade.
2. A separate fire alarm system is not required in buildings that are equipped throughout with an *approved supervised automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 and having a local alarm to notify all occupants.
3. A fire alarm system is not required in buildings that do not have interior *corridors* serving *dwelling units* and are protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that *dwelling units* either have a *means of egress* door opening directly to an exterior *exit access* that leads directly to the *exits* or are served by open ended *corridors* designed in accordance with Section 1026.6, Exception 4.
4. A fire alarm system is not required in buildings that do not have interior *corridors* serving *dwelling units*, do not exceed 3 stories in height and comply with all of the following:
 - 4.1 Each *dwelling unit* is separated from other contiguous *dwelling units* by *fire barriers* having a *fire-resistance rating* of not less than ¾ hour
 - 4.2 Each dwelling unit is provided with smoke alarms complying with the requirements of Section 907.2.11. ~~interconnected smoke alarms complying with Section 907.2.11 in all sleeping rooms, plus not less than one hardwired smoke alarm in the common area of each floor or mezzanine level. Interconnection shall be permitted to be hardwired or by listed smoke alarms with wireless interconnect capability~~

Commenter's Reason: After the committee approved this proposal, questions were raised regarding the clarity of the requirements in Item 4.2. In reviewing those concerns, it seems to make better sense to simply reference the installation requirements that apply to new construction in Section 907.2.11. The basic logic of the original proposal, which was approved without opposition at the committee hearing with a 14:0 vote, continues to apply. Retrofitting interconnected smoke alarms into all sleeping rooms in existing dwelling units is preferable to a manual fire alarm system for buildings that do not have interior corridors and do not exceed 3 stories in height.

It should be noted that the requirement in Section 1103.7.6 have been in the code for quite some time. Any jurisdiction intending to enforce the existing manual fire alarm requirement has already had several years to adopt and apply that requirement. In those jurisdictions that have not yet been able to enact a retroactive fire alarm requirement, this exception provides an alternative solution that greatly increase safety and has the support of the National Multi Housing Council.

Final Hearing Results

F228-13

AMPC1

Code Change No: F229-13

Original Proposal

Section(s): 1103.8.1

Proponent: David S. Collins, FAIA, The Preview Group, Inc., representing The American Institute of Architects (dcollins@preview-group.com); Robert J Davidson, Davidson Code Concepts, LLC

Revise as follows:

1103.8.1 Where required. Existing Group I-1 and R occupancies shall be provided with single-station smoke alarms in accordance with Section 907.2.11 of the *International Building Code*, ~~except as provided~~ required in Sections 1103.8.2. ~~and~~ or 1103.8.3.

Reason: The provisions of 1103.8.2 and 1103.8.3 aren't exceptions, but additional requirements for interconnection and power source for specific applications. Each of these two sections can be applied independently without connection to one another.

Cost Impact: The proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify proposal as follows:

1103.8.1 Where required. Existing Group I-1 and R occupancies shall be provided with single-station smoke alarms in accordance with Section 907.2.11 of the *International Building Code*, ~~except~~ as required in Sections 1103.8.2 or 1103.8.3.

Committee Reason: The committee agreed with the proponent that the code change provides a needed clarification of the text. The modification further clarifies that the two cited sections are requirements rather than exceptions.

Assembly Action:

None

Public Comments

Public Comment :

Jeffrey M. Shapiro, P.E., International Code Consultants, representing National Multi Housing Council, requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

1103.8.1 Where required. Existing Group I-1 and R occupancies shall be provided with single-station smoke alarms in accordance with Section 907.2.11 of the *International Building Code*, ~~Interconnection and power sources shall be in accordance with~~ as required in Sections 1103.8.2 ~~or~~ and 1103.8.3.

Commenter's Reason: The committee approved text isn't entirely clear since Sections 1103.8.2 and 1103.8.3 are only supplemental to the basic requirement of complying with Section 907.2.11. The proposed revision clarifies this point. No technical change is intended.

Final Hearing Results

F229-13

AMPC

Code Change No: **F230-13**

Original Proposal

Section(s): 1103.10 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Add new text as follows:

1103.10 Medical gases. Medical gases stored and transferred in healthcare related facilities shall be in accordance with Chapter 53.

Reason: This proposal adds a retroactive requirement in Chapter 11 that requires compliance with Chapter 53 compressed gases when medical gases are stored and transferred in healthcare related facilities. It was felt necessary to make sure that all existing facilities comply with these requirements to meet CMS guidelines. A general reference was made since it would not simply be compliance with Section 5306 that is necessary but with the compressed gas requirements in general. The medical gas requirements are only one aspect of the regulation of compressed gases.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change provides correlation with IFC Chapter 53.

Assembly Action:

None

Final Hearing Results

F230-12

AS

Code Change No: **F231-13**

Original Proposal

Section(s): 1104.2

Proponent: David S. Collins, FAIA, The Preview Group, Inc., representing The American Institute of Architects (dcollins@preview-group.com); Robert J Davidson, Davidson Code Concepts, LLC

Revise as follows:

1104.2 Elevators, escalators and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required means of egress.

Exceptions:

1. Elevators used as an accessible means of egress where allowed by Section 1007.4 of the *International Building Code*.
2. Previously approved elevators, escalators and moving walks in existing buildings.

Reason: Chapters 4 and 30 of the IBC include occupant evacuation elevators for use in lieu of a third egress stair from high rise buildings of Group R-2 over 420 feet in height. If such elevators are "previously approved" the IFC should not prohibit their use.

Cost Impact: This will decrease the cost of construction by the elimination of conflicts within code enforcement documents.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change provides correlation with IBC elevator provisions.

Assembly Action:

None

Final Hearing Results

F231-12

AS

Code Change No: F232-13

Original Proposal

Section(s): 1104.5

Proponent: David S. Collins, FAIA, The Preview Group, Inc., representing The American Institute of Architects (dcollins@preview-group.com); Robert J Davidson, Davidson Code Concepts, LLC

Revise as follows:

1104.5 Illumination emergency power. Where means of egress illumination is provided, ~~the~~ power supply shall normally be provided by the premises' electrical supply. In the event of power supply failure, illumination shall be automatically provided from an emergency system for the following occupancies where such occupancies require two or more means of egress:

Reason: It isn't clear in the current wording when the power must be provided and for what purpose.

Cost Impact: There will be no cost impact with this change.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change provides clarification of what the power supply is being provided for.

Assembly Action:

None

Final Hearing Results

F232-12

AS

Code Change No: F233-13

Original Proposal

Section(s): 1104.7

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Revise as follows:

1104.7 Size of doors. The minimum width of each door opening shall be sufficient for the *occupant load* thereof and shall provide a clear width of not less than 28 inches (711 mm). Where this section requires a minimum clear width of 28 inches (711 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 28 inches (711 mm). ~~The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal.~~ In ambulatory care facilities, doors serving as means of egress from patient treatment rooms or patient sleeping rooms shall provide a clear width of not less than 32 inches (813 mm). ~~Means of egress doors in an occupancy~~ In Group I-2, doors serving as means of egress and used for the movement of beds shall provide a clear width not less than 41.5 inches (1054 mm). ~~The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal.~~ The height of doors openings shall not be less than 80 inches (2032 mm).

Exceptions:

1. The minimum and maximum width shall not apply to door openings that are not part of the required *means of egress* in occupancies in Groups R-2 and R-3.
2. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum width.
3. Width of door leaves in revolving doors that comply with Section 1008.1.4.1 shall not be limited.
4. Door openings within a *dwelling unit* shall not be less than 78 inches (1981 mm) in height.
5. Exterior door openings in *dwelling units*, other than the required *exit* door, shall not be less than 76 inches (1930 mm) in height.
6. *Exit access* doors serving a room not larger than 70 square feet (6.5 m²) shall be not less than 24 inches (610 mm) in door width.
7. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the door.

Reason: Most of this proposal is an editorial coordination with IBC Section 1008.1.1. The addition of the 32" inch clear width for Ambulatory Care Facilities is based on the nature of the activities within the space. This will also coordinate with the federal requirements for accessibility in the 1994 ADAAG and 2010 ADA Standard for Accessible Design for these necessary facilities.

This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

1104.7 Size of doors. The minimum width of each door opening shall be sufficient for the *occupant load* thereof and shall provide a clear width of not less than 28 inches (711 mm). Where this section requires a minimum clear width of 28 inches (711 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 28 inches (711 mm). In ambulatory care facilities, doors serving as means of egress from patient treatment rooms or patient sleeping rooms shall provide a clear width of not less than 32 inches (813 mm). In Group I-2, means of egress doors ~~serving as means of egress and where~~ used for the movement of beds shall provide a clear width not less than 41.5 inches (1054 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. The height of doors openings shall not be less than 80 inches (2032 mm).

Exceptions:

1. The minimum and maximum width shall not apply to door openings that are not part of the required *means of egress* in occupancies in Groups R-2 and R-3.
2. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum width.
3. Width of door leaves in revolving doors that comply with Section 1008.1.4.1 shall not be limited.
4. Door openings within a *dwelling unit* shall not be less than 78 inches (1981 mm) in height.
5. Exterior door openings in *dwelling units*, other than the required *exit* door, shall not be less than 76 inches (1930 mm) in height.
6. *Exit access* doors serving a room not larger than 70 square feet (6.5 m²) shall be not less than 24 inches (610 mm) in door width.
7. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the ~~door~~ floor.

Committee Reason: The committee agreed with the proponent that the code change provides needed correlation with the IBC and ADAAG. The modification provides clarification of exactly which doors are being referred to and also corrects a typographical error.

Assembly Action:

None

Final Hearing Results

F233-13

AM

Code Change No: **F234-13**

Original Proposal

Section(s): 1104.8

Proponent: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

Revise as follows:

1104.8 Opening force for doors. The opening force for interior side-swinging doors without closers shall not exceed a 5 pound (22 N) force. These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position. For other side-swinging, sliding and folding doors, the door latch shall release when subjected to a force of not more than 15 pounds (66 N). The door shall be set in motion when subjected to a force not exceeding 30 pounds (133 N). The door shall swing to a full-open position when subjected to a force of not more than 50 pounds (222 N). Forces shall be applied to the latch side.

Reason: Revisions approved in the 2012 ICC code development cycle for the 2015 IBC should be coordinated in this section of the IFC. The proposed revisions to this section of the IFC is consistent with the revisions to section 1008.1.3 of the 2015 IBC and section 1008.1.3 of the 2015 IFC, resulting from code change proposal E62-12 which was approved "as modified" in 2012.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

1104.8 Opening force for doors. The opening force for interior side-swinging doors without closers shall not exceed a 5 pound (22 N) force. ~~These~~ The opening forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position. For other side-swinging, sliding and folding doors, the door latch shall release when subjected to a force of not more than 15 pounds (66 N). The door shall be set in motion when subjected to a force not exceeding 30 pounds (133 N). The door shall swing to a full-open position when subjected to a force of not more than 50 pounds (222 N). Forces shall be applied to the latch side.

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides correlation with the IBC. The modification clarifies the intent of the text

Assembly Action:

None

Final Hearing Results

F234-13

AM

Code Change No: F235-13

Original Proposal

Section(s): 1104.22

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

1104.22 Minimum aisle width. The minimum clear width of *aisles* shall be:

1. Forty-two inches (1067 mm) for stepped aisles ~~aisle stairs~~ having seating on each side.

Exception: Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.

2. Thirty-six inches (914 mm) for stepped *aisles* having seating on only one side.

Exceptions:

1. Thirty inches (760 mm) for catchment areas serving not more than 60 seats.
2. Twenty-three inches (584 mm) between a stepped aisle handrail and seating where an aisle does not serve more than five rows on one side.

3. Twenty inches (508 mm) between a stepped *aisle* handrail or guard and seating when the *aisle* is subdivided by the *handrail*.

4. Forty-two inches (1067 mm) for level or ramped *aisles* having seating on both sides.

Exception: Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.

5. Thirty-six inches (914 mm) for level or ramped *aisles* having seating on only one side.

Exception: Thirty inches (760 mm) for catchment areas serving not more than 60 seats.

- ~~6. Twenty-three inches (584 mm) between a stepped stair handrail and seating where an aisle does not serve more than five rows on one side.~~

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

The language for aisles has been revised in IFC/IBC Section 1028.9.1 to relocate Item 6 to Exception 2 under Item 2 by E143-09/10. This section should be coordinated. The current section is inconsistent when using the term "stepped aisle" and "aisle stair". E86-12 has changed the term to "stepped aisles" throughout the IBC. Below is the revised IBC text for clarity..

1028.9.1 Minimum aisle width. The minimum clear width for *aisles* shall be as shown:

1. Forty-eight inches (1219 mm) for *stepped aisles* having seating on each side.

Exception: Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.

2. Thirty-six inches (914 mm) for *aisle stairs* having seating on only one side.

Exception: Twenty-three inches (584 mm) between an *aisle stair handrail* and seating where an *aisle* does not serve more than five rows on one side

3. Twenty-three inches (584 mm) between an *aisle stair handrail* or *guard* and seating where the aisle is subdivided by a handrail.
4. Forty-two inches (1067 mm) for level or ramped *aisles* having seating on both sides.

Exceptions:

1. Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.
 2. Thirty inches (762 mm) where the *aisle* does not serve more than 14 seats.
5. Thirty-six inches (914 mm) for level or ramped *aisles* having seating on only one side.

Exception: Thirty inches (762 mm) where the *aisle* does not serve more than 14 seats.

Cost Impact: This change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

1104.22 Minimum aisle width. The minimum clear width of *aisles* shall be:

1. Forty-two inches (1067 mm) for ~~stepped aisles~~ *aisle stairs* having seating on each side.

Exception: Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.

2. Thirty-six inches (914 mm) for stepped *aisles* having seating on only one side.

Exceptions:

1. Thirty inches (760 mm) for catchment areas serving not more than 60 seats.
 2. Twenty-three inches (584 mm) between a stepped aisle *handrail* and seating where an *aisle* does not serve more than five rows on one side.
3. Twenty inches (508 mm) between a stepped *aisle* handrail or guard and seating when the *aisle* is subdivided by the *handrail*.
 4. Forty-two inches (1067 mm) for level or ramped *aisles* having seating on both sides.

Exception: Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.

5. Thirty-six inches (914 mm) for level or ramped *aisles* having seating on only one side.

Exception: Thirty inches (760 mm) for catchment areas serving not more than 60 seats.

Committee Reason: The committee agreed with the proponent that the code change and the modification provide correlation with the IBC.

Assembly Action:

None

Final Hearing Results

F235-13

AM

Code Change No: F236-13

Original Proposal

Section(s): 1105 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Add new text as follows:

SECTION 1105 INCIDENTAL USES IN EXISTING GROUP I-2

1105.1 General. Incidental uses associated with and located within existing single occupancy or mixed occupancy Group I-2 buildings and that generally pose a greater level of risk to such occupancies shall comply with the provisions of Sections 1105.2 through 1105.4.2.1. Incidental uses in Group I-2 occupancies are limited to those listed in Table 1105.1.

1105.2 Occupancy classification. Incidental uses shall not be individually classified in accordance with Section 302.1 of the *International Building Code*. Incidental uses shall be included in the building occupancies within which they are located.

1105.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located.

1105.4 Separation and protection. The incidental uses listed in Table 1105.1 shall be separated from the remainder of the building or equipped with an *automatic sprinkler system*, or both, in accordance with the provisions of that table.

1105.4.1 Separation. Where Table 1105.1 specifies a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the *building* in accordance with Section 509.4.1 of the *International Building Code*.

1105.4.2 Protection. Where Table 1105.1 permits an *automatic sprinkler system* without a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke in accordance with Section 509.4.2 of the *International Building Code*.

1105.4.2.1 Protection limitation. Except as otherwise specified in Table 1105.1 for certain incidental uses, where an *automatic sprinkler system* is provided in accordance with Table 1105.1, only the space occupied by the incidental use need be equipped with such a system.

**TABLE 1105.1
INCIDENTAL USES IN EXISTING GROUP I-2 OCCUPANCIES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
<u>Furnace room where any piece of equipment is over 400,000 Btu per hour input.</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Rooms with boilers where the largest piece of</u>	<u>1 hour or provide automatic sprinkler system</u>

<u>ROOM OR AREA</u>	<u>SEPARATION AND/OR PROTECTION</u>
<u>equipment is over 15 psi and 10 horsepower</u>	
<u>Refrigerant machinery room</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Hydrogen cutoff rooms, not classified as Group H</u>	<u>2 hours</u>
<u>Incinerator rooms</u>	<u>2 hours and provide automatic sprinkler system</u>
<u>Paint shops not classified as Group H</u>	<u>2 hours; or 1 hour and provide automatic sprinkler system</u>
<u>Laboratories and vocational shops, not classified as Group H</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Laundry rooms over 100 square feet</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Patient rooms equipped with padded surfaces</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Physical plant maintenance shops.</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Waste and linen collection rooms with containers with total volume of 10 cubic feet or greater.</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Storage rooms greater than 100 square feet</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies</u>	<u>2 hours</u>

For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

(Renumber subsequent sections)

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public. In 2012, three of the 25 face-to-face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

The provisions of this code change are being proposed for the IFC to establish requirements for the protection of incidental use areas in existing Group I-2 occupancies. Incidental use area provisions are applicable to new construction in Section 509 of the IBC, however similar provisions are needed for existing Group I-2 occupancies since the hazards posed by such rooms or spaces are no different for existing buildings than for new. Proposed Section and Table 1105.1 are very similar to and based upon IBC Section and Table 509, except that references to occupancies other than Group I-2 are not included. The basic requirements proposed for incidental uses in existing healthcare occupancies rely upon the provisions of the IBC for the specifics of construction and protection. Proposed Sections 1105.2 through 1105.4.2.1 are based on IBC Sections 509.2 through 509.4.2.1, editorially corrected for the IFC and for correlation. These proposed provisions will provide correlation with not only the IBC but also with the current operational and CMS program standards for existing Group I-2 occupancies. A section-by-section summary follows:

1105.1: This proposed section establishes the scope of Section 1105 and its applicability to Group I-2 occupancies. Incidental uses are rooms or areas that constitute special hazards or risks to life safety that are not typically addressed by the provisions for the occupancy group in which they occur even though such rooms or areas may functionally be an extension of the primary use. Only those rooms or areas indicated in Table 1105 are to be regulated as incidental uses. Incidental uses can be located within

both single-occupancy and mixed-occupancy buildings. The concern is that those areas designated as incidental uses pose a risk to the remainder of the building, and as such, some degree of protection is required. In general, the nature of these incidental uses is such that they are small areas that are not frequented by the building occupants very often in which a fire could get underway and go unnoticed for a longer time than in a part of the building that is constantly occupied.

1105.2: Consistent with the IBC, this proposed section expressly states that incidental uses are not considered as separate and distinct occupancy classifications but, rather, are classified the same as the occupancies in which they are located. As an example, a waste and linen collection room in a hospital would be classified as a portion of the Group I-2 occupancy even though it may present a level of hazard more akin to a Group S-1 occupancy if it were to be classified separately.

1105.3: The proposed floor area limitation of 10 percent for incidental uses emphasizes the ancillary nature of such rooms and areas and correlates with the IBC. Each incidental use would be limited to a maximum floor area of 10 percent of the floor area of the story in which it is located. Where there are two or more tenants located on the same story, the 10 percent limitation is based upon the floor area of each individual tenant space rather than that of the entire story. The application of the limit on a tenant-by-tenant basis is consistent with the concept of incidental uses typically being ancillary only to a portion of the building, i.e., the specific tenant occupancy.

1105.4: In addition to identifying those rooms or areas that warrant regulation as incidental uses, proposed Table 1105.1 will also indicate the required degree of protection or separation. The requirements identified in Table 1105.1 vary depending on the incidental use. In some cases, a specific type of separation and/or protection is required, while in others there is an option.

1105.4.1: Where a fire-resistance rated separation would be required, the incidental use would need to be separated from other portions of the building in accordance with assemblies complying with the IBC.

1105.4.2: In this proposed section, where Table 1105.1 would allow protection by an automatic sprinkler system without a fire-resistance-rated separation, the construction enclosing the incidental use would still need to resist the passage of smoke. Construction details for resisting the passage of smoke are provided in the IBC.

1105.4.2.1: This proposed section makes it clear that the sprinkler systems stipulated in Table 1105 would be required for the incidental use area only.

TABLE 1105.1: Proposed Table 1105.1 identifies the incidental uses and the required separation or other protection that would need to be provided in all Group I-2 occupancies.

Information note: IBC Table 509 was revised by approved Group A code change G130-12, also submitted by the AHC, which is reproduced here below for reference purposes only:

**G130 – 12
Table 509**

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Revise as follows:

**TABLE 509
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input.	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen cutoff rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops; not classified as Group H, located in Group E or I-2 occupancy	1 hour or provide automatic sprinkler system
<u>In Group I-2 occupancies, laboratories not classified as Group H</u>	<u>1 hour and provide automatic sprinkler system</u>
<u>In ambulatory care facilities, laboratories not classified as Group H</u>	<u>1 hour or provide automatic sprinkler system</u>
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
<u>In Group I-2, laundry rooms over 100 square feet</u>	<u>1 hour</u>
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
<u>In Group I-2, physical plant maintenance shops.</u>	<u>1 hour</u>
<u>In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms located in either Group I-2 occupancies or ambulatory care facilities with containers that have an aggregate volume of 10 cubic feet or greater</u>	1 hour

ROOM OR AREA	SEPARATION AND/OR PROTECTION
<u>In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet</u>	1 hour or provide automatic sprinkler system
<u>In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet</u>	1 hour
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptible power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.

For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Currently, more detail is needed in the Incidental Use table to add spaces currently being maintained in healthcare and ambulatory care occupancies. The above chart makes the noted tables consistent with current operational and programmatic standards in the Group I-2 occupancy.

The current version of the table does not address the occasion when materials in a laboratory increases, most notably in the aggregate of larger histology / cytology laboratories. Materials such as xylene, hydrochloric acid, ethanol and fixatives (among others) are present in these areas. Although they are stored in gallon and liter quantities, and not bulk storage, the quantities add up over the larger lab control areas when they are in use at the benches.

The distinction between smaller stat labs, largely found in ambulatory care facilities, and larger clinical labs, found in hospitals, is being proposed. Ambulatory care facilities has been added to the current laboratory category to address those support spaces such as stat labs that are set up for a specific time-sensitive purpose, such as blood draw and chemotherapy, to save time in the Group B occupancy setting. Larger scale or non-critical lab operations are typically sent out to proprietary labs from ambulatory facilities. When addressing labs crossing the threshold into one hour rated construction, these labs are typically constructed as stand-alone operations and commonly appear in Group B occupancies, and are subject to the current occupancy separation requirements.

Volume thresholds are being considered in waste and linen collection rooms because basic exam spaces contain some level of waste containers and linen hampers without rising to the level of storage. The 10 cubic foot threshold represents essentially two medium sized linen hampers and/or trash receptacles. Larger linen and waste receptacle containers, and not the smaller containers typically found in an exam room or patient sleeping room, are subject to volume rather than square footage of the room because a relatively small space, with the 10 cubic foot threshold crossed in a space well below, for example, 100 square feet.

Group I-2 is also being added to the requirement for one hour rating with rooms equipped with padded surfaces. The instance of these rooms existing in a hospital is rare. It is prudent, however, to add the requirement where there is the occasion that such rooms are used in areas such as emergency departments, inpatient psychiatric units, or similar areas.

Physical plant and maintenance shops are a very specific function in a hospital building, and are being added to the table to ensure protection due to the stored materials related to the physical plant operation.

Addition of storage rooms as an area requiring 1 hour rated protection is a key functional aspect of a Group I-2 healthcare building. Areas that become unused become storage areas very quickly. Specifically calling out storage areas helps define and control the storage of combustibles, and avoid creating random storage in otherwise unmonitored or unprotected areas.

Areas addressed in the past, but are no longer included in the table, are addressed in the International Fire Code (IFC). For example, storage of combustible gases is addressed in IFC Section 5306.2 and has specific references to the Group I-2 occupancy. Gift shops, formerly listed as an incidental area requiring protection, have largely been eliminated from these requirements in the I-Codes and other model codes, and are addressed in the context of being open to the corridor. In consideration of ambulatory care facilities, where not otherwise specifically called out, categories that are required for both Group B and I occupancies are assumed to cover Group I-2 and ambulatory care facilities. Examples of this interpretation are hydrogen cut-off rooms and stationary battery storage.

Cost Impact: None

Cost Impact: The code change proposal should not increase the cost of construction because compliance with similar requirements is already required by facility licensure requirements.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change reflects an important and needed coordination effort to correlate the IFC with the IBC and Federal CMS healthcare regulations with which all facilities must now comply and that it will eliminate costly conflicting requirements among different codes applicable to such facilities.

Assembly Action:

None

Final Hearing Results

F236-12

AS

Code Change No: **F237-13**

Original Proposal

Section(s): 1105 (New), 1105.1 (New), 1105.7 (New), 1105.8 (New); Table 1103.1; 1103.5.2, 1103.7.3

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Add new text as follows:

SECTION 1105 CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

IFC 1105.1 General. Existing Group I-2 shall meet the following requirements:

1. The minimum fire safety requirements in Section 1103, and
2. The minimum mean of egress requirements in Section 1104, and
3. The additional egress and construction requirements in Sections 1105.

Where the provisions of this chapter conflict with the construction requirements that applied at the time of construction, the most restrictive provision shall apply.

1105.7 Group I-2 automatic sprinkler system. An automatic sprinkler system installed in accordance with Section 903.3.1 shall be provided throughout existing Group I-2 fire areas. The sprinkler system shall be provided throughout the floor where the Group I-2 occupancy is located, and in all floors between the Group I-2 occupancy and the level of exit discharge.

1105.8 Group I-2 automatic fire alarm system. An automatic fire alarm system shall be installed in existing Group I-2 occupancies in accordance with Section 907.2.6.2.

Exception: Manual fire alarm boxes in patient sleeping areas shall not be required at exits if located at all nurses' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.5.2.1 are not exceeded.

Revise as follows:

**TABLE 1103.1
OCCUPANCY AND USE REQUIREMENTS^a**

Section	Use			Occupancy Classification																		
	High rise	Atrium or covered mall	Underground building	A	B	E	F	H-1	H-2	H-3	H-4	H-5	I-1	I-2	I-3	I-4	M	R-1	R-2	R-3	R-4	S
1104	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
1105	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-

(Portions of table not shown remain unchanged)

R = The building is required to comply.

- a. Existing buildings shall comply with the sections identified as "Required" (R) based on occupancy classification or use, or both, whichever is applicable.

1103.5.2 Group I-2. ~~An automatic sprinkler system shall be provided throughout existing Group I-2 fire areas. The sprinkler system shall be provided throughout the floor where the Group I-2 occupancy is located, and in all floors between the Group I-2 occupancy and the level of exit discharge. In Group I-2, an automatic sprinkler system shall be provided in accordance with Section 1105.7.~~

1103.7.3 Group I-2. ~~An automatic fire alarm system shall be installed in existing Group I-2 occupancies in accordance with Section 907.2.6.2. In Group I-2, an automatic fire alarm system shall be installed in accordance with Section 1105.8.~~

Exception: ~~Manual fire alarm boxes in resident or patient sleeping areas shall not be required at exits if located at all nurses' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.5.2.1 are not exceeded.~~

Reason: This change adds minimum requirements for existing Group I-2 into Chapter 11. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities – it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. This code change will align the Fire Code with those CMS minimum requirements and will hopefully lead to industry consolidation. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will provide jurisdictions the ability to adopt minimum retroactive provisions that have been vetted by the industry as well as code officials and that are consistent with current national standards used by the Federal Government providing a more uniform level of safety and eliminating many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

The intent of this proposal is to create a new Section 1105, to have a section for Group I-2 specific and unique requirements. Section 1105.1 General, provides a general scoping for this section. Areas in the hospital and nursing homes not in patient care areas will use the general provisions in Section 1103 and 1104. Where there are more restrictive provisions for hospitals or nursing homes, they will be listed in Section 1105.

Current provisions that were relocated to this section (1105.7 – automatic sprinkler system; 1105.8 – automatic fire alarm system) will remain applicable to all Group I-2. Section 1105.7, sprinkler requirements is relocated from 1103.5.2. Section 1105.8, automatic fire alarm system is relocated from 1103.7.3.

There is a package of proposal that are intended to be incorporated into this section. Below is how a new Section 1105 will look if all the proposals are accepted.

**IFC SECTION 1105
CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2**

IFC 1105.1 General. Existing Group I-2 shall meet the following requirements:

1. The minimum fire safety requirements in Section 1103, and
2. The minimum mean of egress requirements in Section 1104, and
3. The additional egress and construction requirements in Sections 1105.

Where the provisions of this chapter conflict with the construction requirements that applied at the time of construction, the most restrictive provision shall apply.

1105.2 Construction. Group I-2 Condition 2 shall not be located on a floor level higher than the floor level limitation in Table 1105.2 based on the type of construction.

**Table 1105.2
FLOOR LEVEL LIMITATIONS FOR GROUP I-2 Condition 2**

Construction Type	Automatic Sprinkler System	Allowable Floor Level ^a			
		1	2	3	4 or more
IA	Note b	P	P	P	P

Construction Type	Automatic Sprinkler System	Allowable Floor Level ^a			
		1	2	3	4 or more
	Note c	P	P	P	P
IB	Note b	P	P	P	P
	Note c	P	P	P	P
IIA	Note b	P	P	P	NP
	Note c	P	NP	NP	NP
IIB	Note b	P	P	NP	NP
	Note c	NP	NP	NP	NP
IIIA	Note b	P	P	NP	NP
	Note c	P	NP	NP	NP
IIIB	Note b	P	NP	NP	NP
	Note c	NP	NP	NP	NP
IV	Note b	P	P	NP	NP
	Note c	NP	NP	NP	NP
VA	Note b	P	P	NP	NP
	Note c	NP	NP	NP	NP
VB	Note b	P	NP	NP	NP
	Note c	NP	NP	NP	NP

P = Permitted; NP = Not Permitted

- Floors level shall be counted based on the number of stories above grade.
- The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
- The building is equipped with an automatic sprinkler system in accordance with Section 1105.7.

1105.3 Corridor construction. In Group I-2, in areas housing patient sleeping or care rooms, corridor walls and the opening protectives therein shall provide a barrier designed to resist the passage of smoke in accordance with Sections 1105.3.1 through 1105.3.7.

1105.3.1 Materials. The walls shall be of materials permitted by the building type of construction.

1105.3.2 Fire-resistance rating. Unless required elsewhere in the code, corridor walls are not required to have a fire-resistance rating.

1105.3.3 Corridor Walls Continuity. Corridor walls shall extend from the top of the foundation or floor below to one of the following:

- The underside of the floor or roof sheathing, deck or slab above.
- The underside of a ceiling above where the ceiling membrane is constructed to limit the passage of smoke.
- The underside of a lay-in ceiling system where the ceiling tiles weigh at least one pound per square foot of tile.

1105.3.4 Openings in corridor walls. Openings in corridor walls shall provide protection in accordance with 1105.3.4.1 through 1105.3.4.3.

1105.3.4.1 Windows. Windows in corridor walls shall be sealed to limit the passage of smoke, or the window shall be automatic closing upon detection of smoke, or the window opening shall be protected by an automatic closing device that closes upon detection of smoke.

Exception: In smoke compartments not containing patient sleeping rooms, pass-through windows or similar openings shall be permitted in accordance with Section 1105.3.4.3.

1105.3.4.2 Doors. Doors in corridor walls shall comply with Sections 1105.3.4.2.1 through 1105.3.4.2.3.

1105.3.4.2.1 Louvers. Doors in corridor walls shall not include louvers, transfer grills or similar openings.

Exception: Doors shall be permitted to have louvers, transfer grills or similar openings at toilet rooms or bathrooms; storage rooms that do not contain storage of flammable or combustible material; and storage rooms that are not required to be separated as incidental uses.

1105.3.4.2.2 Corridor doors. Doors in corridor walls shall limit the transfer of smoke by complying with the following:

1. Doors shall be constructed of not less than 1-3/4 inch (44 mm) thick solid bonded core wood or capable of resisting fire for a minimum of 1/3 hours.

Exception: Corridor doors in buildings equipped throughout with an automatic sprinkler system.

2. Frames for side hinged swinging doors shall have stops on the sides and top to limit transfer of smoke.
3. Where provided, vision panels in doors shall be a fixed glass window assembly installed to limit the passage of smoke. Existing wired glass panels with steel frames shall be permitted to remain in place.
4. Doors undercuts shall not exceed 1 inch (25 mm).
5. Doors shall be positive latching with devices that resist not less than 5 pounds (22.2 N). Roller latches are prohibited.
6. Mail slots or similar openings shall be permitted in accordance with Section 1105.3.4.3.

1105.3.4.2.3 Dutch doors. Where provided, dutch doors shall comply with Section 1105.3.4.2.2. In addition, dutch doors shall be equipped with latching devices on either the top or bottom leaf to allow leaves to latch together. The space between the leaves shall be protected with devices such as astragals to limit the passage of smoke.

1105.3.4.2.4 Self- or automatic-closing doors. Where self- or automatic-closing doors are required, closers shall be maintained in operational condition.

1105.3.4.3 Openings in corridor walls and doors. Mail slots, pass through windows or similar openings shall not be required to be protected where the aggregate area of the openings between the corridor and a room are not greater than 80 square inches (51 613 mm²) and are located with the top edge of any opening no higher than 48 inches above the floor.

1105.3.5 Penetrations. The space around penetrating items shall be filled with an *approved* material to limit the passage of smoke.

1105.3.6 Joints. Joints shall be filled with an *approved* material to limit the passage of smoke.

1105.3.7 Ducts and air transfer openings. The space around a duct penetrating a smoke partition shall be filled with an *approved* material to limit the passage of smoke. Air transfer openings in smoke partitions shall be provided with a *smoke damper* complying with Section 717.3.2.2 of the International Building Code.

Exception: Where the installation of a *smoke damper* will interfere with the operation of a required smoke control system in accordance with Section 909, *approved* alternative protection shall be utilized.

1105.4 Means of egress. In addition to the means of egress requirements in Section 1104, Group I-2 facilities shall meet the means of egress requirements in Section 1105.4.1 through 1105.4.7.

1105.4.1 Exit signs and emergency illumination. The power system for exit signs and emergency illumination for the means of egress shall provide power for not less than 90 minutes and consist of storage batteries, unit equipment or an on-site generator.

1105.4.2 Emergency power for operational needs. The essential electrical system shall be capable of supplying services in accordance with NFPA 99.

1105.4.3 Size of Door. Means of egress doors used for the movement of patients in beds shall provide a minimum clear width of 41.5 inches (1054 mm). The height of door opening shall not be less than 80 inches (2032 mm).

Exception: Door closers and door stops shall be permitted to be 78 inches minimum above the floor.

1105.4.4 Ramps. In areas where ramps are used for movement of patients in beds, the clear width of the ramp shall not be less than 48 inches (1219 mm).

1105.4.5 Corridor width. In areas where corridors are used for movement of patients in beds, the clear width of the corridor shall not be less than 48 inches (1219 mm).

1105.4.6 Dead end corridors. In smoke compartments containing patient sleeping rooms and treatment rooms, dead end corridors shall not exceed 30 feet unless approved by the fire official.

1105.4.7 Aisles. In areas where aisles are used for movement of patients in beds, the clear width of the aisle shall not be less than 48 inches (1219 mm).

1105.5 Smoke compartments. Smoke compartments shall be provided in existing Group I-2 Condition 2, in accordance with Sections 1105.5.1 through 1105.5.4.

1105.5.1 Design. Smoke barriers shall be provided to subdivide each story used for patients sleeping with an occupant load of more than 30 patients into no fewer than two smoke compartments.

1105.5.1.1 Refuge areas. Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments.

The size of the refuge area shall provide the following:

1. Not less than 30 net square feet (2.8 m²) for each care recipient confined to bed or stretcher.
2. Not less than 15 square feet (1.4 m²) for each resident in a Group I-2 using mobility assistance devices.
3. Not less than 6 square feet (0.56 m²) for each occupant not addressed in Items 1 and 2.

Areas of spaces permitted to be included in the calculation of the refuge area of corridors, sleeping areas, treatment rooms, lounge or dining areas and other low-hazard areas.

1105.5.2 Smoke barriers. Smoke barriers shall be constructed in accordance with Section 709 of the *International Building Code*.

Exceptions:

1. Existing smoke barriers with a minimum of 1/2 –hour fire-resistance rating are permitted to remain.
2. Smoke barriers shall be permitted to terminate at an atrium enclosure in accordance with Section 404.6 of the *International Building Code*.

1105.5.3 Opening protectives. Openings in smoke barriers shall be protected in accordance with Section 716 of the *International Building Code*. Opening protectives shall have a with a minimum fire-protection-rating of 1/3 hours.

Exception: Wired glass vision panels in doors shall be permitted to remain.

1105.5.4 Duct and air transfer openings. Penetrations in a smoke barrier by duct and air transfer openings shall comply with Section 717 of the *International Building Code*.

Exception: Where existing duct and air transfer openings in smoke barriers exist without smoke dampers, they shall be permitted to remain. Any changes to existing smoke dampers shall be submitted for review and approved in accordance with IBC Section 717 of the *International Building Code*.

1105.6 Group I-2 care suites. Care suites in existing Group I-2 Condition 2 occupancies shall comply with Section 407.4.3 through 407.4.3.6.2 of the *International Building Code*.

1105.7 Group I-2 automatic sprinkler system. An *automatic sprinkler system* installed in accordance with Section 903.3.1 shall be provided throughout existing Group I-2 *fire areas*. The sprinkler system shall be provided throughout the floor where the Group I-2 occupancy is located, and in all floors between the Group I-2 occupancy and the *level of exit discharge*.

1105.8 Group I-2 automatic fire alarm system. An automatic fire alarm system shall be installed in existing Group I-2 occupancies in accordance with Section 907.2.6.2.

Exception: Manual fire alarm boxes in patient sleeping areas shall not be required at *exits* if located at all nurses' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.5.2.1 are not exceeded.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change reflects an important and needed coordination effort to correlate the IFC with the IBC and Federal Center for Medicaid and Medicare Services (CMS) healthcare regulations with which all facilities must now comply and that it will eliminate costly conflicting requirements among different codes applicable to such facilities.

Assembly Action:

None

Final Hearing Results

F237-12

AS

Code Change No: **F238-13**

Original Proposal

Section(s): 1105.2 (New), Table 1105.2 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Add new text as follows:

SECTION 1105 CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

1105.2 Construction. Group I-2 Condition 2 shall not be located on a floor level higher than the floor level limitation in Table 1105.2 based on the type of construction.

Table 1105.2
FLOOR LEVEL LIMITATIONS FOR GROUP I-2 Condition 2

<u>Construction Type</u>	<u>Automatic Sprinkler System</u>	<u>Allowable Floor Level^a</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4 or more</u>
<u>IA</u>	<u>Note b</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>
	<u>Note c</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>
<u>IB</u>	<u>Note b</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>
	<u>Note c</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>
<u>IIA</u>	<u>Note b</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>NP</u>
	<u>Note c</u>	<u>P</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
<u>IIB</u>	<u>Note b</u>	<u>P</u>	<u>P</u>	<u>NP</u>	<u>NP</u>
	<u>Note c</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
<u>IIIA</u>	<u>Note b</u>	<u>P</u>	<u>P</u>	<u>NP</u>	<u>NP</u>
	<u>Note c</u>	<u>P</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
<u>IIIB</u>	<u>Note b</u>	<u>P</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
	<u>Note c</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
<u>IV</u>	<u>Note b</u>	<u>P</u>	<u>P</u>	<u>NP</u>	<u>NP</u>
	<u>Note c</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
<u>VA</u>	<u>Note b</u>	<u>P</u>	<u>P</u>	<u>NP</u>	<u>NP</u>
	<u>Note c</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
<u>VB</u>	<u>Note b</u>	<u>P</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
	<u>Note c</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>

P = Permitted; NP = Not Permitted

a. Floors level shall be counted based on the number of stories above grade.

b. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

c. The building is equipped with an automatic sprinkler system in accordance with Section 1105.7.

Reason: This change adds minimum requirements for existing hospitals (Group I-2, Condition 2) into Chapter 11. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These

requirements are meant to be applied retroactively. This is not a new concept for these facilities – it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. This code change will align the Fire Code with those CMS minimum requirements and will hopefully lead to industry consolidation. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will provide jurisdictions the ability to adopt minimum retroactive provisions that have been vetted by the industry as well as code officials and that are consistent with current national standards used by the Federal Government providing a more uniform level of safety and eliminating many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

These provisions are written specifically for hospitals (Group I-2, Condition 2). These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities. These inspections are required by federal laws for certification and reimbursement. This requirement considers the minimum previously approved construction methods. This is consistent with the federal requirements that these facilities are currently held too.

The revision to Section 1105.2 is proposed this retroactive limitation requirement for the allowable height based upon construction type because it is a key component of the regulatory approval for a health care facility, and so that surveying and licensing requirements can be documented and provided for in the IFC. Without these limitations provided for in the IFC, to which the healthcare industry is required to comply and support, the implementation and use of the IFC as a compliance document could not be possible. While most if not all existing hospitals were constructed to comply with these minimum construction requirements, many were constructed using methods that pre-dated the current construction type matrix, and were comprised of an “assembly” (i.e. minimum thickness concrete slab with a metal lath and plaster ceiling below) which provided the necessary fire rating. This section will allow all hospitals to be evaluated on an ongoing basis to verify the system/assembly used to obtain the required fire rating will be maintained or replaced with an equivalent system/assembly.

The existing allowance for the occupancies as stipulated in the proposed table, are less than that for new construction and do not increase the cost of construction and operations beyond what is currently mandated for healthcare facilities.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change reflects an important and needed coordination effort to correlate the IFC with Federal Center for Medicaid and Medicare Services (CMS) healthcare regulations with which all facilities must now comply and that it will eliminate costly conflicting requirements among different codes applicable to such facilities. The committee did express concern that the table could be problematic for existing 5 story Type IIA construction hospitals and also noted that the use of the term “floor level” rather than “story” in the table could cause confusion.

Assembly Action:

None

Final Hearing Results

F238-12

AS

Code Change No: **F239-13**

Original Proposal

Section(s): 1105.3 (New); 202 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Add new text as follows:

IFC SECTION 1105 **CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2**

1105.3 Corridor construction. In Group I-2, in areas housing patient sleeping or care rooms, corridor walls and the opening protectives therein shall provide a barrier designed to resist the passage of smoke in accordance with Sections 1105.3.1 through 1105.3.7.

1105.3.1 Materials. The walls shall be of materials permitted by the building type of construction.

1105.3.2 Fire-resistance rating. Unless required elsewhere in the code, corridor walls are not required to have a fire-resistance rating.

1105.3.3 Corridor Walls Continuity. Corridor walls shall extend from the top of the foundation or floor below to one of the following:

1. The underside of the floor or roof sheathing, deck or slab above.
2. The underside of a ceiling above where the ceiling membrane is constructed to limit the passage of smoke.
3. The underside of a lay-in ceiling system where the ceiling tiles weigh at least one pound per square foot of tile.

1105.3.4 Openings in corridor walls. Openings in corridor walls shall provide protection in accordance with 1105.3.4.1 through 1105.3.4.3.

1105.3.4.1 Windows. Windows in corridor walls shall be sealed to limit the passage of smoke, or the window shall be automatic closing upon detection of smoke, or the window opening shall be protected by an automatic closing device that closes upon detection of smoke.

Exception: In smoke compartments not containing patient sleeping rooms, pass-through windows or similar openings shall be permitted in accordance with Section 1105.3.4.3.

1105.3.4.2 Doors. Doors in corridor walls shall comply with Sections 1105.3.4.2.1 through 1105.3.4.2.3.

1105.3.4.2.1 Louvers. Doors in corridor walls shall not include louvers, transfer grills or similar openings.
Exception: Doors shall be permitted to have louvers, transfer grills or similar openings at toilet rooms or bathrooms; storage rooms that do not contain storage of flammable or combustible material; and storage rooms that are not required to be separated as incidental uses.

1105.3.4.2.2 Corridor doors. Doors in corridor walls shall limit the transfer of smoke by complying with the following:

1. Doors shall be constructed of not less than 1-3/4 inch (44 mm) thick solid bonded core wood or capable of resisting fire for a minimum of 1/3 hours.
Exception: Corridor doors in buildings equipped throughout with an automatic sprinkler system.
2. Frames for side hinged swinging doors shall have stops on the sides and top to limit transfer of smoke.
3. Where provided, vision panels in doors shall be a fixed glass window assembly installed to limit the passage of smoke. Existing wired glass panels with steel frames shall be permitted to remain in place.
4. Doors undercuts shall not exceed 1 inch (25 mm).
5. Doors shall be positive latching with devices that resist not less than 5 pounds (22.2 N). Roller latches are prohibited.
6. Mail slots or similar openings shall be permitted in accordance with Section 1105.3.4.3.

1105.3.4.2.3 Dutch doors. Where provided, dutch doors shall comply with Section 1105.3.4.2.2. In addition, dutch doors shall be equipped with latching devices on either the top or bottom leaf to allow leaves to latch together. The space between the leaves shall be protected with devices such as astragals to limit the passage of smoke.

1105.3.4.2.4 Self- or automatic-closing doors. Where self- or automatic-closing doors are required, closers shall be maintained in operational condition.

1105.3.4.3 Openings in corridor walls and doors. Mail slots, pass through windows or similar openings shall not be required to be protected where the aggregate area of the openings between the corridor and a room are not greater than 80 square inches (51 613 mm²) and are located with the top edge of any opening no higher than 48 inches above the floor.

1105.3.5 Penetrations. The space around penetrating items shall be filled with an *approved* material to limit the passage of smoke.

1105.3.6 Joints. Joints shall be filled with an *approved* material to limit the passage of smoke.

1105.3.7 Ducts and air transfer openings. The space around a duct penetrating a smoke partition shall be filled with an *approved* material to limit the passage of smoke. Air transfer openings in smoke partitions shall be provided with a *smoke damper* complying with Section 717.3.2.2 of the International Building Code.

Exception: Where the installation of a *smoke damper* will interfere with the operation of a required smoke control system in accordance with Section 909, *approved* alternative protection shall be utilized.

1104.17 Corridors construction. Corridors serving an occupant load greater than 30 and the openings therein shall provide an effective barrier to resist the movement of smoke. Transoms, louvers, doors and other openings shall be kept closed or be self closing. In Group I-2, corridors in areas housing patient sleeping or care rooms shall comply with Section 1105.3.

Exceptions:

1. Corridors in occupancies other than in Group H and I-2, which are equipped throughout with an approved automatic sprinkler system.
2. ~~Patient room doors in corridors in occupancies in Group I-2 where smoke barriers are provided in accordance with the International Building Code.~~
3. Corridors in occupancies in Group E where each room utilized for instruction or assembly has at least one-half of the required means of egress doors opening directly to the exterior of the building at ground level.

43. Corridors that are in accordance with the *International Building Code*.

SECTION 202 **GENERAL DEFINITIONS**

DUTCH DOOR. A door divided horizontally so that the top can be operated independently from the bottom.

Reason: This change adds minimum requirements for existing Group I-2 into Chapter 11 by adding specific retrofit requirements. This change will move the existing retrofit requirements for corridors in I-2 occupancies to proposed new section 1105.3 and add more detailed specific requirements. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities as it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will provide jurisdictions the ability to adopt minimum retroactive provisions that provide a more uniform level of safety and eliminate many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

These provisions are written specifically for hospitals (Group I-2, Condition 2). These are retrofit requirements that provide a minimum level of safety considered necessary for patients, staff and first responders in an environment in which patients are in many instances not capable of self preservation and must be protected in place. The changes also provide tradeoffs for automatic sprinkler systems consistent with those allowed for new construction and also with those allowed by CMS. In no way does this affect the existing requirement that existing, approved construction must be maintained in the manner that it was approved. It simply provides a tool for evaluating historical construction techniques.

Specific points include:

- Existing corridor construction should primarily be evaluated for its ability to resist or limit the transfer of smoke, regardless of the code at the time of construction. Corridor walls, even if they were built 60 years ago, should be regularly assessed confirm that they minimize the transfer of smoke. This section describes some criteria by which this can be assessed.
- The requirements clearly indicate that portions of corridor walls required to have a fire resistance ratings by other code provisions must meet those provisions. This addresses where a corridor wall also happens to be a smoke barrier, incidental use area separation, etc.
- The Ad Hoc Committee added a specific section on dutch doors. Dutch doors have been used in health care facilities for many years for various necessary operational reasons. While existing language in the IBC does not specifically speak of dutch doors, their use is not prohibited but if used must meet the requirements contained in Section 407.3 including positive latching and limiting the transfer of smoke. This change will provide clarity for existing installations by giving specific guidance on the minimum acceptable requirements including positive latching and smoke transfer for their use in corridor walls. A definition is provided for additional clarity.
- The Ad Hoc committee also proposes similar detail for doors, windows, louvers and other potential penetrations or openings in corridor walls in an attempt to add clarity to the intent of the code on limiting the transfer of smoke. These proposals are consistent with current CMS standards.
- There are exceptions that deal with existing mail slot, pass-through and similar openings that are commonly found in hospitals. These are needed for privacy, medication security and other operational needs. Our proposal places restrictions on these existing openings similar to the current federal requirements.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change reflects an important and needed coordination effort to correlate the IFC with Federal Center for Medicaid and Medicare Services (CMS) healthcare regulations with which all facilities must now comply and that it will eliminate costly conflicting requirements among different codes applicable to such facilities.

Assembly Action:

None

Public Comments

Public Comment 2:

William E. Koffel, P.E., Koffel Associates, Inc., representing Firestop Contractors International Association (FCIA), requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

1105.3.3 Corridor Walls Continuity. Corridor walls shall extend from the top of the foundation or floor below to one of the following:

1. The underside of the floor or roof sheathing, deck or slab above.
2. The underside of a ceiling above where the ceiling membrane is constructed to limit the passage of smoke.
3. The underside of a lay-in ceiling system where the ceiling system is constructed to limit the passage of smoke and where the ceiling tiles weigh at least one pound per square foot of tile.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: The intent is that the ceiling system, either the ceiling membrane (Item 2) or the lay-in ceiling system (Item 3), is required to limit the passage of smoke. The proposed revision merely clarifies that some type of open ceiling tile that happens to weigh one pound per square foot is not acceptable. Likewise, a ceiling system with openings serving a plenum would not be acceptable, even if the ceiling tiles weighed one pound per square foot.

Public Comment 4:

William E. Koffel, P.E., Koffel Associates, Inc., representing Firestop Contractors International Association (FCIA), requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

1105.3.4.3 Openings in corridor walls and doors. In other than smoke compartments containing patient sleeping rooms, mail slots, pass through windows or similar openings shall not be required to be protected where the aggregate area of the openings between the corridor and a room are not greater than 80 square inches (51 613 mm) and are located with the top edge of any opening no higher than 48 inches above the floor.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: A similar provision existing in NFPA 101, *Life Safety Code*, and is based upon computer calculations of smoke flow through an opening. The calculations assumed a fire in a room adjacent to the corridor and the quantity of smoke that might flow into a corridor. The NFPA Life Safety Technical Committee on Health Care Occupancies did not consider the scenario where smoke may be in the corridor and the openings may allow the smoke to migrate into adjacent patient sleeping rooms. Using the "defend in place" philosophy, allowing such openings in a corridor wall could result in the need to evacuate or relocate more patients than anticipated and that relocation would be through a corridor in which there is considerable smoke. The smoke resistant separation between the corridor and the patient sleeping room should be maintained.

Final Hearing Results

F239-13

AMPC2, 4

Code Change No: F240-13

Original Proposal

Section(s): 1105.4 (New), 1104.5.1, 1104.7, 1104.15, 1104.17.2, Table 1104.17.2, 1104.22

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 1105 **CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2**

1105.4 Means of egress. In addition to the means of egress requirements in Section 1104, Group I-2 facilities shall meet the means of egress requirements in Section 1105.4.1 through 1105.4.7.

1105.4.1 Exit signs and emergency illumination. The power system for exit signs and emergency illumination for the means of egress shall provide power for not less than 90 minutes and consist of storage batteries, unit equipment or an on-site generator.

1105.4.2 Emergency power for operational needs. The essential electrical system shall be capable of supplying services in accordance with NFPA 99.

1105.4.3 Size of Door. Means of egress doors used for the movement of patients in beds shall provide a minimum clear width of 41.5 inches (1054 mm). The height of door opening shall not be less than 80 inches (2032 mm).

Exception: Door closers and door stops shall be permitted to be 78 inches minimum above the floor.

1105.4.4 Ramps. In areas where ramps are used for movement of patients in beds, the clear width of the ramp shall not be less than 48 inches (1219 mm).

1105.4.5 Corridor width. In areas where corridors are used for movement of patients in beds, the clear width of the corridor shall not be less than 48 inches (1219 mm).

1105.4.6 Dead end corridors. In smoke compartments containing patient sleeping rooms and treatment rooms, dead end corridors shall not exceed 30 feet unless approved by the fire official.

1105.4.7 Separation of exit access doors. Any patient sleeping room, or any suite that includes patient sleeping rooms, of more than 1,000 square feet shall have at least two exit access doors placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the patient sleeping room or suite to be served, measured in a straight line between exit access doors.

1105.4.8 Aisles. In areas where aisles are used for movement of patients in beds, the clear width of the aisle shall not be less than 48 inches (1219 mm).

1104.5.1 Emergency power duration and installation. In other than Group I-2, systems requiring the emergency power system shall provide power for not less than 60 minutes and consist of storage batteries, unit equipment or an on-site generator. In Group I-2, the emergency power essential electrical systems shall comply with Sections 1105.4.1 and 1105.4.2 ~~provide power for not less than 90 minutes~~

and consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 604.

1104.7 Size of doors. The minimum width of each door opening shall be sufficient for the occupant load thereof and shall provide a clear width of not less than 28 inches (711 mm). Where this section requires a minimum clear width of 28 inches (711 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 28 inches (711 mm). ~~The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal.~~ In Group I-2, doors serving as means of egress doors in an occupancy in Group I-2 and used for the movement of patients in beds shall comply with Section 1105.4.3. provide a clear width not less than 41.5 inches (1054 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. The height of doors openings shall not be less than 80 inches (2032 mm).

Exceptions:

1. The minimum and maximum width shall not apply to door openings that are not part of the required means of egress in occupancies in Groups R-2 and R-3.
2. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum width.
3. Width of door leaves in revolving doors that comply with Section 1008.1.4.1 shall not be limited.
4. Door openings within a dwelling unit shall not be less than 78 inches (1981 mm) in height.
5. Exterior door openings in dwelling units, other than the required exit door, shall not be less than 76 inches (1930 mm) in height.
6. Exit access doors serving a room not larger than 70 square feet (6.5 m²) shall be not less than 24 inches (610 mm) in door width.
7. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the door.

1104.15 Width of ramps. Existing Ramps are permitted to have a minimum width of 30 inches (762 mm) but not less than the width required for the number of occupants served as determined by Section 1005.1. In Group I-2, ramps serving as a means of egress and used for the movement of patients in beds shall comply with Section 1105.8.

~~1104.17.2~~ **1104.18 Dead ends end corridors.** Where more than one exit or exit access doorway is required, the exit access shall be arranged such that dead ends do not exceed the limits specified in Table 1104.17.2 18. In Group I-2, in smoke compartments containing patient sleeping rooms and treatment rooms, dead end corridors shall be comply with Section 1105.7.

Exception: A dead-end passageway or corridor shall not be limited in length where the length of the dead end passageway or corridor is less than 2.5 times the least width of the dead-end passageway or corridor.

**TABLE 1104.17.2 1104.18
COMMON PATH, DEAD-END AND TRAVEL DISTANCE LIMITS (by occupancy)**

OCCUPANCY	COMMON PATH LIMIT		DEAD-END LIMIT		TRAVEL DISTANCE LIMIT	
	Unsprinklered (feet)	Sprinklered (feet)	Unsprinklered (feet)	Sprinklered (feet)	Unsprinklered (feet)	Sprinklered (feet)
Group I-1	75	75	20	50	200	250
Group I-2 (Health care)	NR ^e	NR ^e	NR-Note f	NR-Note f	150	200 ^c
Group I-3 (Detention and correctional—Use Conditions II,	100	100	NR	NR	150 ^c	200 ^c

OCCUPANCY	COMMON PATH LIMIT		DEAD-END LIMIT		TRAVEL DISTANCE LIMIT	
	Unsprinklered (feet)	Sprinklered (feet)	Unsprinklered (feet)	Sprinklered (feet)	Unsprinklered (feet)	Sprinklered (feet)
III, IV, V)						
Group I-4 (Day Care Centers)	NR	NR	20	20	200	250

(Portions of table not shown remain unchanged)

NR = No requirements.

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

- a. 20 feet for common path serving 50 or more persons; 75 feet for common path serving less than 50 persons.
- b. See Section 1028.9.5 for dead-end aisles in Group A occupancies.
- c. This dimension is for the total travel distance, assuming incremental portions have fully utilized their allowable maximums. For travel distance within the room, and from the room exit access door to the exit, see the appropriate occupancy chapter.
- d. See the *International Building Code* for special requirements on spacing of doors in aircraft hangars.
- e. In Group I-2, separation of exit access doors within a Any patient sleeping room, or any suite that includes patient sleeping rooms, of more than 1,000 square feet shall have at least two exit access doors placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the patient sleeping room or suite to be served, measured in a straight line between exit access doors shall comply with Section 1105.4.7.
- f. In Group I-2, in smoke compartments containing patient sleeping rooms and treatment rooms, dead end corridors shall comply with Section 1105.4.6.
- g.f. Where a tenant space in Group B, S and U occupancies has an occupant load of not more than 30, the length of a common path of egress travel shall not be more than 100 feet.

1104.22 Minimum aisle width. The minimum clear width of aisles shall be:

1. Forty-two inches (1067 mm) for aisle stairs having seating on each side.

Exception: Thirty-six inches (914 mm) where the aisle serves less than 50 seats.

2. Thirty-six inches (914 mm) for stepped aisles having seating on only one side.

Exception: Thirty inches (760 mm) for catchment areas serving not more than 60 seats.

3. Twenty inches (508 mm) between a stepped aisle handrail or guard and seating when the aisle is subdivided by the handrail.
4. Forty-two inches (1067 mm) for level or ramped aisles having seating on both sides.

Exception: Thirty-six inches (914 mm) where the aisle serves less than 50 seats.

5. Thirty-six inches (914 mm) for level or ramped aisles having seating on only one side.

Exception: Thirty inches (760 mm) for catchment areas serving not more than 60 seats.

6. Twenty-three inches (584 mm) between a stepped stair handrail and seating where an aisle does not serve more than five rows on one side.

7. In Group I-2, where aisles are used for movement of patients in beds aisles shall comply with 1105.4.8.

Reason: This change adds minimum requirements for existing Group I-2 into Chapter 11. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities – it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. This code change will align the Fire Code with those CMS minimum requirements and will hopefully lead to industry consolidation. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will provide jurisdictions the ability to adopt minimum retroactive provisions that have been vetted by the industry as well as code officials and that are

consistent with current national standards used by the Federal Government providing a more uniform level of safety and eliminating many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities. These inspections are required by federal laws for certification and reimbursement, and is designed to assist those that are already tasked with performing those inspections. It is not the intention to add responsibility to the fire official to perform additional inspections. Rather, it is the intention to better define the minimum previously approved construction methods as it relates to the healthcare building type, and are consistent with the federal requirements that these facilities are currently held too.

This newly proposed section has been formatted to consolidate requirements, and is mostly just a move of existing fire code provisions. Since the current provisions are applicable to all Group I-2, this section is written addressing all Group I-2 where applicable. Means of egress in areas where there are movement of patients in stretchers or beds has been reordered to be consistent with IFC 1104. It is noted that many areas of nursing homes do not include movement of patients in beds.

The following is a synopsis of the provisions listed above that have been relocated from other sections:

- 1105.4 Means of egress - Means of egress in areas where there are movement of patients in beds. The order is consistent with IFC 1104.
- 1105.4.1 Exit signs and emergency illumination – existing facilities can continue to use battery packs for exits signs and emergency lighting
- 1105.4.2 Emergency power for operational needs – extending section 1104.5.1 by adding requirements from and references to NFPA 99. Similar to IFC 604.3, requires the facility to analyze the hazards in their particular region and prepare accordingly.
- 1105.4.3 Size of door – Existing language that has been transferred from IFC 1104.7; follows format of IBC 1008.1.1.
- 1105.4.4 Ramps – References from IFC 1104.15 to the healthcare specific requirements.
- 1105.4.5 Corridor width – Follows current federal guidance for existing buildings.
- 1105.4.6 Dead end corridors – References from IFC 1104.15 to the healthcare specific requirements.
- 1105.4.7 Separation of exit access doors – Moved a healthcare specific requirement from footnote e in Table 1014.7.2 into Section 1105.
- 1105.4.8 Aisles – Provides a reference from IFC 1104.22 to more specific healthcare requirements.

Finally, in no way does this change affect the current requirement that existing, approved construction must be maintained in the manner that it was approved. The fire code clearly states that existing, approved safety feature must be maintained to the code at the time of construction. Most hospitals have been around for many decades and have several vintages of construction. This change simply provides a tool for evaluating historical conditions.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

1105.4.3 Size of Door. Means of egress doors used for the movement of patients in beds shall provide a minimum clear width of 41.5 inches (1054 mm). The height of door opening shall not be less than 80 inches (2032 mm).

Exceptions:

1. Door closers and door stops shall be permitted to be 78 inches minimum above the floor.

2. In Group I-2 Condition 1, existing means of egress doors used for the movement of patients in beds that provide a minimum clear width of 32 inches shall be permitted to remain.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee agreed with the proponent that the code change reflects an important and needed coordination effort to correlate the IFC with Federal Center for Medicaid and Medicare Services (CMS) healthcare regulations with which all facilities must now comply and that it will eliminate costly conflicting requirements among different codes applicable to such facilities. The modification exempts existing nursing homes from the retroactive width requirement.

Assembly Action:

None

Final Hearing Results

F240-13

AM

Code Change No: F241-13

Original Proposal

Section(s): 1105.5 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Add new text as follows:

SECTION 1105 **CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2**

1105.5 Smoke compartments. Smoke compartments shall be provided in existing Group I-2 Condition 2, in accordance with Sections 1105.5.1 through 1105.5.4.

1105.5.1 Design. Smoke barriers shall be provided to subdivide each story used for patients sleeping with an occupant load of more than 30 patients into no fewer than two smoke compartments.

1105.5.1.1 Refuge areas. Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments.

The size of the refuge area shall provide the following:

1. Not less than 30 net square feet (2.8 m²) for each care recipient confined to bed or stretcher.
2. Not less than 15 square feet (1.4 m²) for each resident in a Group I-2 using mobility assistance devices.
3. Not less than 6 square feet (0.56 m²) for each occupant not addressed in Items 1 and 2.

Areas of spaces permitted to be included in the calculation of the refuge area of corridors, sleeping areas, treatment rooms, lounge or dining areas and other low-hazard areas.

1105.5.2 Smoke barriers. Smoke barriers shall be constructed in accordance with Section 709 of the *International Building Code*.

Exceptions:

1. Existing smoke barriers with a minimum of 1/2 –hour fire-resistance rating are permitted to remain.
2. Smoke barriers shall be permitted to terminate at an atrium enclosure in accordance with Section 404.6 of the *International Building Code*.

1105.5.3 Opening protectives. Openings in smoke barriers shall be protected in accordance with Section 716 of the *International Building Code*. Opening protectives shall have a with a minimum fire-protection-rating of 1/3 hours.

Exception: Wired glass vision panels in doors shall be permitted to remain.

1105.5.4 Duct and air transfer openings. Penetrations in a smoke barrier by duct and air transfer openings shall comply with Section 717 of the *International Building Code*.

Exception: Where existing duct and air transfer openings in smoke barriers exist without smoke dampers, they shall be permitted to remain. Any changes to existing smoke dampers shall be submitted for review and approved in accordance with IBC Section 717 of the *International Building Code*.

Reason: This change adds minimum requirements for existing hospitals (Group I-2, Condition 2) into Chapter 11. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities – it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. This code change will align the Fire Code with those CMS minimum requirements and will hopefully lead to industry consolidation. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will provide jurisdictions the ability to adopt minimum retroactive provisions that have been vetted by the industry as well as code officials and that are consistent with current national standards used by the Federal Government providing a more uniform level of safety and eliminating many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

This provision is written in regard to the design, construction and application of smoke compartments for Group I-2 hospital facilities. Smoke compartments are a key component of the defend in place strategy, a strategy where victims are protected from fire without relocation, used in healthcare facilities to limit the movement of smoke. These compartments act as safe locations for patients by preventing the spread of smoke. Through compartmentalization, patients may remain safely in their rooms as fire suppression systems and fire responders extinguish the fire. Under severe fire conditions that threaten the immediate compartment area, patients may be evacuated horizontally to the safety of an adjacent compartment on the same floor. Being able to do this is critical since due to the health status of many patients their evacuation from the building might put them in grave danger. The proper design, construction and application of smoke compartments will provide added protection, buy valuable time and save lives of critically ill patients before a total evacuation may become necessary.

These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities. These inspections are required by federal laws for certification and reimbursement. This requirement considers the minimum previously approved construction methods. This is consistent with the federal requirements that these facilities are currently held too. Specific concepts include:

- 1105.5 Smoke compartments – The defend-in-place concept is a basic minimum level of safety for these facilities. Every facility should be equipped at least two smoke compartments for temporary relocation of patients.
- 1105.5.1 Design - This section addresses existing acceptable configuration of smoke barrier walls and smoke barriers for existing hospitals in areas with sleeping rooms.
- 1105.5.1.1 Refuge area – Addresses adequate sizing of refuge areas. IBC 407.5.1 also includes requirements for independent egress and horizontal assemblies.
- 1105.5.2 Smoke barriers – The intent is to bring noncompliant smoke barriers to at least ½ hour fire resistance rating. Previously approved smoke barriers are not intended to be reduced to ½. Chapter 7 of the IFC would require maintenance of approved construction.
- 1105.5.3 Opening protectives - Address doors in smoke barriers in existing Group I-2 occupancies. Reference to 716 is so you that don't lose other requirements.
- 1105.5.4, Guides the inspector of existing facilities on how they would look at opening protectives. Smoke dampers have not always been required in hospitals, and the 2015 IBC would not require them. Therefore, in those hospitals that were originally approved without smoke dampers required, that condition is allowed to remain in place. Any modification of existing smoke dampers would have to go through the normal process for making an alteration to existing construction.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the *American Society for Healthcare Engineering*, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

1105.5.2 Smoke barriers. Smoke barriers shall be constructed in accordance with Section 709 of the *International Building Code*.

Exceptions:

1. Existing smoke barriers ~~with a minimum of 1/2-hour fire-resistance-rating~~ are permitted to remain where the existing smoke barrier has a minimum fire resistance rating of 1/2 hour.
2. Smoke barriers shall be permitted to terminate at an atrium enclosure in accordance with Section 404.6 of the *International Building Code*.

1105.5.3 Opening protective. Openings in smoke barriers shall be protected in accordance with Section 716 of the *International Building Code*. Opening protective shall have ~~a~~ with a minimum fire-protection-rating of 1/3 hours.

Exception: Existing wired glass vision panels in doors shall be permitted to remain.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee agreed with the proponent that the code change reflects an important and needed coordination effort to correlate the IFC with Federal Center for Medicaid and Medicare Services (CMS) healthcare regulations with which all facilities must now comply and that it will eliminate costly conflicting requirements among different codes applicable to such facilities. The modification clarifies the applicability of the exception.

Assembly Action:

None

Public Comments

Public Comment 2:

William E. Koffel, P.E., Koffel Associates, Inc., representing Firestop Contractors International Association (FCIA), requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

1105.5.4 Penetrations. Penetrations of smoke barriers shall comply with the *International Building Code*.

Exception: Approved existing materials and methods of construction.

1105.5.5 Joints. Joints made in or between smoke barriers shall comply with *International Building Code*.

Exception: Approved existing materials and methods of construction.

(Renumber subsequent sections)

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: The proposed new section for existing smoke barriers does not address penetrations and joints. Especially as compared to some of the other new sections, the lack of requirements could imply that there are no requirements. Note that F239 (corridors) contains sections on penetrations and joints.

The proposed language indicates that penetrations and joints are to be protected as required by the IBC. However, recognizing that existing penetrations and joints may be protected using materials or construction methods that were acceptable at the time of construction but not permitted by the current edition of the IBC, the proposed language exempts existing approved materials and methods of construction. However, it should be noted that new penetration in an existing smoke barrier would need to be protected as required by the IBC

Final Hearing Results

F241-13

AMPC2

Code Change No: F242-13

Original Proposal

Section(s): 1105.6 (New), Table 1104.17.2

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Revise as follows:

IFC SECTION 1105 CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

1105.6 Group I-2 care suites. Care suites in existing Group I-2 Condition 2 occupancies shall comply with Section 407.4.3 through 407.4.3.6.2 of the *International Building Code*.

TABLE 1104.17.2 1104.18
COMMON PATH, DEAD-END AND TRAVEL DISTANCE LIMITS (by occupancy)

OCCUPANCY	COMMON PATH LIMIT		DEAD-END LIMIT		TRAVEL DISTANCE LIMIT	
	Unsprinklered (feet)	Sprinklered (feet)	Unsprinklered (feet)	Sprinklered (feet)	Unsprinklered (feet)	Sprinklered (feet)
Group I-1	75	75	20	50	200	250
Group I-2 (Health care)	NR ^a Note e	NR ^a Note e	NR	NR	150	200 ^c
Group I-3 (Detention and correctional—Use Conditions II, III, IV, V)	100	100	NR	NR	150 ^c	200 ^c
Group I-4 (Day Care Centers)	NR	NR	20	20	200	250

(Portions of table not shown remain unchanged)

NR = No requirements.

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

- a. 20 feet for common path serving 50 or more persons; 75 feet for common path serving less than 50 persons.
- b. See Section 1028.9.5 for dead-end aisles in Group A occupancies.
- c. This dimension is for the total travel distance, assuming incremental portions have fully utilized their allowable maximums. For travel distance within the room, and from the room exit access door to the exit, see the appropriate occupancy chapter.
- d. See the *International Building Code* for special requirements on spacing of doors in aircraft hangars.
- e. ~~In Group I-2 Condition 2, Any patient care recipient sleeping room, or any suite that includes patient sleeping rooms, of more than 1,000 square feet shall have at least two exit access doors placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the patient sleeping room or suite to be served, measured in a straight line between exit access doors shall comply with Section 1105.6.~~
- f. Where a tenant space in Group B, S and U occupancies has an occupant load of not more than 30, the length of a common path of egress travel shall not be more than 100 feet.

Reason: This change adds minimum requirements for existing hospitals (Group I-2, Condition 2) into Chapter 11. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities – it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. This code change will align the Fire Code with those CMS minimum requirements and will hopefully lead to industry consolidation. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will

provide jurisdictions the ability to adopt minimum retroactive provisions that have been vetted by the industry as well as code officials and that are consistent with current national standards used by the Federal Government providing a more uniform level of safety and eliminating many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

This proposal defines the requirements for care suites (both sleeping and non-sleeping) which are an integral design concept for many areas within a hospital. Typical uses include ICU's, Operating Rooms, Emergency Departments and Imaging Departments. The suites allow for better and safer care than non-suite options. The new provisions deal with common path of travel, separation of exit access doors, and number of doors passed through (i.e. previously intervening rooms) in suites. This is much more complete than the current text.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

- e. In Group I-2 Condition 2, care recipient sleeping room, or any suite that includes ~~patient~~ care recipient sleeping rooms shall comply with Section 1105.6.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee agreed with the proponent that the code change reflects an important and needed coordination effort to correlate the IFC with Federal Center for Medicaid and Medicare Services (CMS) healthcare regulations with which all facilities must now comply and that it will eliminate costly conflicting requirements among different codes applicable to such facilities. The modification corrects the term to current terminology.

Assembly Action:

None

Final Hearing Results

F242-13

AM

Code Change No: F243-13

Original Proposal

Section(s): 1105.9 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Section 1105.9 Essential electrical systems. Essential electrical systems in Group I-2 Condition 2 occupancies shall be in accordance with Sections 1105.9.1 and 1105.9.2.

1105.9.1 Where required. In Group I-2 Condition 2 occupancies where life support is being provided, an essential electrical system shall be provided in accordance with NFPA 99.

1105.9.2 Installation and duration. In Group I-2, Condition 2 Occupancies, the installation and duration of operation of existing essential electrical systems shall be based upon a hazard vulnerability analysis conducted in accordance with NFPA 99.

Reason: This proposal addresses CMS Ktag K146 for existing buildings. The proposal does two things. First, it requires that existing I-2 Condition 2 occupancies provide essential electrical systems where life support is being provided. Second it requires in Group I-2 Condition 2 occupancies that the existing installations and duration of operation of the essential electrical system be assessed based upon a hazard vulnerability analysis in accordance with NFPA 99.

Both of these elements are important. New Section 1105.9.1 requires any buildings that would not be addressed by CMS but have similar risks to provide the necessary power resources. The other requires a reassessment of the essential electrical systems based upon a hazard vulnerability analysis to make sure that the systems meet the needs of the facilities for emergencies. A specific requirement was not provided for the IEBC with regard to ASCE 24 since the IEBC would require compliance with ASCE 24 anytime there are substantial improvements made to a building. The term Substantial improvement is a specifically defined term as follows as excerpted from the IEBC.

SUBSTANTIAL IMPROVEMENT. For the purpose of determining compliance with the flood provisions of this code, any *repair, alteration, addition*, or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure, before the improvement or *repair* is started. If the structure has sustained *substantial damage*, any repairs are considered *substantial improvement* regardless of the actual *repair* work performed. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary, or safety code violations identified by the *code official* and that is the minimum necessary to ensure safe living conditions; or
2. Any *alteration* of a historic structure, provided that the *alteration* will not preclude the structure's continued designation as a historic structure.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F243-12

AS

Code Change No: **F244-13**

Original Proposal

Section(s): 2004.7 (New), Chapter 80

Proponent: Christopher M Wanka, College Park Volunteer Fire Department, representing self

Add new text as follows:

2004.7 Other Aircraft Maintenance. All maintenance, repairs, modifications, or construction performed upon aircraft not addressed elsewhere in this code shall be conducted in accordance with NFPA 410.

Add new standard to Chapter 80 as follows:

NFPA 410-10 Standard on Aircraft Maintenance.....2004.7

Reason: Aircraft maintenance is often a hazardous procedure due to the inherent hazards of aircraft. NFP 410 is a consensus document created that specifies minimum safety requirements to be performed during specified maintenance operations such as fuel or oxygen system maintenance, cleaning of aircraft, and hazardous operations such as defueling aircraft. It provides additional fire safety requirements to these procedures as well as additional fire protection requirements be in place for other specified procedures.

NFPA 410: Standard for Aircraft Maintenance would be a newly referenced standard in the IFC

Cost Impact: This will not affect any construction cost. It may impact business operation cost due to increased work times due to following additional safety precautions.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 410-10, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of NFPA 410-10 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F244-12

AS

Code Change No: F246-13

Original Proposal

Section(s): 2306.8.1, 2306.8.2 (New), Chapter 80

Proponent: Bob Eugene, representing UL LLC

Revise as follows:

2306.8 Alcohol-blended fuel-dispensing operations. The design, fabrication and installation of alcohol-blended fuel dispensing systems shall also be in accordance with Section 2306.7 and Sections 2306.8.1 through 2306.8.5.

2306.8.1 ~~Listed Approval of equipment.~~ Dispensers shall be listed in accordance with UL 87A. Hoses, nozzles, breakaway fittings, swivels, flexible connectors or dispenser emergency shutoff valves, vapor recovery systems, leak detection devices and pumps used in alcohol-blended fuel-dispensing systems shall be listed ~~or approved~~ for the specific purpose.

2306.8.2 Compatibility. Dispensers shall only be used with the fuels for which they have been listed, which are marked on the product. Field installed components including hose assemblies, breakaway couplings, swivel connectors and hose nozzle valves shall be provided in accordance with the listing and the marking on the unit.

(Renumber subsequent sections)

Add a new standard to Chapter 80 as follows:

UL

87A – 12 Outline of Investigation for Power-Operated Dispensing Devices for Gasoline and Gasoline/ethanol Blends with Nominal Ethanol Concentrations up to 85 Percent

Reason: In 2007 UL submitted proposal F230 07/08 which added the section on alcohol-blended fuel-dispensing operations. This was done to address the growing number of E-85 installations. Part of that proposal allowed alcohol-blended fuel-dispensers and components to be listed or approved, where normal gasoline dispensers were required to be listed. This was done in recognition that standards and listings for these dispensers did not exist at the time.

The UL 87A Outline of Investigation for Power-Operated Dispensing Devices for Gasoline and Gasoline/ethanol Blends with Nominal Ethanol Concentrations up to 85 Percent was subsequently developed to cover dispensers intended for use with high concentration ethanol blends. Listed dispensers and the related hanging hardware are now listed for high concentration ethanol blends, and are being installed across the U.S. This proposal recognizes the current E-85 dispensing practices and accomplishes the following:

1. Reintroduces the requirements for these dispensers and related hardware to be listed, rather than listed or approved.
2. Includes reference to the UL 87A Outline of Investigation used to investigate these products.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, UL 87A-12, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of UL87A-12 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed with the proponent's reason statement that the code change brings into the code an appropriate referenced standard for the listing of ethanol-blend dispensers.

Assembly Action: **None**

Final Hearing Results

F246-12 **AS**

Code Change No: F250-13

Original Proposal

Section(s): 2307.4 (IFGC [F] 412.6)

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswecicki@npga.org)

Revise as follows:

2307.4 (IFGC [F] 412.6) Location of dispensing operations and equipment. ~~In addition to the requirements of Section 2306.7, the point of transfer for LP-gas dispensing operations shall be 25 feet (7620 mm) or more from buildings having combustible exterior wall surfaces, buildings having noncombustible exterior wall surfaces that are not part of a 1-hour fire-resistance-rated assembly, or buildings having combustible overhangs, lot lines of property which could be built on, public streets, or sidewalks and railroads; and at least 10 feet (3048 mm) from driveways and buildings having noncombustible exterior wall surfaces that are part of a fire-resistance-rated assembly having a rating of 1 hour or more. The point of transfer for LP-Gas dispensing operations shall be separated from buildings and other exposures in accordance with the following:~~

1. Not less than 25 feet from buildings in which the exterior wall is not part of a fire-resistance-rated assembly having a rating of 1 hour or greater.
2. Not less than 25 feet from combustible overhangs on buildings, measured from a vertical line dropped from the face of the overhang at a point nearest the point of transfer.
3. Not less than 25 feet from the lot line of property that can be built upon.
4. Not less than 25 feet from mainline railroad track centers.
5. Not less than 10 feet from public streets, highways, thoroughfares, sidewalks and driveways.
6. Not less than 10 feet from buildings in which the exterior wall is part of a fire resistance rated assembly having a rating of 1 hour or greater.

Exception: The point of transfer for LP-gas dispensing operations need not be separated from canopies that are constructed in accordance with the *International Building Code* and that provide weather protection for the dispensing equipment. LP-gas containers shall be located in accordance with Chapter 61. LP-gas storage and dispensing equipment shall be located outdoors ~~and in accordance with Section 2306.7.~~

Reason: The changes to section 2307.4 are necessary in order to make the paragraph easier to understand and to eliminate reference to Section 2306.7, which addresses dispenser installations for gasoline and diesel fuels, neither of which are similar to LP-gas. Therefore, Section 2306.7 contains many requirements that do not make sense when applied to LP-gas installations. We are therefore proposing a new section (2307.5) that will contain just those requirements from 2306.7 that are applicable to LP-gas dispensers.

Also included in the new formatting are proposed changes that will bring the IFC into agreement with NFPA 58 "LP-Gas Code" with respect to separation distances.

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides a needed clarification and improved format of the requirements applicable to LPG equipment apart from the flammable liquid requirements and improves correlation with NFPA 58. The committee indicated that it felt that a simple reference to NFPA 58 would be sufficient.

Assembly Action:

None

Public Comments

Public Comment:

Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

2307.4 (IFGC [F] 412.6) Location of dispensing operations and equipment. The point of transfer for LP-Gas dispensing operations shall be separated from buildings and other exposures in accordance with the following:

1. Not less than 25 feet from buildings in which the exterior wall is not part of a fire-resistance-rated assembly having a rating of 1 hour or greater.
2. Not less than 25 feet from combustible overhangs on buildings, measured from a vertical line dropped from the face of the overhang at a point nearest the point of transfer.
3. Not less than 25 feet from the lot line of property that can be built upon.
4. Not less than 25 feet from ~~the centerline of the nearest~~ mainline railroad track ~~centers~~.
5. Not less than 10 feet from public streets, highways, thoroughfares, sidewalks and driveways.
6. Not less than 10 feet from buildings in which the exterior wall is part of a fire resistance rated assembly having a rating of 1 hour or greater.

Exception: The point of transfer for LP-gas dispensing operations need not be separated from canopies that are constructed in accordance with the *International Building Code* and that provide weather protection for the dispensing equipment.

LP-gas containers shall be located in accordance with Chapter 61. LP-gas storage and dispensing equipment shall be located outdoors.

Commenter's Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal will clarify the intent of where the measurement is taken to mainline railroad track centers and is consistent with Table 6.5.3 of NFPA 58.

Final Hearing Results

F250-13

AMPC

Code Change No: F251-13

Original Proposal

Section(s): 2307.5 (IFGC [F] 412.7.6) (New), 2307.6 (IFGC [F] 412.7), 2307.6.1 (IFGC [F] 412.7) (New), 2307.6.3 (IFGC [F] 412.7.4) (New)

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

2307.5 (IFGC [F] 412.7.6) Additional Requirements for LP-Gas Dispensers and Equipment. LP-gas dispensers and related equipment shall comply with the following provisions.

1. Pumps shall be fixed and shall be designed to allow control of the flow and to prevent leakage or accidental discharge.
2. Dispensing devices installed within 10 feet of where vehicle traffic occurs, shall be protected against physical damage by mounting on a concrete island 6 inches or more in height, or shall be protected in accordance with Section 312.
3. Dispensing devices shall be securely fastened to their mounting surface in accordance with the dispenser manufacturer's instructions.

2307.5-2307.6 (IFGC [F] 412.7) Installation of LP-gas dispensing devices and equipment. The installation and operation of LP-gas dispensing systems shall be in accordance with Sections 2307.5.4-2307.6.1 through 2307.5.3-2307.6.4 and Chapter 61. LP-gas dispensers and dispensing stations shall be installed in accordance with the manufacturer's specifications and their listing.

~~**2307.5.1 (IFGC [F] 412.7.1) Valves** A manual shutoff valve and an excess flow control check valve shall be located in the liquid line between the pump and the dispenser inlet where the dispensing device is installed at a remote location and is not part of a complete storage and dispensing unit mounted on a common base. An excess flow control check valve or an emergency shutoff valve shall be installed in or on the dispenser at the point at which the dispenser hose is connected to the liquid piping. A differential backpressure valve shall be considered equivalent protection. A listed shutoff valve shall be located at the discharge end of the transfer hose.~~

2307.6.1 (IFGC [F] 412.7) Product Control Valves. The dispenser system piping shall be protected from uncontrolled discharge in accordance with the following:

1. Where mounted on a concrete base, a means shall be provided and installed within ½-inch of the top of the concrete base that will prevent flow from the supply piping in the event that the dispenser is displaced from its mounting.
2. A manual shutoff valve and an excess flow-control check valve shall be located in the liquid line between the pump and the dispenser inlet where the dispensing device is installed at a remote location and is not part of a complete storage and dispensing unit mounted on a common base.
3. An excess flow-control check valve or an emergency shutoff valve shall be installed in or on the dispenser at the point at which the dispenser hose is connected to the liquid piping.
4. A listed automatic-closing type hose nozzle valve with or without a latch-open device shall be provided on island-type dispensers.

2307.5.2-2307.6.2 (IFGC [F] 412.7.2) Hoses. Hoses and piping for the dispensing of LP-gas shall be provided with hydrostatic relief valves. The hose length shall not exceed 18 feet (5486 mm). An *approved* method shall be provided to protect the hose against mechanical damage.

2307.6.3 (IFGC [F] 412.7.4) Breakaway Protection. Dispenser hoses shall be equipped with a listed emergency breakaway device designed to retain liquid on both sides of the breakaway point. Where hoses are attached to hose-retrieving mechanisms, the emergency breakaway device shall be located such that the breakaway device activates to protect the dispenser from being displaced.

2307.5.3 (IFGC [F] 412.7.3) 2307.6.4 (IFGC [F] 412.7.5) Vehicle impact protection. ~~Vehicle impact protection for LP-gas storage containers, pumps and dispensers shall be provided in accordance with Section 2306.4. Where installed within 10 feet of vehicle traffic, LP-gas storage containers, pumps and dispensers shall be protected in accordance with Section 2307.5 (2).~~

Reason: This proposal is a companion change to revisions proposed to Section 2307.4, which eliminated reference to Section 2306.7. Because Section 2306.7 addresses dispenser installations for gasoline and diesel fuels, neither of which are similar to LP-gas, it therefore contains many requirements that do not make sense when applied to LP-gas installations.

New 2307.5 contains three requirements extracted from current Section 2306.7 that would be applicable to LP-gas dispensers. Proposed #1 is based on current 2306.7.2 and proposed #2 and #3 are based on 2306.7.3.

New 2307.6 has been revised editorially to reflect the changed section numbers.

Paragraph 2307.6.1 has moved the requirements from 2306.7 that are applicable to LP-gas dispensers into the more appropriate location. Requirement #1 is based on current code section 2306.7.4 but since the hardware performance requirements in that section for gasoline and diesel dispensers differ from what is available for LP-gas dispenser systems, the text more closely resembles the requirements currently appearing in NFPA 30A *Motor Fuel Dispensing Facilities and Repair Garages*, with the exception that the inch location for the protective means must be within ½-inches of the top of the concrete, as required in 2306.7.4. Requirement #2 is based on NFPA 58 *LP-Gas Code* and provides protection for the piping system where the storage container is located remotely from the dispenser. Requirements #3 is based on requirements in NFPA 58. Requirement #4 is pulled from current section 2306.7.6.

New Section 2707.6.3 is based on current Section 2306.7.5.1, but provides a performance requirement rather than a specified protection point where a hose retrieval mechanism is installed.

Section 2307.6.4 specifies where protection from vehicle impact is required, which is consistent with what will appear in the 2014 edition of NFPA 58.

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides needed separation of the LPG requirements from the flammable liquid requirements and is consistent with the committee action on code change F250-13.

Assembly Action:

None

Final Hearing Results

F251-12

AS

Code Change No: **F252-13**

Original Proposal

Section(s): 2307.6 (IFGC [F] 412.8), 2307.7

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

2307.6 (IFGC [F] 412.8) Private Public fueling of motor vehicles. ~~Self-service LP-gas dispensing systems, including key, code and card lock dispensing systems, shall not be open to the public and shall be limited to the filling of permanently mounted fuel containers on LP-gas powered vehicles.~~ Self-service LP-Gas dispensing systems, including key, code and card lock dispensing systems, shall be limited to the filling of containers providing fuel to the LP-Gas powered vehicle.

~~In addition to the requirements of Sections 2305 and 2306.7,~~ The requirements for self-service LP-gas dispensing systems shall be in accordance with the following:

1. The arrangement and operation of the transfer of product into a vehicle shall be in accordance with this section and Chapter 61.
2. The system shall be provided with an emergency shutoff switch located within 100 feet (30 480 mm) of, but not less than 20 feet (6096 mm) from, dispensers.
23. The owner of the LP-gas motor fuel-dispensing facility or the owner's designee shall provide for the safe operation of the system and the training of users.
4. The dispenser and hose-end valve shall release not more than 4cc of liquid to the atmosphere upon breaking the connection with the fill valve on the vehicle.
5. Fire extinguishers shall be provided in accordance with Section 2305.4.
6. Warning signs shall be provided in accordance with Section 2305.6.
7. The area around the dispenser shall be maintained in accordance with Section 2305.7.

2307.7 Overfilling. LP-gas containers shall not be filled with LP-gas in excess of the volume determined using the fixed maximum liquid level gauge installed on the container, the volume determined by the overfilling prevention device installed on the container, or the weight determined by the required percentage of the water capacity marked on the container stamped on the tank.

Reason: Propane is recognized as an alternative motor vehicle fuel by the U.S. government. In order for the public to take full advantage of the benefits of its reduced emissions and cleaner burning properties, the code must be changed to recognize the technologies that are available to ensure the safe refueling of LP-gas vehicles, which in turn will result in increasing acceptance of this smart alternative fuel.

The current provisions in Section 2307.6, which prohibit public access to self-service equipment, are too restrictive and without any basis in safety or technical experience. There are no reasons to prohibit anyone who has been properly trained to perform the refueling operation from refueling their LP-gas vehicle at a public refueling facility. Propane (LP-Gas) refueling technology provides the following features:

- Liquid product will not flow out of the hose end valve unless the valve is completely connected and securely in place on the fill valve of the vehicle.
- Propane hose end valves will mate with the fill valve on the vehicle and upon disconnect will release no more than 4 cubic centimeters of liquid to the atmosphere.
- The propane refueling system is a closed system, which means that there is no opportunity for air, water or any other contaminant to enter the system.
- Individuals must be trained in order to use the filling equipment. This requirement is ensured by the use of key, code and card lock dispensing systems. Only trained individuals are issued the necessary security devices to enable the refueling of the vehicle.

Regarding the proposed changes to 2307.6, the deletion of references to Sections 2305 and 2306.7 are necessary because those sections are mostly intended to be used for the installation of Class I or Class II liquids. Since propane is a liquefied petroleum gas, many of the provisions in those sections are not applicable to propane installations. The applicable requirements from those two sections have been relocated to 2307.6. In addition, proposed requirement #4 is based on NFPA 30A *Motor Fuel Dispensing Facilities and Repair Garages*.

The proposed change to 2307.7 is necessary in order to incorporate the correct terminology and also recognize that sometimes, the fixed maximum liquid level gauge is installed by a trained service technician. This is especially the case if repairs are being made to the container or the valve. In addition, some vehicles rely upon an overfilling prevention device and the fixed maximum liquid level gauge is not used. Therefore, it is necessary to list that device as an approved means for filling the container.

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement and that the code change is consistent with the committee action on code changes F250-13 and F251-13. The committee expressed concern that there needs to be similar specific requirements for private fueling.

Assembly Action:

None

Public Comments

Public Comment:

Bruce Swiecicki, National Propane Gas Association, representing self, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

2307.6 (IFGC [F] 412.8) Public fueling of motor vehicles. Self-service LP-Gas dispensing systems, including key, code and card lock dispensing systems, shall be limited to the filling of permanently mounted containers providing fuel to the LP-Gas powered vehicle.

The requirements for self-service LP-gas dispensing systems shall be in accordance with the following:

1. The arrangement and operation of the transfer of product into a vehicle shall be in accordance with this section and Chapter 61.
2. The system shall be provided with an emergency shutoff switch located within 100 feet (30 480 mm) of, but not less than 20 feet (6096 mm) from, dispensers.
3. The *owner* of the LP-gas motor fuel-dispensing facility or the owner's designee shall provide for the safe operation of the system and the training of users.
4. The dispenser and hose-end valve shall release not more than 4cc of liquid to the atmosphere upon breaking the connection with the fill valve on the vehicle.
5. Fire extinguishers shall be provided in accordance with Section 2305.4.
6. Warning signs shall be provided in accordance with Section 2305.6.
7. The area around the dispenser shall be maintained in accordance with Section 2305.7.

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: Concerns were expressed at the Code Change Hearings in Dallas that containers other than those used to provide fuel to vehicles could be filled using the LP-Gas dispenser. Even though the concerns were unfounded (the filling connection for motor vehicles is unique and not able to connect to cylinders and other containers), the proposed change to 2307.6 will provide further clarification that only containers permanently mounted on the vehicle for providing fuel to that vehicle can be filled by this dispenser at this location.

Final Hearing Results

F252-13

AMPC

Code Change No: F254-13

Original Proposal

Section(s): 2309.3.1.1, 2309.3.1.2, Chapter 80

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

2309.3.1.1 Outdoors. Generation, compression, or storage equipment shall be allowed outdoors in accordance with Chapter 58 and NFPA 2.

2309.3.1.2 Indoors. Generation, compression, storage and dispensing equipment shall be located in indoor rooms or areas constructed in accordance with the requirements of the *International Building Code*, the *International Fuel Gas Code* and, the *International Mechanical Code* and ~~one of the following:~~ NFPA 2.

- ~~1. Inside a building in a hydrogen cutoff room designed and constructed in accordance with Section 421 of the *International Building Code*.~~
- ~~2. Inside a building not in a hydrogen cutoff room where the gaseous hydrogen system is listed and labeled for indoor installation and installed in accordance with the manufacturer's installation instructions.~~
- ~~3. Inside a building in a dedicated hydrogen fuel dispensing area having an aggregate hydrogen delivery capacity no greater than 12 standard cubic feet per minute (SCFM) and designed and constructed in accordance with Section 703.1 of the *International Fuel Gas Code*.~~

Add new standard to Chapter 80 as follows:

NFPA

2-11 Hydrogen Technologies Code 2309.3.1.1, 2309.3.1.2

Reason: This proposal adds a reference to NFPA 2 "Hydrogen Technologies Code" in Section 2309.3.1.1 and to Section 2309.3.1.2, along with a deletion of the three methods currently in the code.

NFPA 2 has been formed to provide a source document for the storage, use and handling of hydrogen and much work has gone into refining terms and requirements. For increased safety and consistency in the application of hydrogen technologies, the addition of NFPA 2 as a reference for outdoor installations of motor fueling and for the requirements for indoor fueling in conjunction with the other requirements contained within the relevant I-Codes is an appropriate step to take.

From the 2011 edition of NFPA 2:

Origin and Development of NFPA 2

"With the increased interest in hydrogen being used as a fuel source, the National Fire Protection Association was petitioned to develop an all-encompassing document that establishes the necessary requirements for hydrogen technologies. In 2006, the Technical Committee on Hydrogen Technology was formed and tasked to develop a document that addresses all aspects of hydrogen storage, use, and handling, that draws from existing NFPA codes and standards, and that identifies and fills technical gaps for a complete functional set of requirements for code users and enforcers. This document is also structured so that it works seamlessly with building and fire codes."

Extensive requirements have been developed and are located within NFPA 2 (see Sections 10.3.2.2 Indoor Public Fueling and 10.3.3.2 Indoor Nonpublic Fueling of that standard), and the practical method to utilize the extensive requirements is through adding references to that document. A review of the requirements identifies that trying to add the actual technical requirements to the IFC would require extensive work and then might not get around copyright issues.

As part of the proposal is to add NFPA 2 to Chapter 80 as a referenced standard.

NFPA 2-2011 can be viewed at this location: <http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=2>

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 2-11, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of NFPA 2-11 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides an appropriate introduction of a new NFPA standard into the code and improves correlation among codes on the subject.

Assembly Action:

None

Final Hearing Results

F254-12

AS

Code Change No: **F255-13**

Original Proposal

Section(s): 2309.4.1

Proponent: Robert Boyd, Boyd Hydrogen, LLC, representing self (Bob@BoydH2.com)

Revise as follows:

2309.4.1 Dispensing Systems. Dispensing systems shall be equipped with an overpressure protection device set at not greater than 140 percent of the service pressure of the fueling nozzle it supplies.

Reason: There is no technical or system safety reason why the overpressure protecting device in a H2 dispenser must be set at 140 percent of the service pressure of the fueling nozzle.

SAE and NFPA-52 and NFPA-2 requirements for the overpressure protection are that the device is to be **set at no greater** than 140 times the service pressure (1.1 x 1.25 x Service pressure).

Some dispenser manufactures may want to provide systems that have a lower set point for the overpressure protection device. For example some dispensers may want to set the maximum fill pressure to 110% of service pressure and set the overpressure device to 125% of service pressure. This would have no impact on the relative safety of the dispensing system and should be allowed.

The proposed revised language will allow for more dispenser options without any additional risks.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides a needed clarification of the appropriate maximum setting of the overpressure protection device.

Assembly Action:

None

Final Hearing Results

F255-12

AS

Code Change No: F256-13

Original Proposal

Section(s): 2309.6 (New), 2311.8

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

2311.8 2309.6 Defueling of hydrogen from ~~motor vehicle~~ fuel storage containers. The discharge or defueling of hydrogen from ~~motor vehicle~~ fuel storage tanks for the purpose of maintenance, cylinder certification, calibration of dispensers or other activities shall be in accordance with Sections ~~2311.8.1~~ 2309.6.1 through ~~2311.8.1.2.4~~ 2309.6.1.2.4.

2311.8.1 2309.6.1 Methods of discharge. The discharge of hydrogen from ~~motor vehicle~~ fuel storage tanks shall be accomplished through a closed transfer system in accordance with Section ~~2311.8.1.1~~ 2309.6.1.1 or an approved method of atmospheric venting in accordance with Section ~~2311.8.1.2~~ 2309.6.1.2.

2311.8.1.1 2309.6.1.1 Closed transfer system. *(No change to current text)*

2311.8.1.2 2309.6.1.2 Atmospheric venting of hydrogen from ~~motor vehicle~~ fuel storage containers. When atmospheric venting is used for the discharge of hydrogen from ~~motor vehicle~~ fuel storage tanks, such venting shall be in accordance with Sections ~~2311.8.1.2.1~~ 2309.6.1.2.1 through ~~2311.8.1.2.4~~ 2309.6.1.2.1.4.

2311.8.1.2.1 2309.6.1.2.1 Defueling equipment required at ~~vehicle maintenance and repair facilities~~. All facilities for repairing hydrogen systems on hydrogen-fueled vehicles shall have equipment to defuel ~~vehicle storage tanks~~. Equipment used for defueling shall be listed and labeled or approved for the intended use.

2311.8.1.2.1.1 2309.6.1.2.1.1 Manufacturer's equipment required. Equipment supplied by the ~~vehicle~~ manufacturer shall be used to connect the ~~vehicle~~ storage tanks to be defueled to the vent pipe system.

2311.8.1.2.1.2 2309.6.1.2.1.2 Vent pipe maximum diameter. *(No change to current text)*

2311.8.1.2.1.3 2309.6.1.2.1.3 Maximum flow rate. *(No change to current text)*

2311.8.1.2.1.4 2309.6.1.2.1.4 Isolated use. *(No change to current text)*

2311.8.1.2.2 2309.6.1.2.2 Construction documents. *(No change to current text)*

2311.8.1.2.3 2309.6.1.2.3 Stability of cylinders, containers and tanks. *(No change to current text)*

2311.8.1.2.4 2309.6.1.2.4 Grounding and bonding. *(No change to current text)*

2311.8.2 2309.6.2 Repair of hydrogen piping. Piping systems containing hydrogen shall not be opened to the atmosphere for repair without first purging the piping with an inert gas to achieve 1 percent hydrogen or less by volume. Defueling operations and exiting purge flow shall be vented in accordance with Section ~~2311.8.1.2~~ 2309.6.1.2.

~~2311.8.3~~ **2309.6.3 Purging.** (No change to current text)

~~2311.8.3.4~~ **2309.6.3.1 System purge required.** (No change to current text)

SECTION 2311 REPAIR GARAGES

2311.5 Preparation of vehicles for repair. For vehicles powered by gaseous fuels, the fuel shutoff valves shall be closed prior to repairing any portion of the vehicle fuel system.

Vehicles powered by gaseous fuels in which the fuel system has been damaged shall be inspected and evaluated for fuel system integrity prior to being brought into the repair garage. The inspection shall include testing of the entire fuel delivery system for leakage.

2311.8 Defueling equipment required at vehicle maintenance and repair facilities. Facilities for repairing hydrogen fuel systems on hydrogen-fueled vehicles shall have equipment to defuel vehicle storage tanks. Where work must be performed on a vehicle's fuel storage tank for the purpose of maintenance, repair or cylinder certification, defueling and purging shall be conducted in accordance with Section 2309.6 .

Reason: The primary reason for moving the language is to eliminate some confusion in applying the code. There are some in the industry and code enforcement world that mistakenly believe defueling is required every time a hydrogen fueled vehicle is repaired. That is not true, see Section 2311.5.

If you view Section 2308.8 for CNG fueling activities you will find similar language directly within the dedicated CNG section of the code, the same concept which is being proposed here for hydrogen with the movement of the language. An additional benefit is that the ability to defuel hydrogen is needed for repair and servicing of the fixed hydrogen fuel compression, storage and dispensing equipment located at these facilities.

By moving the language to new Section 2909.6 and modifying the language to apply to "fuel storage", instead of "motor vehicle fuel storage", the language is more generic and applicable.

At Section 2311.8.1.2.1, (New 2309.6.1.2.1), the stricken language is left at 2311.8 with a pointer to this location to direct motor vehicle fuel storage cylinder defueling operations to these requirements. In addition, the word "approved" is added for the acceptance of the equipment. as this is still an emerging technology and there needs to be an option for "approved" by the code official.

In Section 2311, New Section 2311.8 is inserted. By taking out the defueling language it eliminates some confusion and by pointing to the relocated the language at Section 2309.6 we make sure it is applied only in those cases where defueling of the motor vehicle fuel cylinder is necessary.

There is no loss in current code requirements. There is an enhancement by providing for the defueling of fixed site equipment and eliminating a misapplication of the defueling requirements.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides an expansion of the defueling requirements to all hydrogen tanks, not just motor vehicle tanks and provides clarification of the requirements. It would be useful if the provisions were clarified further to indicate where the defueled gas is stored (preferably outside the building) and how persons will be trained to defuel tanks.

Assembly Action:

None

Final Hearing Results

F256-12

AS

Code Change No: **F257-13**

Original Proposal

Section(s): 2310.5.3

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

2310.5.3 Rubbish containers. ~~Metal containers with tight-fitting or self-closing lids shall be provided for the temporary storage of combustible trash or rubbish. Containers with tight-fitting or self-closing lids shall be provided for temporary storage of combustible debris, rubbish and waste material.~~ The rubbish containers shall be constructed entirely of materials that comply with any one of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m² when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m² in the horizontal orientation.

Reason: Rubbish containers need not be constructed of metal but can be constructed of other noncombustible materials, including materials that have been shown to be safe by meeting a very severe fire test, just like those required by section 808 for I1, I2 and I3 occupancies. The key requirement that the lids be tight fitting or self closing is retained in the proposal. Note that the requirement covers all type of rubbish and is not intended to address spills of combustible or flammable liquids (or Class I, II or IIIA liquids), covered by 2310.5.2. The use of the phrase "combustible debris, rubbish and waste" makes this section consistent with other sections of the IFC.

Cost Impact: This should lower costs by offering more alternatives.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement and felt that the code change provides consumers with more options and recognizes the test standard already used for Group I occupancies in the code.

Assembly Action:

None

Final Hearing Results

F257-12

AS

Code Change No: F258-13

Original Proposal

Section(s): 2311.7

Proponent: Spencer Quong, Quong & Associates, Inc. representing Toyota Technical Center (squong@squong.com)

Revise as follows:

2311.7 Repair garages for vehicles fueled by lighter-than air fuels. Repair garages for the conversion and repair of vehicles which use CNG, liquefied natural gas (LNG), hydrogen or other lighter-than-air motor fuels shall be in accordance with Sections 2311.7 through 2311.7.2.3 in addition to the other requirements of Section 2311.

Exceptions:

1. Repair garages where work is not performed on the fuel system and is limited to exchange of parts and maintenance requiring no open flame or welding.
2. Repair garages where all of the following conditions exist:
 - 2.1 Work is not performed on the hydrogen storage tank and is limited to exchange of parts and maintenance requiring no open flame or welding.
 - 2.2 Where work is performed on the hydrogen fuel system, the hydrogen fuel storage container shall be securely sealed such that it is a closed system during maintenance using manufacturer approved procedures.
 - 2.3 The entire fuel system shall be defueled in accordance with Section 2311.8 to a quantity that is less than 200 cubic feet (5.6 m³).

Reason: This proposal is requesting to modify exception to Section 2311.7 to allow work on the fuel system, except for the hydrogen storage tank without having to install additional ventilation and gas detection systems in the repair garage. If work is performed on the fuel system, the vehicle's shutoff valve must be securely closed on the fuel storage container so that it is a closed system and no gas can escape during maintenance operations. In addition, the proposal also requires that entire vehicle fuel system, including the storage container, be defueled to less than 200 cubic feet (NTP).

Although each hydrogen passenger vehicle is different, typically their storage containers hold between 5000-50000 cubic feet (NTP) of hydrogen at high pressure (5000-10000 psi). However, the hydrogen leaving the storage container is regulated to a lower pressure, typically less than 250 psi and less than 10 cubic feet (NTP) of hydrogen.

Any release of hazardous material can pose a problem. However, this proposal addresses the issues in two ways. First, it requires that the shutoff valve on the fuel storage container to be securely closed. Hydrogen vehicles are required to have a manual valve that can be shut off for maintenance¹. In most vehicles, the shutoff valve fails shut, so the standard operating procedure to ensure that the valve is closed is to disconnect the 12V battery. For manual valves, it can be tagged and locked in the off position. Since almost all of the hydrogen is in the fuel storage container, this requirement will ensure only a minimal amount of hydrogen is left in the remainder of the fuel system.

Second, in the event that the fuel storage container is opened during repairs and all of the hydrogen is allowed to escape, this proposal requires that the entire fuel system be defueled to less than 200 cubic feet (NTP). **This is less than 20% of the Maximum Allowable Quantity (MAQ) per control area** listed in Table 5003.1.1(1) through 5003.1.1(4). In addition, Section 5308.1.1 allows for the indoor storage and use of cylinders of non-liquefied compressed, flammable gases not exceeding a capacity of 250 cubic feet NTP used for maintenance purposes without any ventilation and gas detection systems. Finally, according to Table 105.6.8, an operational permit is not required for less than 200 cubic feet (NTP) of flammable, compressed gases.

With more and more hydrogen vehicles on the road, there is a need to be able to work on the low pressure side of the fuel system at any repair garage without adding additional ventilation and gas detection systems. This proposal allows for this work as long as two requirements are met: the fuel storage container is closed and amount of hydrogen is less than **the existing IFC limitations for hazardous materials, and flammable and compressed gases**. Already, repair garages have industrial cylinders of acetylene and other flammable gases without additional ventilation and detection equipment. Even if the repair garages meet the requirements in this exception, they will still need to be in accordance with Sections 5001 and 5003.

¹ Section 4.1.1.3 of SAEJ2579 "Standard for Fuel Systems in Fuel Cell and Other Hydrogen Vehicles"

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The committee's disapproval was based on its agreement with testimony that indicated that NFPA 2 Hydrogen Code is being revised on this topic but that the exact wording is not yet known and could be in conflict with these provisions if they were to be approved. The committee suggested that Exception 2, Item 2.1 should be clarified to indicate if hot work would be allowed elsewhere in the repair garage. It was also suggested that the exceptions be rewritten as compliance alternatives rather than exceptions.

Assembly Action:

None

Public Comments

Public Comment:

Spencer Quong, Quong & Associates, Inc., representing Toyota Technical Center, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

2311.7 Repair garages for vehicles fueled by lighter-than air fuels. Repair garages for the conversion and repair of vehicles which use CNG, liquefied natural gas (LNG), hydrogen or other lighter-than-air motor fuels shall be in accordance with Sections 2311.7 through 2311.7.2.3 in addition to the other requirements of Section 2311.

Exceptions:

1. ~~Repair garages where work is not performed on the fuel system and is limited to exchange of parts and maintenance requiring no open flame or welding on the CNG, liquefied natural gas (LNG), hydrogen or other lighter-than-air motor fueled vehicle.~~
2. ~~Repair garages for hydrogen fueled vehicles where work is not performed on the hydrogen storage tank and is limited to the exchange of parts and maintenance requiring no open flame or welding on the hydrogen fueled vehicle. During the work the entire hydrogen fuel system shall contain a quantity that is less than 200 cubic feet (5.6 m³) of hydrogen.~~
~~Repair garages where all of the following conditions exist:~~
 - 2.1 ~~Work is not performed on the hydrogen storage tank and is limited to exchange of parts and maintenance requiring no open flame or welding.~~
 - 2.2 ~~Where work is performed on the hydrogen fuel system, the hydrogen fuel storage container shall be securely sealed such that it is a closed system during maintenance using manufacturer approved procedures.~~
 - 2.3 ~~The entire fuel system shall be defueled in accordance with Section 2311.8 to a quantity that is less than 200 cubic feet (5.6 m³).~~

Commenter's Reason: The modification to the exception has been condense the language. The 2.2 portion of the original submittal is already covered by Section 2311.5 of the IFC. As requested by the committee, the existing language has been clarified by identifying that no open flame or welding shall be performed on the vehicle containing the gaseous motor fuel.

The added exception for the hydrogen fueled vehicle repairs will be consistent with language currently under development by the NFPA 2 committee.

Final Hearing Results

F258-13

AMPC

Code Change No: F260-13

Original Proposal

Section(s): 2404.6.1.2.1

Proponent: Geoff Raifsnider, P.E., Global Finishing Solutions representing self (graifsnider@globalfinishing.com)

Revise as follows:

2404.6.1.2.1 Interlocks. The spraying apparatus, drying apparatus and ventilating system for the spray booth or spray room shall be equipped with interlocks arranged to:

1. Prevent operation of the spraying apparatus while drying operations are in progress.
2. Where the drying apparatus is located in the spray booth or spray room, prevent operation of the drying apparatus until a timed purge of spray vapors from the spray booth or spray room is complete. This purge time shall be based upon completing not less than 4 air changes of spray booth or spray room volume. ~~Purge spray vapors from the spray booth or spray room for a period of not less than 3 minutes before the drying apparatus is rendered operable.~~
3. Have the ventilating system maintain a safe atmosphere within the spray booth or spray room during the drying process and automatically shut off drying apparatus in the event of a failure of the ventilating system.
4. Shut off the drying apparatus automatically if the air temperature within the booth exceeds 200°F (93°C).

Reason: The current language does not state how the value is calculated. The proposed language clarifies how to calculate the purge time and bases it upon the amount of fresh air introduced in the same manner that is used for purging an oven. This is appropriate since the drying operation has turned the spray booth into an oven.

As mentioned this proposal is based upon the language in NFPA 86 Standard for Ovens and Furnaces 2011 Edition. The idea is to replace the air in the booth at least four times (4 ft³ of air/ft³ of booth) to ensure that the concentration at the end of the purge interval is less than 25% of the lower flammable limit.

The IFC (2406.1.2) currently requires compliance with Chapter 30 when utilizing drying in a spray booth. Section 3007.2 states that a nameplate shall be provided that, among other information, indicates the required purge time (2107.2(3)). The code official can initially verify that the purge timer is set to this value. If there is cause to doubt this information the calculations mentioned can be performed to verify the minimum purge time.

The purge interval is a function of the spray booth size (cubic feet) and the ventilation rate (cubic feet per minute). Both of these values are documented and measurable for a given spray booth.

To verify that the purge time is sufficient to meet the code, multiply the volume of the booth by four (4) and divide by the exhaust flow rate. An example would be a spray booth that measures 10 ft wide x 10 ft high x 14 ft long (volume = 1,400 ft³). If this booth was designed for 100 feet per minute downdraft the exhaust flow rate would be 14,000 ft³/min (10 ft x 14 ft x 100 fpm). To calculate the minimum purge time you would multiply 1400 ft³ by four (4) and divide by 14,000 ft³/min. The resulting minimum purge time would be 0.4 minutes (1400x4/14000=0.4).

For booths that elevate the air temperature for curing via the same supply air unit used for tempering the air for painting, there is no need for a post paint purge of spray vapors. One type of spray/cure booth elevates the incoming (outside) air temperature and does not recirculate. This type poses no risk of bringing spray vapors back around and through the heating source. The other type of spray/cure booth switches to a recirculation mode during cure. In this mode, the spray/cure booth functions just like an oven and since other sections of the code require the concentration in the exhaust air stream to be less than 25% of the LFL the concentration that could be seen at the burner is not flammable. However if the drying apparatus is in the spray area and could be directly exposed to spray vapors, it makes sense to purge that space prior to energizing the drying apparatus.

There are many paint finishing operations, typically in the automotive refinish industry, that are negatively affected by the delay between painting and curing at an elevated temperature. By allowing the proposed changes, the spray booth designer can take into account the importance the purge interval may have on the process. By designing for the correct air flow, both a safe environment for energizing the drying apparatus and a minimum time between spray and cure can be achieved.

Cost Impact: This code change proposal will not increase the cost of construction

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The disapproval was based on the committee's judgment that the ventilation duration needs clarification by being more specific and should include a minimum run-on time prior to shutting down operations.

Assembly Action:

None

Public Comments

Public Comment:

Geoffrey Raifsnider, Global Finishing Solutions, representing self, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

2404.6.1.2.1 Interlocks. The spraying apparatus, drying apparatus and ventilating system for the spray booth or spray room shall be equipped with interlocks arranged to:

1. Prevent operation of the spraying apparatus while drying operations are in progress.
2. Where the drying apparatus is located in the spray booth or spray room, prevent operation of the drying apparatus until a timed purge of spray vapors from the spray booth or spray room is complete. This purge time shall be based upon completing at least 4 air changes of spray booth or spray room volume or for a period of not less than 3 minutes, whichever is greater.
3. Have the ventilating system maintain a safe atmosphere within the spray booth or spray room during the drying process and automatically shut off drying apparatus in the event of a failure of the ventilating system.
4. Shut off the drying apparatus automatically if the air temperature within the booth exceeds 200°F (93°C).

Commenter's Reason: The current language does not state how the value is calculated. The proposed language clarifies how to calculate the purge time and bases it upon the amount of fresh air introduced in the same manner that is used for purging an oven. This is appropriate since the drying operation has turned the spray booth into an oven. **The 3 minute minimum from the original language has been added back into the proposal.**

As mentioned this proposal is based upon the language in NFPA 86 Standard for Ovens and Furnaces 2011 Edition. The idea is to replace the air in the booth at least four times (4 ft³ of air/ft³ of booth) to ensure that the concentration at the end of the purge interval is less than 25% of the lower flammable limit.

The IFC (2406.1.2) currently requires compliance with Chapter 30 when utilizing drying in a spray booth. Section 3007.2 states that a nameplate shall be provided that, among other information, indicates the required purge time (2107.2(3)). The code official can initially verify that the purge timer is set to this value. If there is cause to doubt this information the calculations mentioned can be performed to verify the minimum purge time.

The purge interval is a function of the spray booth size (cubic feet) and the ventilation rate (cubic feet per minute). Both of these values are documented and measurable for a given spray booth.

To verify that the purge time is sufficient to meet the code, multiply the volume of the booth by four (4) and divide by the exhaust flow rate. An example would be a spray booth that measures 10 ft wide x 10 ft high x 14 ft long (volume = 1,400 ft³). If this booth was designed for 100 feet per minute downdraft the exhaust flow rate would be 14,000 ft³/min (10 ft x 14 ft x 100 fpm). To calculate the minimum purge time you would multiply 1400 ft³ by four (4) and divide by 14,000 ft³/min. The resulting minimum purge time would be 0.4 minutes (1400x4/14000=0.4).

For booths that elevate the air temperature for curing via the same supply air unit used for tempering the air for painting, there is no need for a post paint purge of spray vapors. One type of spray/cure booth elevates the incoming (outside) air temperature and does not recirculate. This type poses no risk of bringing spray vapors back around and through the heating source. The other type of spray/cure booth switches to a recirculation mode during cure. In this mode, the spray/cure booth functions just like an oven and since other sections of the code require the concentration in the exhaust air stream to be less than 25% of the LFL the concentration that could be seen at the burner is not flammable. However if the drying apparatus is in the spray area and could be directly exposed to spray vapors, it makes sense to purge that space prior to energizing the drying apparatus.

There are many paint finishing operations, typically in the automotive refinish industry, that are negatively affected by the delay between painting and curing at an elevated temperature. By allowing the proposed changes, the spray booth designer can take into account the importance the purge interval may have on the process. By designing for the correct air flow, both a safe environment for energizing the drying apparatus and a minimum time between spray and cure can be achieved.

Final Hearing Results

F260-13

AMPC

Code Change No: F261-13

Original Proposal

Section(s): 2404.7.3 (IMC [F] 502.7.3.3)

Proponent: Geoff Raifsnider, P.E., Global Finishing Solutions representing self (graifsnider@globalfinishing.com)

Revise as follows:

2404.7.3 (IMC [F] 502.7.3.3) Air velocity. ~~Ventilation systems shall be designed, installed and maintained such that the average air velocity over the open face of the booth, or booth cross section in the direction of airflow during spraying operations, shall not be less than 100 feet per minute (0.51 m/s). Each spray area shall be provided with mechanical ventilation in accordance with Sections 2404.7.3.1 through 2404.7.3.3 (IMC 502.7.3.3.1 through 502.7.3.3.3).~~

2404.7.3.1 (IMC [F] 502.7.3.3.1) Open face or open front spray booth. ~~For spray application operations conducted in an open face or open front spray booth, the ventilation system shall be designed, installed and maintained such that the average air velocity into the spray booth through all openings shall be not less than 100 feet per minute (0.51 m/s).~~

Exception: ~~For fixed or automated electrostatic spray application equipment the average air velocity into the spray booth through all openings shall be not less than 50 feet per minute (0.25 m/s).~~

2404.7.3.2 (IMC [F] 502.7.3.3.2) Enclosed spray booth or spray room. ~~For spray application operations conducted in an enclosed spray booth or spray room, the ventilation system shall be designed, installed and maintained so that the flammable contaminants are diluted in noncontaminated air to maintain concentrations in the exhaust air flow below 25 percent of the contaminant's lower flammable limit (LFL).~~

2404.7.3.3 (IMC [F] 502.7.3.3.3) Enclosed spray booth or spray room with openings for product conveyance. ~~In addition to the requirements of 2404.7.3.2, the ventilation system shall be designed, installed and maintained so that the average air velocity into the spray booth through openings shall be not less than 100 feet per minute (0.51 m/s).~~

Exception: ~~Where methods are used to reduce cross drafts that can draw vapors and overspray through openings from the spray booth or spray room, the average air velocity into the spray booth or spray room shall be capable of capturing and confining vapors and overspray to the spray booth or spray room.~~

Reason: For spray application using flammable and combustible materials, the industry standards are OSHA 1910.107 and 1910.94, Chapter 24 of the International Fire Code (IFC), and NFPA 33.

With regards to ventilating spray booths and spray rooms, NFPA 33 and the IFC have similar language stating that the concentration of flammable materials in the exhaust system must be kept below 25 percent of the lower flammable limit (LFL).^{1,2} From this requirement alone the minimum ventilation rate of a spray booth or spray room could be calculated. And by dividing this ventilation rate by the cross sectional area of the booth in the direction of air flow a minimum average velocity can be calculated. OSHA requirements for average air velocity were based upon the 1969 edition of NFPA 33 and were intended to provide a measureable that could be used to check the effectiveness of maintaining the booth exhaust below 25% of the LFL.⁵ OSHA has recognized that the requirements for average air velocity were not intended for totally enclosed booths.⁶

Current language in the IFC specifies 100 feet per minute minimum air velocity and offers explanation in their commentary that the objective is containment within a designated spraying space and limiting the overspray.^{3,4} It goes on to explain that 100 FPM is the minimum capture velocity for particulate spray material. In an open face booth, it may be necessary to have a face velocity of 100 FPM or higher to provide the capture needed; but in an enclosed booth the enclosure provides the containment.

The following ventilation design basis for paint spray booths is common in the industry and has been effective in providing clean, safe and reliable painting environments which are in compliance with the intent of the International Fire Code, OSHA, and NFPA 33.

1. The total exhaust ventilation rate shall be based upon the minimum amount of air required to maintain the concentration of flammable vapors in the exhaust below 25%
2. Where appropriate the exhaust rate shall be increased by the amount of air needed to:
 - o maintain a minimum average velocity through all openings which prevent the escape of overspray from the spray booth
 - o achieve the desired collection of overspray toward the exhaust filters
 - o achieve the desired paint transfer efficiency

There are many types of booths and rooms in which the 100 fpm value would be detrimental to the quality of the product and based upon the amount of paint used is well in excess of the minimum dilution air needed to keep the exhaust below 25% of the LFL. This extra air also increases the operating costs. The air velocities for a specific spray booth or spray room should be specific to the individual design that accomplishes the desired performance (i.e. 25% LFL or containment of overspray at openings). Chapter 13.75 of Industrial Ventilation – A Manual of Recommended Practice 26th Edition Published by ACGIH, lists many recommended air velocity ranges for various painting operations, some above and some below 100 fpm. This publication could be referenced in the standard or commentary.

This proposal does not require additional knowledge or tools for the AHJ. The designer or owner of the spray booth or room can provide calculations showing the minimum ventilation rate based upon the type and amount of paint being sprayed. The ventilation rate can be converted into an average velocity in the spray area. The AHJ can ask for balancing information to confirm the installation meets the code requirements or can independently measure the design velocity in the same manner as currently used by the AHJ to confirm 100 FPM.

The following are the references indicated above:

1. Chapter 7.2, NFPA 33, Standard for Spray Application Using Flammable or Combustible Materials 2007 Edition
"Each spray area shall be provided with mechanical ventilation that is capable of confining and removing vapors and mists to a safe location and is capable of confining and controlling combustible residues, dusts, and deposits. The concentration of the vapors and mists in the exhaust stream of the ventilation system shall not exceed 25 percent of the lower flammable limit."
2. Chapter 510.3, 2012 International Mechanical Code® 2012 Edition
"The design and operation of the exhaust system shall be such that flammable contaminants are diluted in noncontaminated air to maintain concentrations in the exhaust flow below 25 percent of the contaminant's lower flammability limit."
3. Chapter 2404.7.3, 2012 International Fire Code® 2012 Edition
"Air velocity. Ventilation systems shall be designed, installed and maintained such that the average air velocity over the open face of the booth, or booth cross section in the direction of airflow during spraying operations, shall not be less than 100 feet per minute (0.51 m/s)."
4. Chapter 1504.7.3, 2006 International Fire Code® Commentary

"To facilitate the keeping of flammable vapors within a designated spraying space and limiting the amount of overspray, the code requires that the exhaust system be adequately sized to maintain an average velocity over the open face of the booth or booth cross section of no less than 100 feet per minute (0.51 m/s), which is the minimum velocity to capture particulate spray material. Velocities exceeding 200 lineal feet per minute (1.01 m/s) have been determined to be too great for this purpose. To determine the minimum ventilation/exhaust capacity in cubic feet per minute (cfm), multiply the booth width (feet) by booth height (feet) by 100 (lineal per foot)."

1. OSHA Directive STD 01-05-010 - STD 1-5.10 - Clarification of 29 CFR 1910.107(b)(5)(i) Average Air Velocity of Spray Booths, June 1, 1973

"The average air velocity requirements over the open face of the booth stated in this paragraph for spray finishing operations using flammable and combustible liquids were taken from NFPA-33-1969 and pertain to those hazards associated with fire protection or the removal of flammable vapor accumulation from the interior of the booth during spraying operations. This paragraph applies to maintaining the concentration of flammable vapors below the lower explosive limit (LEL) in a spray booth but does not apply to maintaining operator exposures to within the permissible exposure limits (PEL)."

2. OSHA Standard Interpretations 10/22/2001 - Clarification of minimum face velocity requirements for spray booths, October 22, 2001

Question: 29 CFR 1910.107(b)(5) only refers to a dry filter spray booth. What is the minimum air velocity requirement for a waterwash spray booth or an enclosed booth with no openings?

Reply: OSHA currently does not have specific standards addressing velocity requirements for a waterwash spray booth or an enclosed booth with no openings. However, 1910.94(c)(6)(ii) requires that the vapor concentration in all area of the booth remain at a level below 25 percent of the lower explosive limit (LEL). This requirement corresponds to the requirements of NFPA 33, section 5.2, Ventilation, performance requirements (2000 edition)."

Cost Impact: This code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The disapproval was based on the committee's judgment that the velocity should be 100 fpm or 25% of the LFL, whichever is greater, since the characteristics of the spraying materials may vary considerably.

Assembly Action:

None

Public Comments

Public Comment:

Geoffrey Raifsnider, Global Finishing Solutions, representing self, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

2404.7.3 (IMC [F] 502.7.3.3) Air velocity. ~~The ventilation system shall be designed, installed and maintained so that the flammable contaminants are diluted in noncontaminated air to maintain concentrations in the exhaust air flow below 25 percent of the contaminant's lower flammable limit (LFL). In addition, the spray booth shall be provided with mechanical ventilation so that the average air velocity through openings is in accordance with Sections 2404.7.3.1 and 2404.7.3.2 (IMC 502.7.3.3.1 and 502.7.3.3.2). Each spray area shall be provided with mechanical ventilation in accordance with Sections 2404.7.3.1 through 2404.7.3.3~~

2404.7.3.1 (IMC [F] 502.7.3.3.1) Open face or open front spray booth. For spray application operations conducted in an open face or open front spray booth, the ventilation system shall be designed, installed and maintained ~~such so~~ that the average air velocity into the spray booth through all openings shall be not less than 100 feet per minute (0.51 m/s).

Exception: For fixed or automated electrostatic spray application equipment the average air velocity into the spray booth through all openings shall not be less than 50 feet per minute (0.25 m/s).

~~**2404.7.3.2 (IMC [F] 502.7.3.3.2) Enclosed spray booth or spray room.** For spray application operations conducted in an enclosed spray booth or spray room, the ventilation system shall be designed, installed and maintained so that the flammable contaminants are diluted in noncontaminated air to maintain concentrations in the exhaust flow below 25 percent of the contaminant's lower flammable limit (LFL).~~

2404.7.3.2 (IMC [F] 502.7.3.3.2) Enclosed spray booth or spray room with openings for product conveyance. ~~In addition to the requirements of 2404.7.3.2, For spray application operations conducted in an enclosed spray booth or spray room with openings for product conveyance, the ventilation system shall also be designed, installed and maintained so that the average air velocity into the spray booth through openings shall be not less than 100 feet per minute (0.51 m/s).~~

Exceptions:

1. ~~For fixed or automated electrostatic spray application equipment the average air velocity into the spray booth through all openings shall not be less than 50 feet per minute (0.25 m/s).~~
- 2: Where methods are used to reduce cross drafts that can draw vapors and overspray through openings from the spray booth or spray room, the average air velocity into the spray booth or spray room shall be capable of capturing and confining vapors and overspray to the spray booth or spray room.

Commenter's Reason: Original proposal has been revised to establish the overall requirement that concentration in the exhaust must be kept below 25% of the LFL. The characteristics of the materials being sprayed must be taken into account to determine the amount of air exhausted.

It has also been revised to include the minimum velocity requirements through conveyor openings for capture and confinement of overspray and vapors.

The following ventilation design basis for paint spray booths is common in the industry and has been effective in providing clean, safe and reliable painting environments which are in compliance with the intent of the International Fire Code, OSHA, and NFPA 33.

1. The total exhaust ventilation rate shall be based upon the minimum amount of air required to maintain the concentration of flammable vapors in the exhaust below 25%
2. Where appropriate the exhaust rate shall be increased by the amount of air needed to:
 - a maintain a minimum average velocity through all openings which prevent the escape of overspray from the spray booth
 - b achieve the desired collection of overspray toward the exhaust filters
 - c achieve the desired paint transfer efficiency

There are many types of booths and rooms in which the 100 fpm value within the spray area would be detrimental to the quality of the product and based upon the amount of paint used is well in excess of the minimum dilution air needed to keep the exhaust below 25% of the LFL. This extra air also increases the operating costs. The air velocities for a specific spray booth or spray room

should be specific to the individual design that accomplishes the desired performance (i.e. 25% LFL or containment of overspray at openings).

This proposal does not require additional knowledge or tools for the AHJ. The designer or owner of the spray booth or room can provide calculations showing the minimum ventilation rate based upon the type and amount of paint being sprayed. The ventilation rate can be converted into an average velocity in the spray area. The AHJ can ask for balancing information to confirm the installation meets the code requirements or can independently measure the design velocity in the same manner as currently used by the AHJ to confirm 100 FPM.

Final Hearing Results

F261-13

AMPC

Code Change No: F263-13

Original Proposal

Section(s): 2705.2.3.1, 202 (IBC 202)

Proponent: Patrick A. McLaughlin, McLaughlin & Associates, representing The Semiconductor Industry Association (pmclaugma@aol.com)

Revise as follows:

2705.2.3.1 Construction. Workstations in *fabrication areas* shall be constructed of materials compatible with the materials used and stored at the workstation. The portion of the workstation that serves as a cabinet for HPM gases, ~~and HPM Class I flammable liquids, Class II or Class IIIA combustible liquid~~ shall be noncombustible and, if of metal, shall be not less than 0.0478-inch (18 gage) (1.2 mm) steel.

SECTION 202 (IBC [F] 202) GENERAL DEFINITIONS

~~**HPM FLAMMABLE LIQUID.** An HPM liquid that is defined as either a Class I flammable liquid or a Class II or Class IIIA combustible liquid.~~

Reason: HPM flammable liquids, which include Class I, II and IIIA liquid, are mentioned only once in the Codes in IFC Section 2705.2.3.1. This change deletes the definition of HPM flammable liquids and replaces it in Section 2705.2.3.1 with the text from the HPM flammable liquids definition. The result will be that Section 2705.2.3.1 will still apply to the same materials, and the requirements in the Code that apply to other HPMS, will not be misapplied to Class II and IIIA combustible liquids. There is no justification to treat Class II and IIIA combustible liquids the same as flammable liquids in H5 occupancies. No other occupancy does so. The corresponding IBC definition is also deleted.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F263-12

AS

Code Change No: F264-13

Original Proposal

Section(s): 2808.3

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS) (rjd@davidsoncodeconcepts.com)

Revise as follows:

2808.3 Size of piles. Piles shall not exceed 25 feet (7620 mm) in height, 150 feet (45 720 mm) in width and 250 feet (76 200 mm) in length.

Exception: The *fire code official* is authorized to allow the pile size to be increased when a fire protection plan is provided for approval that includes, but is not limited to the following:

1. Storage yard areas and materials-handling equipment selection, design, and arrangement shall be based upon sound fire prevention and protection principles.
2. Factors that lead to spontaneous heating shall be identified in the plan and control of the various factors shall be identified and implemented, including provisions for monitoring the internal condition of the pile.
3. The plan shall include means for early fire detection, reporting to the public fire department; and facilities needed by the fire department for fire extinguishment including a water supply and fire hydrants.
4. Fire apparatus access roads around the piles and access roads to the top of the piles shall be established, identified and maintained.
5. Regular yard inspections by trained personnel shall be included as part of an effective fire prevention maintenance program.

Additional fire protection called for in the plan is shall be provided and shall be installed in accordance with ~~Chapter 9~~ this code. The increase of the pile size shall be based upon the capabilities of the system installed fire protection systems and features.

Reason: The purpose of this proposal is to provide better tools and guidance for fire code officials when proposals to increase pile size are submitted. The current language for the exception to Section 2808.3 is:

Exception: The fire code official is authorized to allow the pile size to be increased when additional fire protection is provided in accordance with Chapter 9. The increase shall be based upon the capabilities of the system installed.

The language provides no actual guidance other than a statement that the pile size is based upon the systems installed in accordance with Chapter 9. A review of Chapter 9 provides no additional guidance.

In reality, the protection needed for increased pile size include fire flows through a hydrant system, fire apparatus access roads, means for monitoring pile temperatures, a means of notifying the fire department and a sound fire prevention maintenance program. The language added to modify the existing exception provides for these features to be addressed in a fire protection plan submittal to the fire code official for approval. Because the systems installed may be covered by various portions of the code such as fire apparatus access roads covered by Chapter 5, the reference to Chapter 9 was changed to "this code".

The basis of this language should not be new to experienced fire code officials, it can be found in the discontinued standard NFPA 46 which was referenced by some legacy fire code editions and it was located in NFPA 230 which was referenced by the 2003 edition of the IFC. When NFPA eliminated NFPA 230 and put some of the requirements in NFPA 13 with the bulk going to NFPA 1, no work was done to add language to the later editions of the IFC to replace language relied upon from the referenced standard.

Extract from NFPA 230-2003 PROTECTION OF STORAGE OF FOREST PRODUCTS

11.6.2 General.

11.6.2.1* *The fire hazard potential inherent in storage piles shall be controlled by a positive fire prevention program under the direct supervision of upper level management that shall include the following:*

- (1) Selection, design, and arrangement of storage yard areas and materials-handling equipment based upon sound fire prevention and protection principles
- (2) Establishment of control over the various factors that lead to spontaneous heating, including provisions for monitoring the internal condition of the pile
- (3) Means for early fire detection and extinguishment
- (4) Driveways around the piles and access roads to the top of the piles for effective fire-fighting operations
- (5) Facilities for calling the public fire department and facilities needed by the fire department for fire extinguishment
- (6) Effective fire prevention maintenance program, including regular yard inspections by trained personnel

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCS was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers.

Fire codes related to storage, handling, and preprocessing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and preprocessing technologies, the BFICOCS has identified changes in the IFC that benefit industry and the public.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent’s reason statement that the new exceptions provide needed guidance and enforcement flexibility to the fire code official. The practicality and advisability of having fire apparatus access roads atop the piles in Exception 4 was questioned.

Assembly Action:

None

Final Hearing Results

F264-12

AS

Code Change No: F266-13

Original Proposal

Section(s): 3101.1, 3103.1

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

3101.1 Scope. Tents and membrane structures shall comply with this chapter. The provisions of Section 3103 are applicable only to temporary tents and membrane structures. The provisions of Section 3104 are applicable to temporary and permanent tents and membrane structures. Other temporary structures shall comply with the *International Building Code*.

3103.1 General. ~~All temporary~~ Tents and membrane structures used for temporary periods shall comply with this section. Other temporary structures erected for a period of 180 days or less shall comply with the *International Building Code*.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Background – There has been confusion with attempting to apply the IFC requirements in Chapter 31 to temporary structures. Typically this occurs because the fire code official is already involved with the temporary event regarding other operational permits required by the IFC.

For example, a weekend concert is planned at the fair. The fire code official is already involved with various IFC operational permits for Place of Assembly, Carnival/Fair, and Temporary Membrane Structures and Tents. However, when a stage, platform or other temporary structure is erected the IBC regulates the construction.

The proposal adds a sentence to IFC 3101.1 to send the code user to the IBC for temporary structures. IBC 108.2 and 3103 clearly address the design requirements for temporary structures. IBC 3103.1 has a similar reference back to the IFC to temporary membrane structures and temporary tents. Clearly, the IFC is designed to address 'temporary tents' and 'temporary membrane structures', while IBC 3103 is intended to address 'temporary structures'.

This reference to the IBC is repeated in IFC 3103.1. Normally a redundant sentence is not needed in the code, but since this has been an area of confusion, it is warranted to repeat the reference again.

See link for incident at Indiana State Fair - <http://www.youtube.com/watch?v=4jEmtxnrVCI>

Cost Impact: The code change will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides clarification of the applicability of the IBC.

Assembly Action:

None

Final Hearing Results

F266-12

AS

Code Change No: F268-13

Original Proposal

Section(s): 3103.9; 3103.9.1 (New), 3103.9.2 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

3103.9 Anchorage required. Tents or membrane structures and their appurtenances shall be adequately roped, braced and anchored to withstand the elements of weather and prevent against collapsing. ~~Documentation of structural stability shall be furnished to the fire code official on request.~~

3103.9.1 Structural design. Tents and membrane structures shall be designed and constructed to comply with Chapter 16 of the *International Building Code* where any of the following conditions occur:

1. The occupant load of the tent or membrane structure exceeds 100.
2. The tent or membrane structure is classified as a Group A, E, or I.
3. The tent or membrane structure is classified as a Group R Occupancy with an occupant load exceeding 50, or
4. The tent or membrane structure exceeds one story.

3103.9.2 Documentation. Documentation of structural stability shall be furnished to the fire code official upon request.

Reason: There has been confusion with attempting to apply the IFC requirements in Chapter 31 to temporary tents and membrane structures relative to structural stability.

These structures can be seen at concerts, outdoor functions, fairs, etc. Even though the provision of 'temporary' limits the usability of these structures to less than 180 days, improper structural design can still lead to problems.

Many of these temporary tents and temporary membrane structures have multiple floors, and over 30 feet in height. As the height increases, the impact of collapse increases and typically these structures are surrounded by hundreds of people.

This proposal revises IFC Section 3103.9 to include requirements for temporary tents and membrane structures to comply with IBC Chapter 16 structural requirements when there is a significant life hazard within the structure, as reflected in Section 3103.9.1. The relative significance is based on the occupancy classification, the occupant load, or the number of levels within the tent or membrane structure.

The requirement for documentation is relocated from 3103.9 to 3103.9.2.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Cost Impact: This code change may increase the cost of construction

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The disapproval was based on the committee's judgment that the proposal has merit but needs to contain separate requirements for tents and for membrane structures due to their different characteristics. A concern was also expressed that Section 3103.9.1(2) could be applied to very small tents that could not comply with all the requirements.

Assembly Action:

None

Public Comments

Public Comment:

Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Replace the proposal as follows:

3103.9 Anchorage required. Tents or membrane structures and their appurtenances shall be adequately roped, braced and anchored to withstand the elements of weather and prevent against collapsing. Documentation of structural stability shall be furnished to the fire code official on request.

3103.9.1 Tents and membrane structures exceeding one story. Tents and membrane structures exceeding one story shall be designed and constructed to comply with Chapter 16 of the *International Building Code*.

Commenter's Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Members of the IFC committee and others at the Dallas hearings thought the original proposal that required tents and membrane structures to comply with IBC structural design requirements was not justified for all of the structures described in the proposal. We cannot disagree with those opinions.

However, there are an ever increasing number of multiple story tents and membrane structures showing up in jurisdictions. These structures can be seen at concerts, outdoor functions, fairs, etc. Even though the provision of 'temporary' limits the usability of these multistory structures to less than 180 days, improper structural design can pose a significant safety hazard.

The code currently requires that documentation of structural stability be furnished to the fire code official on request, but provides no guidance on how to determine an acceptable level of structural integrity.

This proposal closes this loophole by requiring multiple story tents and membrane structures to be designed and constructed in accordance with Chapter 16 of the IBC. This provides the fire code official with a solid tool to use to verify proper structural design.

Final Hearing Results

F268-13

AMPC

Code Change No: **F269-13**

Original Proposal

Section(s): 3105 (New), 202 (New), 3101.1, 3102.1, 105.6.43, 105.7.16, Chapter 80

Proponent: Anne vonWeller, representing Witt Associates; Karl Ruling, Technical Standards Manager, Professional Lighting and Sound Association representing self; Scott Adams, Deputy Chief Park City Fire District, representing self

Add new text as follows:

SECTION 3105 **TEMPORARY STAGE CANOPIES**

3105.1 General. Temporary stage canopies shall comply with Section 3104, Sections 3105.2 through 3105.8 and ANSI E1.21.

3105.2 Approval. Temporary stage canopies in excess of 400 square feet shall not be erected operated or maintained for any purpose without first obtaining approval and a permit from the fire code official.

3105.3 Permits. Permits shall be required as set forth in Sections 105.6 and 105.7.

3105.4 Use period. Temporary stage canopies shall not be erected for a period of more than 45 days.

3105.5 Required documents. All of the following documents shall be submitted to the fire code official for review before a permit is approved:

1. Construction documents: Construction documents shall be prepared by a registered design professional in accordance with the *International Building Code*. Construction documents shall include:
 - 1.1. A summary sheet showing design criteria, loads and support reactions.
 - 1.2. Detailed construction and installation drawings.
 - 1.3. Design calculations.
 - 1.4. Operating limits of the structure explicitly outlined by the design professional including environmental conditions and physical forces.
 - 1.5. Effects of additive elements such as video walls, supported scenery, audio equipment, vertical and horizontal coverings.
 - 1.6. Means for adequate stability including specific requirements for guying and cross-bracing, ground anchors or ballast for different ground conditions.
2. Designation of responsible party: The owner of the temporary stage canopy shall designate in writing a person to have responsibility for the temporary stage canopy on the site. The designated person shall have sufficient knowledge of the construction documents, manufacturer's recommendations and operations plan to make judgments regarding the structure's safety and to coordinate with the fire code official.
3. Operations plan: The operations plan shall reflect manufacturer's operational guidelines, procedures for environmental monitoring and actions to be taken under specified conditions consistent with the construction documents.

3105.6 Inspections. Inspections shall comply with Section 106 and Sections 3105.6.1 and 3106.6.2.

3105.6.1 Independent inspector. The owner of a temporary stage canopy shall employ a qualified, independent approved agency or individual to inspect the installation of a temporary stage canopy.

3105.6.2 Inspection report. The inspecting agency or individual shall furnish an inspection report to the fire code official. The inspection report shall indicate that the temporary stage canopy was inspected and was or was not installed in accordance with the approved construction documents. Discrepancies shall be brought to the immediate attention of the installer for correction. Where any discrepancy is not corrected, it shall be brought to the attention of the fire code official and the designated responsible party.

3105.7 Means of egress. The means of egress for temporary stage canopies shall comply with Chapter 10.

3105.8 Location. Temporary stage canopies shall be located a distance from property lines and buildings to accommodate distances indicated in the construction drawings for guy wires, cross-bracing, ground anchors or ballast. Location shall not interfere with egress from a building or encroach on fire apparatus access roads.

SECTION 202 GENERAL DEFINITIONS

TEMPORARY STAGE CANOPY. A temporary stage canopy is a temporary ground-supported structure used to cover stage areas and support equipment in the production of outdoor entertainment events.

Revise as follows:

SECTION 3101 GENERAL

3101.1 Scope. Tents, canopies, temporary stage canopies and membrane structures shall comply with this chapter. The provisions of Section 3103 are applicable only to temporary membrane structures. The provisions of Section 3104 are applicable to temporary and permanent membrane structures.

SECTION 3102 DEFINITIONS

3102.1 Definitions. The following terms are defined in Chapter 2:

AIR-INFLATED STRUCTURE.
AIR-SUPPORTED STRUCTURE.
MEMBRANE STRUCTURE.
TEMPORARY STAGE CANOPY.
TENT.

[A] 105.6.43 Temporary membrane structures and tents. An operational permit is required to operate an air-supported temporary membrane structure, a temporary stage canopy or a tent having an area in excess of 400 square feet (37 m²).

Exceptions: 1. and 2. (No change to current text.)

[A] 105.7.16 Temporary membrane structures and tents. A construction permit is required to erect an air-supported temporary membrane structure, a temporary stage canopy or a tent having an area in excess of 400 square feet (37 m²).

Exceptions: 1. through 3. (No change to current text.)

Add new standard to Chapter 80 as follows:

ANSI

E1.21-2006 Entertainment Technology: Temporary Ground Supported Overhead Structures Used to Cover the Stage Areas and Support Equipment in the Production of Outdoor Entertainment Events.

Reason: There were four high-profile temporary stage canopy collapses during the 2011 summer concert season: one on August 7th at Brady District Block Party, Tulsa Oklahoma; one on July 17th at the Cisco Ottawa Blues Festival in Ottawa, Canada; one on August 13, 2011, at the Indiana State Fairgrounds which resulted in the loss of seven lives and the injury of fifty more; and another on August 18th at the Pukkelpop Festival in Kiewit, Belgium. Again, in the summer of 2012 an additional life was lost at a Radiohead concert in Toronto. All resulted in tremendous property damage and two in multiple fatalities. The obvious concern is for the safety of the performers and audiences, stage-hands, lighting technicians, security personnel and every other profession or individual that necessitates proximity to a temporary stage.

Temporary stage canopies are very specialized and complex. The nature of the structures must accommodate a wide variety of changing components such as audio equipment, video walls and scenery. The entertainment industry is continually evolving with new ways to improve shows creating larger and more complex spectacles.

Due to the nearly unique design of temporary stage canopies, it is difficult for most fire inspectors to find adequate guidance in current code language to satisfactorily regulate these specialized structures.

Witt Associates contracted with the Indiana State Fair Commission to complete a comprehensive assessment of the 2011 State Fair collapse incident. The assessment included a review of applicable laws and model codes as well as a nationwide survey of best practices. A major recommendation of the assessment was:

"National model building and fire codes should adopt more specific standards for temporary membrane stage structures reflecting the increasing complexity of these structures"

The complete report may be reviewed at www.wittassociates.com/clients-projects/project-list/indiana-state-fair-collapse-independent-assessment. This proposal addresses the report recommendation, incorporates a reasonable industry standard and best practices.

- 3105.1 - An ANSI standard exists which is specifically targeted to temporary stage canopies. ANSI E1.21-2006 was produced by the Entertainment Services and Technology Association (ESTA). ESTA recently merged with an international organization, Professional Lighting and Sound Association (PLASA). Fire and building code officials may download the standard at no charge provided they register at www.plasa.org.
- 3105.2 - The trigger starting regulation at 400 square feet is consistent with the current International Fire Code.
- 3104.4 - The 45 day duration is consistent with ANSI E1.21.
- 3105.5 - This section is a summary of the relevant requirements of ANSI E1.21 necessary to provide guidance to regulating authorities. Stage canopies are subject to more diverse loads than most permanent structures. Because of the variable weights of equipment for different shows, the need to monitor changing weather conditions and the requirement to be able to raise and lower the roof to install equipment, there is a necessity for a design professional to fully analyze the structure and a need to designate a responsible person on site who understands this complexity of considerations.
- 3105.6 - It is unlikely many fire inspectors will be familiar with the specialized nature of these structures. That is the reason we are recommending a qualified specialized inspector be employed by the owner to inspect and report to the authority having jurisdiction and the designated responsible person. An Entertainment Technician Certification Program (ETCP) certification exists which would demonstrate competence to inspect the majority of temporary stage canopies. For large, unusually complex canopies there is latitude for the fire official to require inspection by structural engineer familiar with these types of temporary structures.
- 3105.7 and
- 3105.8 - This language is for general safety and is consistent with the International Fire Code.
- 3102 - Definitions were added to describe the specialized structure to be regulated.

Cost Impact: The code change proposal will increase the cost of construction

Public Hearing Results

For staff analysis of the content of ANSI E1.21-2006 relative to CP#28, Section 3.6, please visit: <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Modified

Modify the proposal as follows:

3105.2 Approval. Temporary stage canopies in excess of 400 square feet shall not be erected operated or maintained for any purpose without first obtaining approval and a permit from the fire code official and the building official.

3105.5 Required documents. All of the following documents shall be submitted to the fire code official and the building official for review before a permit is approved:

1. Construction documents: Construction documents shall be prepared in accordance with the *International Building Code* by a registered design professional ~~in accordance with the *International Building Code*~~. Construction documents shall include:
 - 1.1. A summary sheet showing the building code used, design criteria, loads and support reactions.
 - 1.2. Detailed construction and installation drawings.
 - 1.3. Design calculations.
 - 1.4. Operating limits of the structure explicitly outlined by the design professional including environmental conditions and physical forces.
 - 1.5. Effects of additive elements such as video walls, supported scenery, audio equipment, vertical and horizontal coverings.
 - 1.6. Means for adequate stability including specific requirements for guying and cross-bracing, ground anchors or ballast for different ground conditions.
2. Designation of responsible party: The owner of the temporary stage canopy shall designate in writing a person to have responsibility for the temporary stage canopy on the site. The designated person shall have sufficient knowledge of the construction documents, manufacturer's recommendations and operations plan to make judgments regarding the structure's safety and to coordinate with the fire code official.
3. Operations plan: The operations plan shall reflect manufacturer's operational guidelines, procedures for environmental monitoring and actions to be taken under specified conditions consistent with the construction documents.

3105.6 Inspections. Inspections shall comply with Section 106 and Sections 3105.6.1 and ~~3106.6.2~~ 3105.6.2.

TEMPORARY STAGE CANOPY. A temporary stage canopy is a temporary ground-supported membrane covered frame structure used to cover stage areas and support equipment in the production of outdoor entertainment events.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee approved the code change based on the proponent's reason statement. The modifications in Sections 3105.2 and 3105.5 add the building official since the structural requirements are regulated by the IBC and many fire code officials might not be familiar with them. In Section 3105.5(1), the modification clarifies that it is the construction documents that must comply with the IBC. In Section 3105.5(1.1), the modification further clarifies the design criteria used. In the definition, the modification adds membrane covered frame structures for clarity to the applicability of the definition. The numbering change in Section 3105.6 of the modification is editorial.

Assembly Action:

None

Final Hearing Results

F269-13

AM

Code Change No: F271-13

Original Proposal

Section(s): 3203.2

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

3203.2 Class I commodities. Class I commodities are essentially noncombustible products on wooden ~~or nonexpanded polyethylene solid deck pallets~~, in ordinary corrugated cartons with or without single-thickness dividers, or in ordinary paper wrappings with or without pallets. Class I commodities are allowed to contain a limited amount of Group A plastics in accordance with Section 3203.7.4. Examples of Class I commodities include, but are not limited to, the following:

- Alcoholic beverages not exceeding 20-percent alcohol
- Appliances noncombustible, electrical
- Cement in bags
- Ceramics
- Dairy products in nonwax-coated containers (excluding bottles)
- Dry insecticides
- Foods in noncombustible containers
- Fresh fruits and vegetables in nonplastic trays or containers
- Frozen foods
- Glass
- Glycol in metal cans
- Gypsum board
- Inert materials, bagged
- Insulation, noncombustible
- Noncombustible liquids in plastic containers having less than a 5-gallon (19 L) capacity
- Noncombustible metal products

Reason: Nonexpanded Polyethylene Solid Deck Pallets increase the fuel load of pallet considerably. In NFPA 13, the commodity classification of products stored on plastic pallets are increased by 1-2 classes depending on the type of plastic pallets. In some cases [depending on the weights], it can even be classified as High Hazard Commodity when using Figure 3203.7.4.

Based on research of databases etc., there is no substantiation for classifying products stored on these types of pallets as Class I. However, there are major incidences such as the Post and Paddock Fire prepared by Scott Stookey [former ICC Senior Staff] which point to the possibility of sprinkler failure if the protection of noncombustible materials on nonexpanded polyethylene solid deck is based on Class I Commodity.

Additionally with the rampant use of non-listed plastic pallets [mainly shipped from overseas], these products are a major concern to fire fighter safety.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

3203.2 Class I commodities. Class I commodities are essentially noncombustible products on wooden pallets, in ordinary corrugated cartons with or without single-thickness dividers, or in ordinary paper wrappings with or without pallets. Class I commodities are allowed to contain a limited amount of Group A plastics in accordance with Section 3203.7.4. Examples of Class I commodities include, but are not limited to, the following:

Alcoholic beverages not exceeding 20-percent alcohol
Appliances noncombustible, electrical
Cement in bags
Ceramics
Dairy products in nonwax-coated containers (excluding bottles)
Dry insecticides
Foods in noncombustible containers
Fresh fruits and vegetables in nonplastic trays or containers
Frozen foods
Glass
Glycol in metal cans
Gypsum board
Inert materials, bagged
Insulation, noncombustible
Noncombustible liquids in plastic containers having less than a 5-gallon (19 L) capacity
Noncombustible metal products

Committee Reason: This proposal was felt to deal with potential hazards created by calling commodities using non expanded polyethylene solid deck pallets Class I. It was recommended that the use of such pallets be placed within another commodity classification. The modification simply restores the term "pallet" which was inadvertently noted as being deleted. It was noted that more guidance should be provided related to the classification of commodities if non wooden pallets are used.

Assembly Action:

None

Final Hearing Results

F271-13

AM

Code Change No: F272-13

Original Proposal

Section(s): 3206.4.1 (New), 3208.2.1

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self
(rjd@davidsoncodeconcepts.com)

Revise as follows:

3206.4.1 Pallets. Automatic sprinkler system requirements based upon the presence of pallets shall be in accordance with NFPA 13.

3208.2.1 Plastic pallets and shelves. Storage on plastic pallets or plastic shelves shall be protected by approved specially engineered fire protection systems.

Exception: ~~Plastic pallets listed and labeled in accordance with UL 2335 shall be treated as wood pallets for determining required sprinkler protection.~~

Reason: As currently written, Chapter 32 gives the impression that pallets are only a factor when involving rack storage. This is not the case, NFPA 13 has extensive requirements for pallet use and storage based upon the type of pallet that must be designed for and maintained during occupancy.

This proposal deletes references to plastic pallets and adds a section pointing the user of the code to NFPA 13 for design and installations requirements relative to the presence of pallets.

Example language from NFPA 13-2010

<http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=13>

- 3.9.1.11* Conventional Pallets. A material-handling aid designed to support a unit load with openings to provide access for material-handling devices. (See Figure A.3.9.1.11.)
- 3.9.1.21 Plastic Pallet. A pallet having any portion of its construction consisting of a plastic material.
- 3.9.1.22* Reinforced Plastic Pallet. A plastic pallet incorporating a secondary reinforcing material (such as steel or fiberglass) within the pallet.
- 3.9.1.27 Wood Pallet. A pallet constructed entirely of wood with metal fasteners.

5.6.2 Pallet Types.

- 5.6.2.1 **General.** When loads are palletized, the use of wood or metal pallets, or listed pallets equivalent to wood, shall be assumed in the classification of commodities.
- 5.6.2.2* **Unreinforced Plastic Pallets.** For Class I through Class IV commodities, when unreinforced polypropylene or unreinforced high-density polyethylene plastic pallets are used, the classification of the commodity unit shall be increased one class.
 - 5.6.2.2.1 Unreinforced polypropylene or unreinforced high-density polyethylene plastic pallets shall be marked with a permanent symbol to indicate that the pallet is unreinforced.
- 5.6.2.3* For Class I through Class IV commodities, when reinforced polypropylene or reinforced high-density polyethylene plastic pallets are used, the classification of the commodity unit shall be increased two classes except for Class IV commodity, which shall be increased to a cartoned unexpanded Group A plastic commodity.
 - 5.6.2.3.1 Pallets shall be assumed to be reinforced if no permanent marking or manufacturer's certification of nonreinforcement is provided.
 - 5.6.2.4 No increase in the commodity classification shall be required for Group A plastic commodities stored on plastic pallets.
- 5.6.2.5 For ceiling-only sprinkler protection, the requirements of 5.6.2.2 and 5.6.2.3 shall not apply where plastic pallets are used and where the sprinkler system uses spray sprinklers with a minimum K-factor of K-16.8 (240).
- 5.6.2.6 The requirements of 5.6.2.2 through 5.6.2.7 shall not apply to nonwood pallets that have demonstrated a fire hazard that is equal to or less than wood pallets and are listed as such.
- 5.6.2.7 For Class I through Class IV commodities stored on plastic pallets when other than wood, metal, or polypropylene or high-density polyethylene plastic pallets are used, the classification of the commodity unit shall be determined by specific testing conducted by a national testing laboratory or shall be increased two classes.

12.12* Protection of Idle Pallets.

12.12.1 Wood Pallets.

12.12.1.1* Wood pallets shall be permitted to be stored in the following arrangements:

- (1) Stored outside
- (2) Stored in a detached structure
- (3) Stored indoors where arranged and protected in accordance with 12.12.1.2

Table 12.12.1.2(a) Control Mode Density/Area Sprinkler Protection for Indoor Storage of Idle Wood Pallets

12.12.2 Plastic Pallets.

12.12.2.1 Plastic pallets shall be permitted to be stored in the following manners:

- (1) Plastic pallets shall be permitted to be stored outside.
- (2) Plastic pallets shall be permitted to be stored in a detached structure.
- (3) Plastic pallets shall be permitted to be stored indoors where arranged and protected in accordance with the requirements of 12.12.2.2.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

3206.4.1 Pallets. Automatic sprinkler system requirements based upon the presence of pallets shall be in accordance with NFPA 13.

3206.4.1.1 Plastic pallets. Plastic pallets listed and labeled in accordance with UL 2335 or FM 4996 shall be treated as wood pallets for determining required sprinkler protection.

3208.2.1 Plastic shelves. Storage on plastic shelves shall be protected by approved specially engineered fire protection systems.

Add a new standard to Chapter 80 as follows:

FM

ANSI/FM 4996-13 Approval Standard for Classification of Pallets and Other Material Handling Products as Equivalent to Wood Pallets

Committee Reason: This proposal addresses a concern with plastic pallets whether used in rack storage or palletized storage. The modification combines the work in F275-13 with F272-13. F275-13 goes into more detail as to how plastic pallets are to be addressed based upon their potential hazard. The proposal now references UL 2335 and FM4996. The standard UL 2335 was initially deleted by F272-13. This modification reinstates the standard and places the reference to these standards in a more generally applicable section. Standard FM4996-13 is an additional compliance option.

Assembly Action:

None

Final Hearing Results

F272-13

AM

Code Change No: F273-13

Original Proposal

Section(s): 3206.6.1.1

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

3206.6.1.1 Number of doors required. A minimum of one access door shall be provided in each 100 lineal feet (30 480 mm), or fraction thereof, of the exterior walls that face required fire apparatus access roads. The required access doors shall be distributed such that the lineal distance between adjacent access doors does not exceed 100 feet (30 480 mm).

Exception: The lineal distance between adjacent access doors can exceed 100 feet (30 480 mm) in existing building where no change in occupancy is proposed. Final number and distribution of access doors in existing building shall be approved.

Reason: Many existing buildings do not meet the requirements of 100 foot distribution required in the second sentence of 3206.6.1.1. The section stating "The required access doors shall be distributed such that the lineal distance between adjacent access doors does not exceed 100 feet (30 480 mm)" was proposed and first appeared in the 2009 Edition of the Fire Code. Existing warehouses where one tenant moves out and a new tenant moves in will require a new high piled storage permit. As part of the permit, the current/adopted edition of Chapter 32 is applied which would result in many cases cutting holes in [in many cases concrete] exterior walls and/or restriction in business as a result of adding doors where currently roll up doors exist. This would allow a small amount of flexibility for building owners of existing buildings and the fire code official when adding doors appears costly and/or impractical.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

3206.6.1.1 Number of doors required. A minimum of one access door shall be provided in each 100 lineal feet (30 480 mm), or fraction thereof, of the exterior walls that face required fire apparatus access roads. The required access doors shall be distributed such that the lineal distance between adjacent access doors does not exceed 100 feet (30 480 mm).

Exception: The lineal distance between adjacent access doors can exceed 100 feet (30 480 mm) in existing buildings where no change in occupancy is proposed. ~~Final~~ The number and distribution of access doors in existing buildings shall be approved.

Committee Reason: This proposal provides flexibility for existing buildings initially approved with different access spacing requirements. The modification simply deletes the term "final" from the beginning of the second sentence as it is not necessary.

Assembly Action:

None

Final Hearing Results

F273-13

AM

Code Change No: F274-13

Original Proposal

Section(s): 3206.9.3

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

3206.9.3 Dead ends. ~~Dead-end aisles shall be in accordance with Chapter 10~~ not exceed 50 feet (15240 mm).

Reason: There are no dead-end requirements for aisles for storage warehouses in Chapter 10. The only dead end requirements in Chapter 10 apply to corridors [Section 1018.4] and in assembly occupancies.[Section 1028.9.5], as well as in existing occupancies [Section and Table 1104.17.2]. There are no requirements applicable to a warehouse and/or high piled storage area.

Cost Impact: The code change proposal may increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Substitute proposal as follows:

3206.9.3 Dead-end aisles. ~~Dead-end aisles shall be in accordance with Chapter 10. Dead-end aisles shall not exceed 20 feet (6096 mm) in length in Group M Occupancies. Dead-end aisles shall not exceed 50 feet (15 240 mm) in length in all other occupancies.~~

Exception: Dead-end aisles are not limited where the length of the dead-end aisle is less than 2.5 times the least width of the dead-end aisle.

Committee Reason: The proposal was appropriate as it provides for both occupant and fire fighter safety. Aisles in high piled storage areas are very unique from traditional aisles or corridors in chapter 10 of the IBC. The modification which is a substitute proposal addresses Group M occupancies more restrictively due to the public being present. In addition dead end aisles that are small in relation to the width of the aisles are provided some flexibility.

Assembly Action:

None

Final Hearing Results

F274-13

AM

Code Change No: F276-13

Original Proposal

Section(s): 3208.2.2

Proponent: William Fletcher, P.E., Fletcher Fire Protection Engineering

Revise as follows:

3208.2.2 Racks with solid shelving. Racks with solid shelving having an area greater than ~~32~~ 20 square feet (~~3-1.9~~ 0.9 m²), measured between *approved* flue spaces at all four edges of the shelf, shall be in accordance with this section.

Exceptions:

1. Racks with mesh, grated, slatted or similar shelves having uniform openings not more than 6 inches (152 mm) apart, comprised of at least 50 percent of the overall shelf area, and with *approved* flue spaces are allowed to be treated as racks without solid shelves.
2. Racks used for the storage of combustible paper records, with solid shelving, shall be in accordance with NFPA 13.

Reason: This proposal provides consistency with NFPA 13. Section 3.9.3.7.7 notes “shelves within racks with a surface area ≤ 20 sq ft, or 50% open slats is considered an open rack, and thus ESFR ceiling only protection is appropriate. This maximum 20 sq ft shelf rule is the usual standard most consultants follow when determining if the rack shelving can be considered open, and thus appropriate for ESFR protection.

Cost Impact: The change will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This was approved as it correlates the IFC more closely with the requirements in NFPA 13 with regard to what is considered solid shelving.

Assembly Action:

None

Final Hearing Results

F276-12

AS

Code Change No: F278-13

Original Proposal

Section(s): 3304.2, 3304.3 (New), 3304.4

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

~~**3304.2 Waste disposal.** Combustible debris shall not be accumulated within buildings. Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work. Combustible debris, rubbish and waste material shall not be disposed of by burning on the site unless approved.~~

3304.2 Combustible debris, rubbish and waste. Combustible debris, rubbish and waste material shall comply with the requirements of Sections 3304.2.1 through 3304.2.4.

3304.2.1 Combustible debris, rubbish and waste material shall not be accumulated within buildings.

3304.2.2 Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work.

3304.2.3 Rubbish containers. Containers with tight-fitting or self-closing lids shall be provided for temporary storage of combustible debris, rubbish and waste material, until the end of each shift of work. The rubbish containers shall be constructed entirely of materials that comply with any one of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m² when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m² in the horizontal orientation.

3304.2.4 Spontaneous ignition. Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a *listed* disposal container.

3304.3 Burning of combustible debris, rubbish and waste. Combustible debris, rubbish and waste material shall not be disposed of by burning on the site unless *approved*.

~~**3304.3**~~ **3304.4 Open burning.** *Open burning* shall comply with Section 307.

~~**3304.4 Spontaneous ignition.** Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a *listed* disposal container.~~

Reason: This section needs to be rewritten in a more logical fashion because 3304.2 needs to address what to do with combustible debris, rubbish and waste but not address prohibitions or *what not to do*, which should be covered in another section (burning of the rubbish). The use of the phrase "combustible debris, rubbish and waste material" makes this section consistent with other sections of the IFC.

When dealing with what needs to be done, the proper sequence is: (a) don't accumulate it, (b) remove it at the end of a work shift and (c) (which is missing) put it in appropriate rubbish containers while you are working. Section 3304.4 addresses a special rubbish container for materials susceptible to spontaneous ignition and should also be covered under 3304.2 and not in a separate section.

With regard to burning of combustible waste, this should have its own section, preceding the section on open burning, and should not be covered under what to do with rubbish.

The added requirement for the rubbish containers (other than those for spontaneous ignition materials) tells inspectors that rubbish containers should be provided for temporary storage of combustible rubbish (until the end of the shift of work). Such

containers should be constructed of materials that have been shown to be safe by meeting a very severe fire test, just like those required by section 808 for I1, I2 and I3 occupancies. A key requirement is that the lids be tight fitting or self-closing.

Cost Impact: Minimal.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The disapproval was based on the fact that Section 3304.2.3 doesn't include a container size as do other sections of the code and because Section 3304.2.2 is unclear as to why a container would need to be emptied if it were not full and if it would need to be emptied if it became full before the end of a work shift.

Assembly Action:

None

Public Comments

Public Comment:

Marcelo M. Hirschler, (GBH International), requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

3304.2.3 Rubbish containers. ~~Where rubbish containers with a capacity exceeding 5.33 cubic feet (40 gallons) (0.15 m³) are used Containers with tight fitting or self-closing lids shall be provided~~ for temporary storage of combustible debris, rubbish and waste material, ~~until the end of each shift of work they shall have tight fitting or self closing lids. Such~~ The rubbish containers shall be constructed entirely of materials that comply with one of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m² when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m² in the horizontal orientation.

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: The technical committee did not disagree with the requirement but was concerned about the lack of a minimum size limit. The minimum size limit added is consistent with the size requirements in section 304.3 of the IFC. The fire safety requirements are consistent with those for large rubbish containers throughout the IFC. At present there are no fire safety requirements for rubbish containers in this application and that is the only IFC section lacking such requirements.

The technical committee was also concerned about the requirement to empty containers at the end of each shift of work and it has been eliminated.

The proposal adds clarity to this section by reorganizing it in a more logical fashion.

Final Hearing Results

F278-13

AMPC

Code Change No: **F279-13**

Original Proposal

Section(s): 3304.2.1 (New)

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

3304.2.1 Rubbish containers. Containers with tight-fitting or self-closing lids shall be provided for temporary storage of combustible debris, rubbish and waste material, until the end of each shift of work. The rubbish containers shall be constructed entirely of materials that comply with either of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m² when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m² in the horizontal orientation.

Reason: Rubbish containers should be provided for temporary storage of combustible rubbish (until the end of the shift of work). Such containers need not be constructed of metal but can be constructed of other noncombustible materials, including materials that have been shown to be safe by meeting a very severe fire test, just like those required by section 808 for I1, I2 and I3 occupancies. A key requirement is that the lids be tight fitting or self closing. Note that this does not address materials susceptible to spontaneous ignition, such as oily rags, covered by 3304.4. The use of the phrase "combustible debris, rubbish and waste" makes this section consistent with other sections of the IFC.

Cost Impact: Minimal

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The disapproval was based on the fact that the proposal doesn't include a container size.

Assembly Action:

None

Public Comments

Public Comment:

Marcelo M. Hirschler, (GBH International), requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

3304.2.1 Rubbish containers. ~~Where rubbish containers with a capacity exceeding 5.33 cubic feet (40 gallons) (0.15 m³) are used Containers with tight fitting or self closing lids shall be provided~~ for temporary storage of combustible debris, rubbish and waste material, ~~until the end of each shift of work they shall have tight fitting or self closing lids. The~~ Such rubbish containers shall be constructed entirely of materials that comply with either of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m² when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m² in the horizontal orientation.

Commenter's Reason: The technical committee did not disagree with the requirement but was concerned about the lack of a minimum size limit. The minimum size limit added is consistent with the size requirements in section 304.3 of the IFC. The fire safety requirements are consistent with those for large rubbish containers throughout the IFC. At present there are no fire safety requirements for rubbish containers in this application and that is the only IFC section lacking such requirements,

Final Hearing Results

F279-13

AMPC

Code Change No: F280-13

Original Proposal

Section(s): 3306.2 (New), Chapter 80

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

3306.2 Cleaning with flammable gas. Flammable gases shall not be used to clean or remove debris from piping open to the atmosphere.

3306.2.1 Pipe cleaning and purging. The cleaning and purging of flammable gas piping systems, including cleaning new or existing piping systems, purging piping systems into service, and purging piping systems out of service shall comply with NFPA 56.

Exceptions:

1. Compressed gas piping systems other than fuel gas piping systems where in accordance with Chapter 53.
2. Piping systems regulated by the *International Fuel Gas Code*.
3. Liquefied petroleum gas systems in accordance with Chapter 61.

Add a new referenced standard to Chapter 80 as follows:

NFPA

56-12 *Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems*
3306.2.1

Reason: In the past few years two explosions that killed 10 individuals were attributed to workers using natural gas flowing at high velocities to clean/clear fuel gas piping during the commissioning of fuel gas piping at industrial plants. The flammable gas and debris from the piping were subsequently vented to the atmosphere and ignited by sparks, one of which was suspected to be caused by static electricity. For details on the incidents see the U.S. Chemical Safety Board report at: <http://www.csb.gov/assets/document/KleenUrgentRec.pdf>

The practice of using flammable gases to clean or remove debris from fuel piping that is open to the atmosphere is not currently covered by the International Fire Code. This proposal revises Chapter 33 "Fire Safety During Construction and Demolition" requirements to prohibit this practice in piping systems open to the atmosphere.

The NFPA 56 *Provisional Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems* provides minimum safety requirements for the cleaning and purging of flammable gas piping systems, including cleaning new or existing piping systems, purging piping systems into service, and purging piping systems out of service. It includes the appropriate managerial and operational requirements necessary to ensure safe outcomes. NFPA 56 compliments the proposal and also does not allow flammable gases to be used for internal cleaning of piping open to the atmosphere.

The intent of the proposal is to address fire and explosion hazards with flammable gas piping that is typically found in electric generating plants and in industrial, institutional, and commercial applications.

It is not the intent of this proposal to cover cleaning or purging of (1) compressed gas piping systems other than fuel gas piping systems that comply with Chapter 53, (2) piping systems regulated by the International Fuel Gas Code, (3) liquefied petroleum gas systems that comply with Chapter 61, or (4) piping systems that are not open to the atmosphere.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Cost Impact: Approval of this change will increase the cost of flammable gas pipe purging because only inert or simple asphyxiant gases will be allowed.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 56-12, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of NFPA 56-12 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action: **Approved as Submitted**

Committee Reason: The committee approved the code change based on the proponent's reason statement and the loss history associated with the use of flammable gas for pipe purging. The proposal also provides correlation with the IFGC and NFPA 54.

Assembly Action: **None**

Final Hearing Results

F280-12

AS

Code Change No: **F281-13**

Original Proposal

Section(s): 3313.1 (IBC [F] 3311.1, IEBC [F] 1506.1)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

3313.1 (IBC [F] 3311.1, IEBC [F] 1506.1) Where required. In buildings required to have standpipes by Section 905.3.1, not less than one standpipe shall be provided for use during construction. Such standpipes shall be installed prior to construction exceeding ~~when the progress of construction is not more than~~ 40 feet (12 192 mm) in height above the lowest level of fire department vehicle access. Such standpipe shall be provided with fire department hose connections at accessible locations adjacent to usable stairs. Such standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This code change proposal is intended to clarify the requirement for the timing of the installation of a standpipe during construction. The intent of the existing language is to have the standpipe installed by the time construction reaches 40 feet. However, based on the wording of the section, the standpipe could be required as soon as construction exceeds one story.

The current language states that the standpipe shall be installed at the time when the construction is 40 feet or less. This section has been applied to buildings that are only 15 in height.

The intent seems to be that standpipes are installed when the construction extends beyond the reach of firefighting operations utilizing ground level hose streams and ground ladders.

The proposed revision to this section allows construction up to 40 feet in height, but requires the standpipe to be installed before continuing beyond 40 feet.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F281-12

AS

Code Change No: **F282-13**

Original Proposal

Section(s): 3510 (New), 202, 3504.1.7, 5704.2.7.6, Chapter 80

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

SECTION 3510 **HOT WORK ON FLAMMABLE AND COMBUSTIBLE LIQUID STORAGE TANKS**

3510.1 General. Hot work performed on the interior or the exterior of tanks that hold or have held flammable or combustible liquids shall be in accordance with 3510.2.1 through 3510.2.6 and Chapters 4,5,6,7 and 10 of NFPA 326.

3510.2 Prevention. The following steps shall be taken to minimize hazards when hot work must be performed on a flammable or combustible liquid storage container:

1. Use alternative methods to avoid hot work when possible
2. Analyze the hazards prior to performing hot work, identify the potential hazards and the methods of hazard control.
3. Hot work shall conform to the requirements of the code or standard to which the container was originally fabricated.
4. Test the immediate and surrounding work area with a combustible gas detector and provide for a means of continuing monitoring while conducting the hot work.
5. Qualified employees and contractors performing hot work shall use an industry approved hot work permit System to control the work.
6. Personnel shall be properly trained on hot work policies and procedures regarding equipment, safety, hazard controls and job specific requirements.
7. On-site safety supervision shall be present when hot work is in progress to protect the personnel conducting the hot work and provide additional overview of site specific hazards.

SECTION 202 **GENERAL DEFINITIONS**

COMBUSTIBLE GAS DETECTOR. An instrument that samples the local atmosphere and indicates the presence of ignitable vapors or gases within the flammable or explosive range expressed as a volume percent in air.

Revise as follows:

3504.1.7 Precautions in hot work. Hot work shall not be performed on containers or equipment that contains or has contained flammable liquids, gases or solids until the containers and equipment have been thoroughly cleaned, inerted or purged; except that "hot tapping" shall be allowed on tanks and pipe lines when such work is to be conducted by *approved* personnel. Hot work on flammable and combustible liquid storage tanks shall be conducted in accordance with Section 3510.

Revise as follows:

5704.2.7.6 Repair, alteration or reconstruction of tanks and piping. The repair, *alteration* or reconstruction, including ~~welding, cutting and hot tapping~~ of storage tanks and piping that have been placed in service, shall be in accordance with NFPA 30. Hot work, as defined in Section 202, on such tanks shall be conducted in accordance with Section 3510.

Add a new standard to Chapter 80:

NFPA

326- 2010 Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning or Repair.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

There are numerous Hot Work permit and policy guidelines for every industry. There have been numerous incidents documented involving loss of life, injury and property damage occurring when hot work has occurred and industry specific precautions where not followed or personnel did not understand the hazard or risk.

This change will improve the general guidelines in the IFC for safely conducting hot work. The only references to hot work on flammable and combustible tanks are in regards to IFC Chapter 3504.1.7 and Chapter 5706 as it pertains to bulk handling and refineries.

This proposal recognizes that API RP 2009, 2002 edition; Safe Welding and Cutting Practices in Refineries, Gas Plants and Petrochemical Plants, is adopted by reference specific to a particular application within industry. Interestingly API 2009 is a recommended practice and not a standard. I propose NFPA 326 be adopted as a viable standard to provide specific safety procedures for hot work on tanks that fall outside of the scope of IFC Chapter 57.

Additionally, the Chemical Safety Board has published general guidelines applicable to most every situation welding or cutting on flammable, combustible or toxic tanks occur and I have included those steps to consider within a new section in IFC chapter 35 so anyone referencing what to do to be safe has some direction and a significant pointer to the standard applicable for the work to be accomplished.

Cost Impact: This code change will not increase the cost of construction

Analysis: A review of the standard proposed for inclusion in the code, NFPA 326-10, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of NFPA 326/10 relative to CP#28, Section 3.6, please visit: <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and felt that the proposal provides needed regulation of these operations. The committee indicated that the reference to NFPA 326 in Section 3510.1 should be a general one, not a list of chapters

Assembly Action:

None

Final Hearing Results

F282-12

AS

Code Change No: **F283-13**

Original Proposal

Section(s): 3603.4

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

3603.4 Rubbish containers. ~~Metal containers with tight fitting or self-closing lids shall be provided for the temporary storage of combustible trash or rubbish. Containers with tight fitting or self-closing lids shall be provided for temporary storage of combustible debris, rubbish and waste material. The rubbish containers shall be constructed entirely of materials that comply with any one of the following:~~

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m² when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m² in the horizontal orientation.

Reason: Rubbish containers need not be constructed of metal but can be constructed of other noncombustible materials, including materials that have been shown to be safe by meeting a very severe fire test, just like those required by section 808 for I1, I2 and I3 occupancies. The key requirement that the lids be tight fitting or self closing is retained in the proposal. Note that the requirement covers all type of rubbish and is not intended to address spills of combustible or flammable liquids, covered by 3603.3. The use of the phrase "combustible debris, rubbish and waste material" makes this section consistent with other sections of the IFC.

Cost Impact: This should lower costs by offering more alternatives.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and felt that the proposal provides more options with regard to container types.

Assembly Action:

None

Final Hearing Results

F283-12

AS

Code Change No: F284-13

Original Proposal

Section(s): 5001.1, Table 5003.1.1(1) [IBC [F] 307.1(1)], Table 5003.1.1(2) [IBC [F] 307.1(2)]; 5701.2

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

5001.1 Scope. Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter.

This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that when specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.

Exceptions:

1. In retail or wholesale sales occupancies, the quantities of medicines, foodstuffs, ~~or consumer or industrial~~ products and cosmetics containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable shall not be limited, provided such materials are packaged in individual containers not exceeding 1.3 gallons (5 L).
- 2 through 11 *(No change to current text)*

TABLE 5003.1.1(1) [IBC [F] 307.1(1)] MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD^{a, j, m, n, p}

(No changes to table)

For SI: 1 cubic foot = 0.02832 m³, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

- a. For use of control areas, see Section 5003.8.3.
- b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
- c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited providing the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, ~~or consumer or industrial~~ products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
- d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.

TABLE 5003.1.1(2) [IBC [F] 307.1(2)] MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD^{a, b, c, h, i}

(No changes to table)

For SI: 1 cubic foot = 0.02832 m³, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

- a. For use of control areas, see Section 5003.8.3.
- b. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, ~~or consumer or industrial~~ products, and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.

c through i (No changes to current text)

5701.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:

1. Specific provisions for flammable liquids in motor fuel-dispensing facilities, repair garages, airports and marinas in Chapter 23.
2. Medicines, foodstuffs, cosmetics, and commercial, or institutional ~~and industrial~~ products containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solution not being flammable, provided that such materials are packaged in individual containers not exceeding 1.3 gallons (5 L).
3. through 10. (No change to current text.)

Reason: The term "Industrial products" can apply to anything. A wholesaler of car and truck batteries containing sulfuric acid [e.g. exceeding the MAQs for Toxic and Corrosive liquids] would be exempt by this definition. The original intent of this code section is to exempt materials in smaller containers in occupancies such as supermarkets and pharmacies the small amounts of water-miscible hazardous materials [e.g. household bleach, make up, face toners, etc.] contribute negligible amounts of fuel to a fire.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F284-12

AS

Code Change No: F288-13

Original Proposal

Section(s): Table 5003.1.1(1) [IBC [F] TABLE 307.1(1)]; IBC [F] 307.5 (IFC 202)

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (BFICOCs) (rjd@davidsoncodeconcepts.com)

Revise as follows:

**TABLE 5003.1.1(1) [IBC [F] TABLE 307.1(1)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING
A PHYSICAL HAZARD^{a, j, m, n, p}**

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)
Combustible dust	Not Applicable	H-2	See Note q	Not Applicable	Not Applicable	See Note q	Not Applicable	Not Applicable	See Note q	Not Applicable
Combustible fiber ^a	Loose Baled ^o	H-3	(100) (1,000)	Not Applicable	Not Applicable	(100) (1,000)	Not Applicable	Not Applicable	(20) (200)	Not Applicable

(Portions of table not shown remain unchanged)

a. through p. *(No change to current text)*

q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 104.7.2 (IBC [F] 414.1.3).

Revise as follows:

IBC [F] 307.5 (IFC 202) High-hazard Group H-3. Buildings and structures containing materials that readily support combustion or that pose a physical hazard shall be classified as Group H-3. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103.4 kPa) or less

Combustible fibers, other than densely packed baled cotton, where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.

- Consumer fireworks, 1.4G (Class C, Common)
- Cryogenic fluids, oxidizing
- Flammable solids
- Organic peroxides, Class II and III
- Oxidizers, Class 2

Oxidizers, Class 3, that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103 kPa) or less
Oxidizing gases
Unstable (reactive) materials, Class 2
Water-reactive materials, Class 2

Reason: "Operations involving combustible fibers are typically associated with salvage, paper milling, recycling, cloth manufacturing, carpet and textile mills and agricultural operations, among others. The primary hazard associated with these operations is the abundance of materials and their ready ignitability. These so-called "Rag Districts," where cloth scrap and clippings are collected and separated for reuse in paper manufacturing, have been associated with catastrophic conflagrations as recently as the 1970s."

IFC Code Commentary:

The main hazard of combustible fibers is the ignitability of the product with rapid flame spread over exposed material surfaces. There can also be an associated combustible dust hazard depending on how the material is being handled. Currently, Section 5203.5 requires protection against combustible dust hazards by reference to IFC Chapter 22 "Combustible Dust-Producing Operations". The combustible dust hazard can, and in most cases would, present a greater hazard than the fiber ignitability hazard. If a facility complies with IFC Chapter 22 along with referenced standards and the combustible dust hazard is eliminated, "note q" added to Table 5003.1.1(1) / [F] TABLE 307.1(1) in the 2012 edition of the IFC/IBC eliminates the Group H-2 designation for the combustible dust hazard. However, there is no similar provision for the ignitability hazard of the fibers. If the combustible fibers are not manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard, then there should be a similar provision eliminating the H Group classification for the combustible fibers, a lesser hazard than the combustible dust. In many cases compliance with the reference to IFC Chapter 22 will eliminate the combustible fiber hazard as the combustible dust hazard is controlled.

This proposal adds note q to the entry in the tables for combustible fibers to eliminate the Group H-3 classification where it has been documented that when the fibers are being generated, stored or used, it is not in such a manner that the concentration and conditions create a fire or explosion hazard. The same language is also added to the Combustible fibers subdivision classification at IBC Section [F]307.5 as was done for combustible dust in code change F187-09/10.

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCS was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers.

Fire codes related to storage, handling, and preprocessing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and preprocessing technologies, the BFICOCS has identified changes in the IFC that benefit industry and the public.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F288-12

AS

Code Change No: **F289-13**

Original Proposal

Section(s): Table 5003.1.1(1) [IBC [F] Table 307.1(1)]

Proponent: Glenn A. Dean, Virginia State Fire Marshal's Office (glenn.dean@vdfp.virginia.gov)

Revise as follows:

**TABLE 5003.1.1(1) (IBC [F] Table 307.1(1))
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING
A PHYSICAL HAZARD^{a, j, m, n, p}**

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)
Consumer fireworks	1.4G	H-3	125 d, e, l	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

(Portions of table not shown remain unchanged)

Reason: Based on an October 2007 report entitled "Fire Safety in Consumer Fireworks Storage and Retail Facilities – Hazard Assessment", the NFPA Standards Council began a lengthy discussion on the amount of consumer fireworks that should be effectively permitted in retail establishments and some the built-in safety requirements that should be associated with that amount. To date the effective allowable amount in the NFPA standards has been 125 pounds net with an available increase to 250 pounds if the building is protected throughout with an approved automatic sprinkler system installed in accordance with NFPA 13. This same provision is mirrored in the IFC in all respects for the maximum allowable quantity of consumer fireworks, including the increase for sprinkler protection, and like the IFC, to allow a building to contain more than that, the NFPA standard would require additional construction requirements akin to those for a Group H-3 building.

Beginning with the October 2007 report, the NFPA Standards Council has since called into question the appropriateness and reasoning of an increase based on sprinkler protection in the absence of test data justifying the increase. Because of the lack of test data to determine at what level or quantity of consumer fireworks above 125 pounds net could or should have the benefit of sprinkler protection, the Standards Council has ordered the issuance of a Tentative Interim Amendment (TIA), in process at the time of this submission, eliminating the option of an increase for sprinkler protection until such time as acceptable test data is submitted to justify an increase and to what level of increase it could be. Therefore, due to the TIA, the maximum amount of consumer fireworks in the NFPA standard for retail establishments is limited to 125 pounds net. There will be no provision for increasing the amount due to sprinkler protection. In addition, with the TIA the maximum size of consumer firework storage buildings will be limited to 12,000ft² in area. Full background information may be found at the document information tab at www.nfpa.org/1124.

For the same reasons, until such time as testing is completed, or if ever completed, this change is to delete the reference to footnote "d" that provided a 100% increase to the amount of consumer fireworks allowed if sprinkler protection is provided, when it has been revealed that the original increase was not based on a credible, verifiable series of tests to determine what the appropriate sprinkler design density should be for what may be typical of the quantities of consumer fireworks present in retail establishments and still not become a Group H-3 building.

Cost Impact: Cost of construction may increase.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the absence of sprinkler test data to justify the continued increase in MAQ in sprinklered buildings.

Assembly Action:

None

Final Hearing Results

F289-12

AS

Code Change No: F290-13

Original Proposal

Section(s): Table 5003.1.1(1) [IBC [F] Table 307.1(1)], 5003.8.4

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Lonza Group and PPG Industries, Inc.(pmclaugma@aol.com)

Revise as follows:

**TABLE 5003.1.1(1) (IBC [F] Table 307.1(1))
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING
A PHYSICAL HAZARD^{a, j, m, n, p}**

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)
Unstable (reactive)	4	H-1	1 ^{e, g}	(1) ^{e, g}	10 ^{e, g}	0.25 ^g	(0.25) ^g	2 ^{e, g}	0.25 ^g	(0.25) ^g
	3	H-1 or H-2	5 ^{d, e}	(5) ^{d, e}	50 ^{d, e}	1 ^d	(1) ^d	10 ^{d, e}	1 ^d	(1) ^d
	2	H-3	50 ^{d, e}	(50) ^{d, e}	250	50 ^d	(50) ^d	250	10 ^d	(10) ^d
	1	Not Applicable	Not Limited	Not Limited	750 ^{d, e}	Not Limited	Not Limited	750 ^{d, e}	Not Limited	Not Limited

(Portions of table not shown remain unchanged.)

a through d (No change to current text)

e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets, gas rooms, exhausted enclosures, or listed safety cans. Listed safety cans shall be in accordance with Section 5003.9.10. Where Note d also applies, the increase for both notes shall be applied accumulatively.

f through q (No change to current text)

5003.8.4 Gas rooms. Where a gas room is used to increase maximum allowable quantity per control area or provided to comply with the provisions of Chapter 60, the gas room shall be in accordance with Sections 5003.8.4.1 and 5003.8.4.2.

Reason: The 250 cubic feet appears to be a transcription error as it was taken from the Uniform Fire Code which allowed 750 cubic feet. The change will bring the IFC into alignment with NFPA 55, 2010 and 2013 Editions.

Gas rooms are required to be protected by automatic sprinklers, separated based on the occupancy, and have ventilation designed to operate at a negative pressure. These requirements are similar to those that apply to exhausted enclosures which allow the quantity increase. Section 5003.8.4 is modified to insure that the requirements apply if footnote e is used to increase maximum allowable quantities. Accepting this change will bring consistency between the requirements for gas cabinets, exhausted enclosures, and gas rooms with respect to application and MAQ.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F290-12

AS

Code Change No: F292-13

Original Proposal

Section(s): Table 5003.1.1(1), Table 5003.1.1(2); IBC [F] Table 307.1(1), [F] Table 307.1(2)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise IFC Table 5003.1.1(1) as follows:

Editorial Revision: Replace all entries in table which state “Not Applicable” with “N/A”.

Editorial Revision: Replace all entries in table which state “Not Limited” with “NL”.

Editorial Revision: Add the following line at the bottom of the table above the Footnotes:
“N/A = Not Applicable; NL = Not Limited; UD = Unclassified Detonable”

Further revise IFC Table 5003.1.1(1) as follows:

TABLE 5003.1.1(1)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD^{a, j,}
m, n, p

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)
Combustible dust	N/A	H-2	Note q	N/A	N/A	Note q	N/A	N/A	Note q	N/A
Combustible fiber	Loose Baled ^o	H-3	(100) (1,000)	N/A	N/A	(100) (1,000)	N/A	N/A	(20) (200)	N/A
Combustible liquid ^{c, i}	II IIIA IIIB	H-2 or H-3 H-2 or H-3 N/A	N/A	120 ^{d, e} 330 ^{d, e} 13,200 ^{e, f}	N/A	N/A	120 ^d 330 ^d 13,200 ^f	N/A	N/A	30 ^d 80 ^d 3,300 ^f
Consumer fireworks	1.4G	H-3	125 ^{d, e, i}	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cryogenic Flammable	N/A	H-2	N/A	45 ^d	N/A	N/A	45 ^d	N/A	N/A	10 ^d
Consumer fireworks	1.4G	H-3	125 ^{d, e, i}	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cryogenic Inert	N/A	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Cryogenic Oxidizing	N/A	H-3	N/A	45 ^d	N/A	N/A	45 ^d	N/A	N/A	10 ^d
Explosives	Division 1.1	H-1	1 ^{e, g}	(1) ^{e, g}	N/A	0.25 ^g	(0.25) ^g	N/A	0.25 ^g	(0.25) ^g
		H-1	1 ^{e, g}	(1) ^{e, g}	N/A	0.25 ^g	(0.25) ^g	N/A	0.25 ^g	(0.25) ^g
	Division 1.2	H-1 or H-2	5 ^{e, g}	(5) ^{e, g}	N/A	1 ^g	(1) ^g	N/A	1 ^g	(1) ^g
		H-3	50 ^{e, g}	(50) ^{e, g}	N/A	50 ^g	(50) ^g	N/A	N/A	N/A
	Division 1.3	H-3	125 ^{d, e, i}	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		H-1	1 ^{e, g}	(1) ^{e, g}	N/A	0.25 ^g	(0.25) ^g	N/A	0.25 ^g	(0.25) ^g
	Division 1.4	H-1	1 ^{e, g}	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Division 1.4G									
Division 1.5										
Division										

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)
	1.6									
Flammable gas	Gaseous Liquefied	H-2	N/A	N/A (150) ^{d,e}	1,000 ^{d,e} N/A	N/A	N/A (150) ^{d,e}	1,000 ^{d,e} N/A	N/A	N/A
Flammable liquid ^c	1A and 1B and 1C	H-2 or H-3	N/A	30 ^{d,e} 120 ^{d,e}	N/A	N/A	30 ^d 120 ^d	N/A	N/A	10 ^d 30 ^d
Flammable liquid, combination (1A, 1B, 1C)	N/A	H-2 or H-3	N/A	120 ^{d,e,h}	N/A	N/A	120 ^{d,h}	N/A	N/A	30 ^{d,h}
Flammable solid	N/A	H-3	125 ^{d,e}	N/A	N/A	125 ^d	N/A	N/A	25 ^d	N/A
Inert gas	Gaseous Liquefied	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Cryogenic inert	N/A	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Organic peroxide	UD	H-1	1 ^{e,g}	(1) ^{e,g}	N/A	0.25 ^g	(0.25) ^g	N/A	0.25 ^g	(0.25) ^g
	I	H-2	5 ^{d,e}	(5) ^{d,e}	N/A	1 ^d	(1) ^d	N/A	1 ^d	(1) ^d
	II	H-3	50 ^{d,e}	(50) ^{d,e}	N/A	50 ^d	(50) ^d	N/A	10 ^d	(10) ^d
	III	H-3	125 ^{d,e}	(125) ^{d,e}	N/A	125 ^d	(125) ^d	N/A	25 ^d	(25) ^d
	IV	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
V	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL	
Oxidizer	4	H-1	1 ^{e,g}	(1) ^{e,g}	N/A	0.25 ^g	(0.25) ^g	N/A	0.25 ^g	(0.25) ^g
	3 ^k	H-2 or H-3	10 ^{d,e}	(10) ^{d,e}	N/A	2 ^d	(2) ^d	N/A	2 ^d	(2) ^d
	2	H-3	250 ^{d,e}	(250) ^{d,e}	N/A	250 ^d	(250) ^d	N/A	50 ^d	(50) ^d
	1	N/A	4,000 ^{e,f}	(4,000) ^{e,f}	N/A	4,000 ^f	(4,000) ^f	N/A	1,000 ^f	(1,000) ^f
Oxidizing gas	Gaseous Liquefied	H-3	N/A	N/A (150) ^{d,e}	1,500 ^{d,e} N/A	N/A	N/A (150) ^{d,e}	1,500 ^{d,e} N/A	N/A	N/A
Pyrophoric	N/A	H-2	4 ^{e,g}	(4) ^{e,g}	50 ^{e,g}	1 ^g	(1) ^g	10 ^{e-g}	0	0
Unstable (reactive)	4	H-1	1 ^{e,g}	(1) ^{e,g}	10 ^g	0.25 ^g	(0.25) ^g	2 ^{e,g}	0.25 ^g	(0.25) ^g
	3	H-1 or H-2	5 ^{d,e}	(5) ^{d,e}	50 ^{d,e}	1 ^d	(1) ^d	10 ^{d,e}	1 ^d	(1) ^d
	2	H-3	50 ^{d,e}	(50) ^{d,e}	250 ^{d,e}	50 ^d	(50) ^d	250 ^{d,e}	10 ^d	(10) ^d
	1	N/A	NL	NL	NL	NL	NL	NL	NL	NL
Water reactive	3	H-2	5 ^{d,e}	(5) ^{d,e}	N/A	5 ^d	(5) ^d	N/A	1 ^d	(1) ^d
	2	H-3	50 ^{d,e}	(50) ^{d,e}	N/A	50 ^d	(50) ^d	N/A	10 ^d	(10) ^d
	1	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL

For SI: 1 cubic foot = 0.02832 m³, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

N/A = Not Applicable; NL = Not Limited; UD = Unclassified Detonable

- For use of control areas, see Section 5003.8.3.
- The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
- The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited providing the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
- Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied cumulatively.
- Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets, exhausted enclosures, or in listed safety cans. ~~Listed safety cans shall be~~ in accordance with Section 5003.9.10. Where Note d also applies, the increase for both notes shall be applied cumulatively.
- Quantities shall not be limited in a building equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.
- Allowed only in buildings equipped throughout with an approved automatic sprinkler system.
- Containing not more than the maximum allowable quantity per control area of Class IA, Class IB or Class IC flammable liquids.
- The maximum allowable quantity shall not apply to fuel oil storage complying with Section 603.3.2.
- Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.

- k. A maximum quantity of 200 pounds of solid or 20 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment when the storage containers and the manner of storage are approved.
- l. Net weight of pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks including packaging shall be used.
- m. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2.
- n. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 5003.11, see Table 5003.11.1.
- o. Densely-packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.
- p. The following shall not be included in determining the maximum allowable quantities:
 1. Liquid or gaseous fuel in fuel tanks on vehicles.
 2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with this code.
 3. Gaseous fuels in piping systems and fixed appliances regulated by the *International Fuel Gas Code*.
 4. Liquid fuels in piping systems and fixed appliances, regulated by the *International Mechanical Code*.
- q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 104.7.2.

Revise IFC Table 5003.1.1(2) as follows:

TABLE 5003.1.1(2)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD^{a, b, c, f, h, i}

MATERIAL	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b	
	Solid pounds ^{d,e}	Liquid gallons (pounds) ^{d,e}	Gas (cubic feet at NTP) ^d	Solid pounds (cubic feet) ^d	Liquid gallons (pounds) ^d	Gas (cubic feet at NTP) ^d	Solid pounds (cubic feet) ^d	Liquid gallons (pounds) ^d
Corrosive	5,000	500	Gaseous 810 ^e Liquefied (150)	5,000	500	Gaseous 810 ^e Liquefied (150)	1,000	100
Highly toxic	10	(10)	Gaseous 20 ^g Liquefied (4) ^g	10	(10)	Gaseous 20 ^g Liquefied (4) ^g	3	(3)
Toxic	500	(500)	Gaseous 810 ^e Liquefied (150) ^e	500	(500)	Gaseous 810 ^e Liquefied (150) ^e	125	(125)

For SI: 1 cubic foot = 0.02832 m³, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

- a. For use of control areas, see Section 5003.8.3.
- b-c. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
- e-f. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 5003.1.1, see Table 5003.11.1.
- d-b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
- e-d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1. Where Note f also applies, the increase for both notes shall be applied accumulatively.
- f-e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, gas cabinets or exhausted enclosures as specified in the *International Fire Code*. Where Note e also applies, the increase for both notes shall be applied accumulatively.
- g. Allowed only when stored in approved exhausted gas cabinets or exhausted enclosures as specified in the *International Fire Code*.
- h. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
- i. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2.

Revise IBC Table [F] 307.1(1) as follows:

Delete the table and replace with Table 5003.1.1(1) from the IFC.

Revise Footnotes to IBC Table [F] 307.1(1) as follows:

For SI: 1 cubic foot = 0.02832 m³, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

NL = Not Limited; N/A = Not Applicable; UD = Unclassified Detonable

- a. For use of control areas, see Section 414.2.
- b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.

- c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited provided the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
- d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.
- e. Maximum allowable quantities shall be increased 100 percent when stored in *approved* storage cabinets, day boxes, gas cabinets or exhausted enclosures or in *listed* safety cans in accordance with Section 5003.9.10 of the *International Fire Code*. Where Note d also applies, the increase for both notes shall be applied accumulatively.
- f. ~~The permitted quantities~~ Quantities shall not be limited in a building equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
- g. ~~Permitted-Allowed~~ only in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
- h. Containing not more than the maximum allowable quantity per *control area* of Class IA, IB or IC flammable liquids.
- i. The maximum allowable quantity shall not apply to fuel oil storage complying with Section 603.3.2 of the *International Fire Code*.
- j. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
- k. A maximum quantity of 200 pounds of solid or 20 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment. ~~Storage containers and the manner of storage shall be approved when the storage containers and the manner of storage are approved.~~
- l. Net weight of the pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks, including packaging, shall be used.
- M For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2 of the *International Fire Code*.
- n. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).
- o. Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.
- p. The following shall not be included in determining the maximum allowable quantities:
 1. Liquid or gaseous fuel in fuel tanks on vehicles.
 2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with ~~this code~~ *International Fire Code*.
 3. Gaseous fuels in piping systems and fixed appliances regulated by the *International Fuel Gas Code*.
 4. Liquid fuels in piping systems and fixed appliances regulated by the *International Mechanical Code*.
- q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.

Revise IBC Table 307.1(2) as follows:

Delete the table and replace with Table 5003.1.1(2) from the IFC.

Revise Footnotes to IBC Table [F] 307.1(2) as follows:

For SI: 1 cubic foot = 0.02832 m³, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

- a. For use of control areas, see Section 414.2.
- ~~b.c.~~ In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
- ~~e.f.~~ For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).
- ~~d.b.~~ The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
- ~~e.d.~~ Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1. Where Note f also applies, the increase for both notes shall be applied accumulatively.
- ~~f.e.~~ Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, gas cabinets or exhausted enclosures as specified in the *International Fire Code*. Where Note e also applies, the increase for both notes shall be applied accumulatively.
- g. Allowed only when stored in approved exhausted gas cabinets or exhausted enclosures as specified in the *International Fire Code*.
- h. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
- i. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2 of the *International Fire Code*.

Reason: Correlation between these sets of tables in the IFC and IBC is critical. There is no reason that the tables need to be formatted differently or contain different wording. This proposal does not change any requirements in the codes. It is editorial in nature and is designed to provide uniformity and consistency for the requirements found in the sets of tables.

Items 1 and 2 are editorial and only simplify the table.

Item 3 is needed to correlate with revisions made in Items 1 and 2.

Item 4 alphabetizes the listings in the table and provides consistency in the header of the table. The revisions in the footnotes provide identical wording to the wording in the IBC.

Item 5 restructures the footnotes to provide consistency for both the Health Hazard table and the Physical Hazard table.

Item 6 duplicates the table from the IFC into the IBC.

Item 7 provides identical wording for the footnotes in the IBC as is found in the IFC.

Item 8 duplicates the table from the IFC into the IBC.

Item 9 provides identical wording for the footnotes in the IBC as is found in the IFC.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F292-12

AS

Code Change No: F293-13

Original Proposal

Section(s): Table 5003.1.1(3)

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

TABLE 5003.1.1(3)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING
A PHYSICAL HAZARD IN AN OUTDOOR CONTROL AREA^{a, b, c, d}

MATERIALS	CLASS	STORAGE ^b			USE-CLOSED SYSTEM ^b			USE-OPEN SYSTEM ^b	
		Solid Pounds (cubic feet)	Liquid gallons (pounds) ^d	Gas cubic feet at NTP	Solid Pounds (cubic feet)	Liquid gallons (pounds) ^d	Gas cubic feet at NTP	Solid Pounds (cubic feet)	Liquid gallons (pounds) ^d
Unstable (reactive)	4	2	(2)	20	1	(1)	2	0.25	(0.25)
	3	20	(20)	200	10	(10)	10	1	1 (1)
	2	200	(200)	1,000	100	(100)	250	10	10 (10)
	1	Not Limited	Not Limited	1,500	Not Limited	Not Limited	Not Limited	Not Limited	Not Limited
		Limited	Limited	Limited	Limited	Limited	Limited	Limited	Limited

(Portions of the table not shown remain unchanged)

Reason: The amounts throughout the table are based on a conversion of 10 pounds per 1 gallon. Based on this conversion, effectively 10 times the amounts of water reactive 2 and 3 liquids in open system use are allowed than solids in the current table. Adding the parenthesis is to bring consistency in the requirements.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F293-12

AS

Code Change No: F294-13

Original Proposal

Section(s): 5003.2.1

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

Revise as follows:

5003.2.1 Design and construction of containers, cylinders and tanks. Containers, cylinders and tanks shall be designed and constructed in accordance with *approved* standards. Containers, cylinders, tanks and other means used for containment of hazardous materials shall be of an *approved* type. Pressure vessels not otherwise regulated by this code shall comply with the ASME *Boiler and Pressure Vessel Code*.

Reason: The addition of the reference to the ASME Boiler and Pressure Vessel Code in the 2012 edition has added confusion to the IFC. A 'pressure vessel' is defined as "A closed vessel designed to operate at pressures above 15 psig (103 kPa)." This is not aligned with the requirements in the previous sentence, which states a "cylinder" (which is a closed vessel that has pressures higher than 40 psig and has a circular cross-section) shall be of an approved type. Nowhere in the code does it state that a cylinder is not a pressure vessel.

The proposal adds language to minimize confusion about applicable sections found in the product-specific hazardous materials chapters, such as 5301.2 for compressed gases and 6101.1 for the use of NFPA for liquefied petroleum gases. It is important to keep the allowance for approved types of containers, cylinders, tanks, and other means, even when it comes to pressurized storage components, since ASME is not the only standard for design. US Department of Transportation regulates pressurized storage components that are transported over public roads (The DOT specification). DOT differs from ASME in construction specifications as well as maintenance and testing. A vast majority of cylinders used to store common materials like propane, medical oxygen, carbon dioxide, helium, and compressed air are in DOT cylinders, not ASME.

This proposal is submitted with the endorsement of the New York State Building Officials Conference, the New York State Fire Marshals and Inspectors Association, and the Association of Fire Districts of New York State.

Cost Impact: This change is a clarification and has no cost impact.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

5003.2.1 Design and construction of containers, cylinders and tanks. Containers, cylinders and tanks shall be designed and constructed in accordance with *approved* standards. Containers, cylinders, tanks and other means used for containment of hazardous materials shall be of an *approved* type. Pressure vessels ~~not otherwise regulated by this code~~ meeting DOTn requirements for transportation shall comply with the ASME *Boiler and Pressure Vessel Code*.

Committee Reason: The committee approved the code change based on its general agreement with the proponent's reason statement but modified the code change to delete what the committee felt was vague text and replace it with a needed reference to the correct body of regulations.

Assembly Action:

None

Final Hearing Results

F294-13

AM

Code Change No: F298-13

Original Proposal

Section(s): IFC: 5004.7; IBC [F] 414.5.3

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

IFC 5004.7 Standby or emergency power. Where mechanical ventilation, treatment systems, temperature control, alarm, detection or other electrically operated systems are required, such systems shall be provided with an emergency or standby power system in accordance with NFPA 70 and Section 604.

Exceptions:

1. Emergency or standby power are not required for the following:
 - ~~1.~~ 1.1. Mechanical ventilation for storage of Class IB and Class IC flammable and combustible liquids in closed containers not exceeding ~~6 1/2~~ 6.5 gallons (25 L) capacity.
 - ~~2.~~ 1.2. Storage areas for Class 1 and 2 oxidizers.
 - ~~3.~~ 1.3. Storage areas for Class II, III, IV and V organic peroxides.
 - ~~4.~~ 1.4. Storage areas for asphyxiant, irritant and radioactive gases.
 - ~~5.~~ For storage areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2.
 - ~~6.~~ Standby power for mechanical ventilation, treatment systems and temperature control systems shall not be required where an approved fail-safe engineered system is installed.

For storage and use areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2.

IBC [F] 414.5.3 Emergency or standby power. Where mechanical ventilation, treatment systems, temperature control, alarm, detection or other electrically operated systems are required by the International Fire Code or this code, such systems shall be provided with an emergency or standby power system in accordance with Chapter 27.

Exceptions:

1. Emergency or standby power are not required for the following ~~storage areas:~~
 - 1.1. Mechanical ventilation for storage of Class IB and Class IC flammable and combustible liquids in closed containers not exceeding 6.5 gallons (25 L) capacity.
 - 1.2. Storage areas for Class 1 and 2 oxidizers.
 - 1.3. Storage areas for Class II, III, IV and V organic peroxides.
 - 1.4. Storage, use and handling areas for asphyxiant, irritant and radioactive gases.
 - ~~1.5. For storage, use and handling areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2 of the International Fire Code.~~
2. Standby power for mechanical ventilation, treatment systems and temperature control systems shall not be required where an approved fail-safe engineered system is installed.

For storage and use areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2 of the International Fire Code.

Reason: This proposal is intended to correlate the IBC requirements with the requirements in the IFC. Section 414.5.3 in the IBC should be the same as Section 5004.7 in the IFC. However, there are slight differences. This proposal will correct those differences and provide consistency between the codes.

The revisions in IFC Section 5004.7 and IBC Section 414.5.3 are based on the following:

1. Item 1 is duplicated from the IBC and placed into the IFC. The item is revised so that it is not limited to storage. This is consistent with the following text in Item 1.4 which currently addresses use and handling areas.
2. The items are renumbered as subsections consistent with the IBC format.
3. Item 1.4 is relocated as a second paragraph in the section. This provision is not an exception, it does not eliminate emergency or standby power, but rather it adds additional criteria. This is further confirmed by IFC Section 604.2.11 which states "Emergency power shall be provided for occupancies with highly toxic or toxic materials in accordance with Sections 6004.2.2.8 and 6004.3.4.2."

These two sections are then consistent and correlate with the other requirements found in the IFC and IBC. There is no change in requirements.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement and that the code change would improve correlation with the IBC.

Assembly Action:

None

Final Hearing Results

F298-12

AS

Code Change No: **F299-13**

Original Proposal

Section(s): 5104.1, 5104.1.1 (New), 202 (IBC [F] 202)

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Consumer Specialty Products Association (pmclaugma@aol.com)

Revise as follows:

5104.1 General. The inside storage of Level 2 and 3 aerosol products shall comply with Sections 5104.2 through 5104.7 and NFPA 30B. Level 1 aerosol products and those aerosol products covered by Section 5104.1.1 shall be considered equivalent to a Class III commodity and shall comply with the requirements for palletized or rack storage in NFPA 13.

5104.1.1 Aerosol products in plastic containers larger than 118 ml (4 fl. oz.) shall be considered to be equivalent to Class III commodities, as defined in NFPA 13, *Standard for the Installation of Sprinkler Systems*, where any of the following conditions are met:

1. Base product has no fire point when tested in accordance with ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester*, and nonflammable propellant.
2. Base product has no sustained combustion as tested in accordance with "Method of Testing for Sustained Combustibility", Title 49 Code of Federal Regulations, Part 173, Appendix H, and nonflammable propellant.
3. Base product contains up to 20% by volume (15.8% by weight) of ethanol and/or isopropyl alcohol in an aqueous mix, and nonflammable propellant.
4. Base product contains 4% by weight or less of an emulsified flammable liquefied gas propellant within an aqueous base. The propellant shall remain emulsified for the life of the product. Where such propellant is not permanently emulsified then the propellant shall be nonflammable.

SECTION 202 (IBC [F] 202) GENERAL DEFINITIONS

AEROSOL CONTAINER. A metal can, or a glass or plastic bottle designed to dispense an aerosol. Metal cans or plastic containers shall be limited to a maximum size of 33.8 fluid ounces (1000 ml). Glass ~~or plastic~~ bottles shall be limited to a maximum size of 4 fluid ounces (118 ml).

Reason: A significant amount of new research has been completed on aerosol products in plastic containers that clearly defines a "low hazard" version of the product that can be stored in general purpose warehouses without significantly increasing the fire hazard. The following discussion provides an overview of the work that was done and the conclusions from the effort.

1) Aerosol Products in Plastic Containers – Propellant: Nonflammable; Base: Liquid Content that Does not Support Combustion

The fire hazard created by aerosol products in metal containers is driven by their propellant and the liquid content. An aerosol product that contains a nonflammable propellant and a liquid content that does not support combustion would have a Chemical Heat of Combustion of 0 kJ/g and be classified as a Level 1 aerosol product. Level 1 aerosols are protected using the same protection criteria needed for Class III commodities provided by NFPA 13.

The fire hazard of an aerosol product in a plastic container cannot be directly compared to aerosol products in metal containers. However, using commodity classification information for plastic containers filled with liquids that do not burn supports proposing a protection level for equivalent aerosol products. In this case, the content of the aerosol would not contribute to a fire. Only the primary (plastic container) and secondary (carton) packaging would contribute. If the aerosol was not pressurized, it would directly compare to products listed in NFPA 13 Annex A and FM Global Property Loss Prevention Data Sheet 8-1 as shown below.

NFPA 13 Annex A

Table A.5.6.3

Milk in Plastic – Class I
Bottles, Jars / Filled noncombustible liquids / Plastic, PET – Class I

FM Global Property Loss Prevention Data Sheet 8-1

2.2.2.2 Examples of Class I Commodities

4. Other – Noncombustible liquids in 5 gal (19 l) or smaller plastic containers

Both standards treat a plastic container filled with a liquid that does not burn as a Class I commodity. The addition of a nonflammable propellant to a plastic container will not change the burning properties of the commodity (it may result in a violent rupture with no change in burning rates or severity). The above discussion would point to classifying the aerosol products in plastic containers charged with a nonflammable propellant and liquid that does not burn as a Class I commodity. However, in an effort to provide consistency in the protection of aerosols, the protection proposal targets using the same protection currently recommended for Level 1 aerosols.

2) Aerosol Products in Plastic Containers – Propellant: Nonflammable; Base: Liquid Content Consists of up to 20% Ethanol or Isopropyl Alcohol in Aqueous Solution

An aerosol product in a plastic container that contains a liquid that burns will create a fire hazard at least as severe as the same liquid in an unpressurized plastic container. The fire hazard may increase because the container is pressurized and will definitely increase if it is pressurized with a flammable propellant. As the fire hazard of the aerosol's content increases, the fire hazard of the actual aerosol will increase as well. If on the other hand, the aerosol product in a plastic container was charged with liquid components that can easily be protected in an unpressurized plastic container, similar to the discussion under item 1, there is a good chance that the aerosol products in plastic containers can be protected with a similar level of protection. The only question might be the impact of adding nonflammable propellant.

FM Global has developed protection criteria for several alcohol water mixtures in plastic bottles. The alcohols used in the testing are ethanol and isopropyl alcohol. The mixtures ranged from 100% alcohol (approximate) down to 20% by volume alcohol/80% by volume water. The 20% alcohol/80% water mixture in a plastic bottle in cartons was tested in a full-scale array with the overview of the test presented in Table 1. This alcohol/water mixture does have a definable fire point; however, it produces unstable burning.

Table 1. FM Global Test Summary

Fire Test Summary – Diluted Alcohol Test Series		
Test Number		5
Test Date		1-19-99
Test Parameters	Commodity	20% isopropyl alcohol / 80% water in a 1 pint [470 ml] plastic container in cartons
	Storage Arrangement	Rack
	Storage Height (ft) [m]	Nominal 20 [6.1]
	No. Tiers	4
	Ceiling Height (ft) [m]	30 [9.1]
	Aisle Width (ft) [m]	8 [2.4]
	Sprinkler Type (K factor gpm/psi ^{0.5} [L/min/bar ^{0.5}], Temperature Rating)	K 5.6 [81] / 286°F [140°C] / Standard Response
	Sprinkler Spacing (ft x ft) [m x m]	10 x 10 [3.0 x 3.0]
Discharge Density (gpm/ft ²) [mm/min]	0.30 [12]	
Test Results	First Sprinkler Operated (min:sec)	21:56
	Total Sprinklers Operated	2
	Peak Gas Temperature (°F) [°C]	585°F [307]
	Peak Steel Temperature (°F) [°C]	189°F [87.2]
	Test Concluded (min:sec)	30:00

Based on the results of this test, FM Global has recommended protecting 20%_{vol} alcohol/80%_{vol} water mixtures in plastic bottles with the same protection recommended for liquids that do not burn in plastic containers, i.e., Class I commodity. A final question is does pressurizing a plastic container filled with a 20%_{vol} alcohol/80%_{vol} water mixture with nonflammable propellant change the burning properties of the product.

Since the propellant will not burn, the only real opportunity to change the burning behavior would be to cause the alcohol/water mixture to burn more severely (e.g., maybe produce fireballs when the mixture if ejected from the container under pressure). To evaluate this potential, a small-scale test series was contracted with Underwriters Laboratories to investigate the impact of pressurizing aerosol products in plastic containers, filled with a 20%_{vol} alcohol/80%_{vol} water mixture, with nonflammable propellants. A summary of 5 tests that were run is provided in Table 2. Two filling methods were investigated, direct fill (liquid and propellant in same space) and bag-on-valve (liquid in one compartment, propellant in outer compartment). UL reported the number of container failures. The overall fire behavior was provided through direct observation. The tests looked at two cases of six containers arranged with a 6 in. (15 cm) flue between them and a point igniter in the flue space. The cases were in a small pan.

Table 2 UL Testing Summary

Test #	Description	Fill Type	Test Results
1	15% ethanol and 85% water	Direct Fill	12 containers ruptured but burned in place No fire balls during rupture No pool fire Bottom of boxes unburned after 6 min
2	15% ethanol and 85% water	Bag on Valve	12 containers ruptured with some ejected away from case 50% of one carton unburned after 4 min No fire balls during rupture No pool fire
3	20% ethanol and 80% water	Direct Fill	12 containers ruptured but burned in place No fire balls during rupture No pool fire Bottom of boxes unburned after 5 min
4	20% ethanol and 80% water Unpressurized Containers	Direct Fill	12 containers ruptured but burned in place No fire balls during rupture No pool fire Bottom of boxes unburned after 10 min
5	20% ethanol and 80% water	Bag on Valve	5 containers ruptured Fire extinguished by rupturing containers

None of the tests produced a pool fire or fireball. In all five tests, portions of the aerosol products in plastic containers and cardboard cases remained unburned. Based on these tests, it appears that the fire properties of alcohol/water mixture remained unchanged when pressurized and that using Class III commodity protection will provide fully adequate protection for the aerosol products in plastic containers.

3) Aerosol Products in Plastic Containers – Propellant: 4% by Weight Nonflammable Propellant or Flammable Propellant that is Emulsified in Liquid Base; Base: Aqueous Base with no Fire Point.

An emulsion, in an aerosol product, would be a mixture of two or more liquids in which one is present as droplets, of microscopic or ultramicroscopic size, distributed throughout the other. Emulsions are formed from the component liquids either spontaneously or, more often, by mechanical means, such as agitation, provided that the liquids that are mixed have no (or a very limited) mutual solubility. Emulsions are stabilized by agents that form films at the surface of the droplets (e.g., soap molecules) or that impart to them a mechanical stability (e.g., colloidal carbon or bentonite). Colloidal distributions or suspension of one or more liquid(s) with another will have a shelf life that varies with the efficiency of the recipe used.

A Level 1 aerosol (metal can) was defined by the fire performance of shave cream. This product had limited amounts of flammable liquefied gas propellant to eject the mixture and to cause foaming of the mixture. In a fire, the hydrocarbon propellant would be ejected and burn, but the large quantities of foam mix and water tended to produce a very limited fire severity. A similar product was evaluated when placed in a plastic aerosol container.

The product consisted of several liquid components that do not support combustion mixed with water and a maximum of 4% by weight flammable liquefied gas propellant. The liquefied gas was held within the liquid mixture as an emulsion. The gas would eject the liquid product and cause the liquid mixture to foam. Since the liquid components do not burn, the main concern centers around the flammable liquefied gas propellant. The evaluation used small, intermediate, and full-scale fire testing to evaluate the fire hazard created by this product. All of the testing was completed at Underwriters Laboratories.

The intermediate and large-scale testing are summarized in Table 3. The large-scale test used the 12-Pallet Aerosol Classification Test protocol. This methodology only applies to metal aerosol products but, lacking any test data, it was considered a good starting point. The 12 pallet load palletized array operated 4 sprinklers in 10 seconds at around a minute and a half after ignition. The fire was quickly knocked down. The test was run for 32 minutes. The liquid product was released during the test and did not contribute. The flammable liquefied gas did create brief flare-ups of the fire when released and continued to create small fireballs throughout the test. The high sprinkler discharge density (0.79 gpm/ft²) (32 mm/min) easily extinguished the majority of the array and limited the fire spread to the ignition flue located in the center of the array. The fire test seemed to demonstrate that the limited amount of flammable liquefied gas in the product would not produce a severe fire; however, the high water density does not permit easy comparison to a Class III commodity fire.

An intermediate-scale test was run under the calorimeter at UL to evaluate the effect of a significantly lower water density (0.25 gpm/ft²) (10 mm/min) on this product. The product was placed in a double row rack with a storage height of 15 ft (4.6 m). Four open sprinklers were located 10 ft (3 m) above the top of the array and arranged to deliver a 0.25 gpm/ft² (10 mm/min). The sprinklers were activated at approximately one minute after ignition. The test was terminated at 4 minutes since the fire was extinguished. The percent damage was not provided in the UL report; however the pictures indicate that the fire was again confined to the ignition flue.

NFPA 13 requires a 0.25 gpm/ft² (10 mm/min) to protect 15 ft (4.6 m) high double row rack storage of Class III commodity in a 25 ft (7.6 m) high building using low temperature ceiling sprinklers [NFPA 13, Table 16.2.1.3.2, Figure 16.2.1.3.2(c) curves E & F, Figure 16.2.1.3.4.1]. The intermediate-scale test indicates that this same protection level easily controlled/extinguished a fire involving the foam shave cream in a plastic aerosol container.

Table 3 UL Test Summary

Shave Cream Intermediate and Large-Scale Fire Test Summaries			
Test Number		1 (Intermediate-Scale)	1 (Large-Scale)
Report Date		12/31/09	10/26/09
Test Parameters	Commodity	Shave Foam in 11 oz (330 ml) Plastic Aerosol	Shave Foam in 11 oz (330 ml) Plastic Aerosol
	Storage Arrangement (pallet loads)	Rack Array under Calorimeter 2 x 2 x 3 high	Palletized Array 2 x 2 x 3 high
	Storage Height (ft) [m]	15 [4.6]	14 [4.3]
	No. Tiers	3	3
	Ceiling Height (ft) [m]	Sprinklers at 25 [7.6] above floor	25 [7.6]
	Aisle Width (ft)	None	None
	Sprinkler Type (K factor gpm/psi ^{0.5} [L/min/bar ^{0.5}], Temperature Rating)	K = 8.0 [120] / Open	11.2 [161] / 155°F [68°C]
	Sprinkler Spacing (ft x ft) [m x m]	10 x 10 [3 x 3]	10 x 10 [3 x 3]
	Discharge Density (gpm/ft ²) [mm/min]	0.25 [10]	0.79 [32]
Test Results	First Sprinkler Operated (min:sec)	1:07 water on	1:23
	Total Sprinklers Operated	4	4
	Peak Gas Temperature (°F) [°C]	3000 kW peak heat release rate	1242 [672]
	Peak Steel Temperature (°F) [°C]	None recorded	165 [74]
	Test Concluded (min:sec)	4:00	32:00

In addition to the intermediate and large-scale fire test, a number of small-scale tests were also done to provide a visual documentation on how a plastic aerosol container with a shave foam type product behaves when exposed to fire without sprinkler protection. These tests consisted of placing two cases of six containers on each side of a standard igniter. The containers were contained in a cardboard box. A shave cream and a hair mousse were tested. A general description of the test results is provided in Table 4. Test 9 used a product that was very similar to what was tested in the intermediate and large-scale testing. It was a shave cream product that had a small percentage of a flammable liquefied gas that was in a stable emulsion with a multi-component liquid mixture. The liquid mixture did not support combustion. The product in Test 10 had a higher weight percent flammable liquefied gas that did not form a stable emulsion in the bottle. A liquefied gas layer formed in the container. It was not clear what the liquid mixture was made up of. In both products, the flammable liquefied gas was used to eject the liquid mixture out of the container and cause the liquid product to create foam.

In Test 9, all but two of the containers failed. The shave foam covered the cases, containers and pan after the test. The product burned weakly and extinguished the igniter used in the test. The product used in Test 10 did appear to burn more vigorously. Container failure produced momentary fireballs. While this limited-scale test cannot predict the behavior of a product in a full-scale arrangement, it did demonstrate that there were differences between the shave cream and the hair mousse, and that the hair mousse produced a more vigorous fire.

Table 4 UL Testing Summary

Test #	Description	Fill Type	Test Results
9	Shave Cream Emulsion (4% by weight hydrocarbon propellant – the emulsion was stable, no propellant layer was noticeable in container)	Direct Fill	Initially flames are about 3 to 4 ft (0.9 to 1.2 m) high. First container ruptures at :50 seconds. Multiple container ruptures follow. The igniter is extinguished by a container rupture at approximately 1:15. The fire goes out at approximately 6 minutes. The two cases are covered in foam shave cream and two containers did not fail. There was no pool fire. The ruptures did not produce noticeable fireballs or increased burning.
10	Mousse and conditioner (6% by weight hydrocarbon propellant – the emulsion was not stable and a propellant layer formed in container)	Direct Fill	Initially flames are about 3 to 4 ft (0.9 to 1.2 m) high. First container ruptures at :48 seconds. Multiple container ruptures follow. The flames increase in intensity with the container ruptures. Eventually all of the containers are breached. A small pool of burning liquid formed but went out quickly. An increase in burning was noticeable with each container failure.

The results of the intermediate-scale testing, the full-scale testing, and the small-scale testing, indicate that an aerosol product in a plastic container filled with a liquid mixture that does not support combustion and no more than 4% by weight flammable liquefied gas in a stable emulsion with the liquid mixture can be protected using criteria recommended for a Class III commodity.

The aerosol container definition was also modified to reflect the current definition in NFPA 30B 2011, edition, that is referenced by the IFC.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

5101.4 Containers. Metal aerosol containers shall be limited to a maximum size of 33.8 fluid ounces (1000 ml). Plastic aerosol containers shall be limited to a maximum 4 fluid ounces (118 ml) except as provided in Section 5104.1.1. Glass aerosol containers shall be limited to a maximum 4 fluid ounces (118 ml).

5104.1 General. The inside storage of Level 2 and 3 aerosol products shall comply with Sections 5104.2 through 5104.7 and NFPA 30B. Level 1 aerosol products and those aerosol products covered by Section 5104.1.1 shall be considered equivalent to a Class III commodity and shall comply with the requirements for palletized or rack storage in NFPA 13.

5104.1.1 Aerosol products in plastic containers larger than 4 fluid ounces (118 ml), but not to exceed 33.8 fluid ounces (1000 ml) (4 fl. oz.) shall be allowed only when in accordance with this section. ~~The commodity classification shall be considered to be equivalent to Class III commodities, as defined in NFPA 13, Standard for the Installation of Sprinkler Systems, where any of the following conditions are met:~~

1. Base product has no fire point when tested in accordance with ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester*, and nonflammable propellant.
2. Base product has no sustained combustion as tested in accordance with "Method of Testing for Sustained Combustibility", Title 49 Code of Federal Regulations, Part 173, Appendix H, and nonflammable propellant.
3. Base product contains up to 20% by volume (15.8% by weight) of ethanol and/or isopropyl alcohol in an aqueous mix, and nonflammable propellant.
4. Base product contains 4% by weight or less of an emulsified flammable liquefied gas propellant within an aqueous base. The propellant shall remain emulsified for the life of the product. Where such propellant is not permanently emulsified then the propellant shall be nonflammable.

**SECTION 202 (IBC [F] 202)
GENERAL DEFINITIONS**

AEROSOL CONTAINER. A metal can, or a glass or plastic bottle designed to dispense an aerosol. ~~Metal cans or plastic containers shall be limited to a maximum size of 33.8 fluid ounces (1000 ml). Glass bottles shall be limited to a maximum size of 4 fluid ounces (118 ml).~~

Committee Reason: The committee agreed with the proponent's reason statement. The modification removes technical requirements from the definition and clarifies the differences between plastic and glass aerosol containers by establishing limitations on their size in the code text.

Assembly Action:

None

Final Hearing Results

F299-13

AM

Code Change No: F300-13

Original Proposal

Section(s): 5203.7 (New), 5204.1

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (BFICOCs) (rjd@davidsoncodeconcepts.com)

Revise as follows:

5203.7 Sources of ignition. Sources of ignition shall comply with Sections 5203.7.1 through 5203.7.2.

5003.7.1 Smoking. Smoking shall be prohibited and "No Smoking" signs provided as follows:

1. In rooms or areas where materials are stored or dispensed or used in open systems .
2. Within 25 feet (7620 mm) of outdoor storage or open use areas.
3. Facilities or areas within facilities that have been designated as totally "no smoking" shall have "No Smoking" signs placed at all entrances to the facility or area. Designated areas within such facilities where smoking is permitted either permanently or temporarily, shall be identified with signs designating that smoking is permitted in these areas only.

Signs required by this section shall be in English as a primary language or in symbols allowed by this code and shall comply with Section 310.

5203.7.2 Open flames. Open flames and high-temperature devices shall not be used in a manner which creates a hazardous condition and shall be listed for use with the materials stored or used.

5204.1 General. Loose combustible fibers, not in suitable bales or packages and ~~whether housed or stored outdoors~~ in the open, shall ~~not be stored within 100 feet (30 480 mm) any structure, except as indicated in this chapter~~ comply with Section 2808 of this code. Occupancies involving the indoor storage of loose combustible fibers in amounts exceeding the maximum allowable quantity per control area as set forth in Section 5003.1 shall comply with Sections 5204.2 through 5204.6.

Reason: This proposal is part of a package of proposals concerning Chapter 52 Combustible Fibers. An issue identified in review of the current code language and structure is that though Chapter 52 Combustible Fibers is located in the "Hazardous Materials" portion of the code, combustibles fibers are not defined as a hazardous material.

5001.2 Material classification. Hazardous materials are those chemicals or substances defined as such in this code. Definitions of hazardous materials shall apply to all hazardous materials, including those materials regulated elsewhere in this code.

5001.2.1 Mixtures. Mixtures shall be classified in accordance with hazards of the mixture as a whole. Mixtures of hazardous materials shall be classified in accordance with nationally recognized reference standards; by an approved qualified organization, individual, or Material Safety Data Sheet (MSDS); or by other approved methods.

5001.2.2 Hazard categories. Hazardous materials shall be classified according to hazard categories. The categories include materials regulated by this chapter and materials regulated elsewhere in this code.

5001.2.2.1 Physical hazards. The material categories listed in this section are classified as physical hazards. A material with a primary classification as a physical hazard can also pose a health hazard.

1. Explosives and blasting agents.
2. Combustible liquids.
3. Flammable solids, liquids and gases.
4. Organic peroxide solids or liquids.
5. Oxidizer, solids or liquids.
6. Oxidizing gases.

7. Pyrophoric solids, liquids or gases.
8. Unstable (reactive) solids, liquids or gases.
9. Water-reactive materials solids or liquids.
10. Cryogenic fluids.

5001.2.2.2 Health hazards. *The material categories listed in this section are classified as health hazards. A material with a primary classification as a health hazard can also pose a physical hazard.*

1. Highly toxic and toxic materials.
2. Corrosive materials.

Combustible fibers do not fit into those parameters. A review of the definition of hazardous materials found within the code also documents that the materials regulated by Chapter 52 are not hazardous materials.

[F] HAZARDOUS MATERIALS. *Those chemicals or substances that are physical hazards or health hazards as classified in Section 307 and the International Fire Code, whether the materials are in usable or waste condition.*

[F] HEALTH HAZARD. *A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term "health hazard" includes chemicals that are toxic or highly toxic, and corrosive.*

[F] PHYSICAL HAZARD. *A chemical for which there is evidence that it is a combustible liquid, cryogenic fluid, explosive, flammable (solid, liquid or gas), organic peroxide (solid or liquid), oxidizer (solid or liquid), oxidizing gas, pyrophoric (solid, liquid or gas), unstable (reactive) material (solid, liquid or gas) or water-reactive material (solid or liquid).*

Since the scoping of Chapter 50, including the sections within Chapter 50, are for the regulation of hazardous materials, even basic requirements found within Chapter 50 such as control of ignition hazards would not apply to the activities regulated by Chapter 52.

CHAPTER 50 HAZARDOUS MATERIALS—GENERAL PROVISIONS

SECTION 5001 GENERAL

5001.1 Scope. *Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter.*

This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that when specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.

SECTION 5003 GENERAL REQUIREMENTS

5003.1 Scope. *The storage, use and handling of all hazardous materials shall be in accordance with this section.*

This proposal addresses this issue by adding a Section 5203.7 "Sources of ignition" by extracting requirements from current Section 5003.7 "Sources of ignition" that would be appropriate for combustible fibers. In reality, there isn't any other section of Chapter 50 that provides for the regulation of combustible fibers.

In addition, this proposal is building upon a separate proposal to recognize the ability to control the hazards of combustible fibers just as the code provides for recognition of the control of combustible dust by modifying the language found in Section 5204.1.

Section 5204.1 is proposed to be modified to point to Section 2808 "STORAGE AND PROCESSING OF WOOD CHIPS, HOGGED MATERIAL, FINES, COMPOST AND RAW PRODUCT ASSOCIATED WITH YARD WASTE AND RECYCLING FACILITIES" of the fire code as the appropriate standard for the exterior storage of combustible fibers. The materials and hazards presented are similar.

Section 5204.1 is further modified to indicate that the more restrictive indoor storage of combustible fibers regulated by Sections 5204.2 through 5204.6 is for those facilities that have amounts exceeding the maximum allowable quantity per control area as set forth in Section 5003.1. If the hazards are controlled eliminating the application of IFC Table 5003.1.1/IBC [F]307.1.1(1) and Sections 307.4 and 307.5 of the IBC, the increased protection levels are not necessary.

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCS was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers.

Fire codes related to storage, handling, and preprocessing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and preprocessing technologies, the BFICOCS has identified changes in the IFC that benefit industry and the public.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides a needed improvement to the provisions applicable to combustible fibers.

Assembly Action:

None

Public Comments

Public Comment:

Bob Eugene, representing UL LLC, requests Approval as Modified by Public Comment.

Modify the proposal as follows:

5203.7.2 Open flames. Open flames and high-temperature devices shall not be used in a manner which creates a hazardous condition. High temperature devices and those devices utilizing an open flame ~~and~~ shall be listed for use with the materials stored or used.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: As written the proposal would require open flames to be listed. This public comment clarifies that it is the devices utilizing the open flames that must be listed.

Final Hearing Results

F300-13

AMPC

Code Change No: F301-13

Original Proposal

Section(s): Chapter 52; Chapter 37 (New)

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (BFICOCs) (rjd@davidsoncodeconcepts.com)

Revise as follows:

CHAPTER 52 ~~37~~ COMBUSTIBLE FIBERS

Reason: .Currently Chapter 52 regulating Combustible Fibers is located in a portion of the International Fire Code that applies to hazardous materials and the activities involving the handling, storage or use of hazardous materials.

Part V—Hazardous Materials

CHAPTER 50 HAZARDOUS MATERIALS—GENERAL PROVISIONS

SECTION 5001 GENERAL

5001.1 Scope. *Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter.*

This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that when specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.

5001.2 Material classification. *Hazardous materials are those chemicals or substances defined as such in this code. Definitions of hazardous materials shall apply to all hazardous materials, including those materials regulated elsewhere in this code.*

5001.2.1 Mixtures. *Mixtures shall be classified in accordance with hazards of the mixture as a whole. Mixtures of hazardous materials shall be classified in accordance with nationally recognized reference standards; by an approved qualified organization, individual, or Material Safety Data Sheet (MSDS); or by other approved methods.*

5001.2.2 Hazard categories. *Hazardous materials shall be classified according to hazard categories. The categories include materials regulated by this chapter and materials regulated elsewhere in this code.*

5001.2.2.1 Physical hazards. *The material categories listed in this section are classified as physical hazards. A material with a primary classification as a physical hazard can also pose a health hazard.*

1. *Explosives and blasting agents.*
2. *Combustible liquids.*
3. *Flammable solids, liquids and gases.*
4. *Organic peroxide solids or liquids.*
5. *Oxidizer, solids or liquids.*
6. *Oxidizing gases.*
7. *Pyrophoric solids, liquids or gases.*
8. *Unstable (reactive) solids, liquids or gases.*
9. *Water-reactive materials solids or liquids.*
10. *Cryogenic fluids.*

5001.2.2.2 Health hazards. *The material categories listed in this section are classified as health hazards. A material with a primary classification as a health hazard can also pose a physical hazard.*

1. *Highly toxic and toxic materials.*
2. *Corrosive materials.*

Combustible fibers do not fit into those parameters. A review of the definition of hazardous materials found within the code documents that the materials regulated by Chapter 52 are not by definition hazardous materials.

[F] HAZARDOUS MATERIALS. *Those chemicals or substances that are physical hazards or health hazards as classified in Section 307 and the International Fire Code, whether the materials are in usable or waste condition.*

[F] HEALTH HAZARD. *A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term "health hazard" includes chemicals that are toxic or highly toxic, and corrosive.*

[F] PHYSICAL HAZARD. *A chemical for which there is evidence that it is a combustible liquid, cryogenic fluid, explosive, flammable (solid, liquid or gas), organic peroxide (solid or liquid), oxidizer (solid or liquid), oxidizing gas, pyrophoric (solid, liquid or gas), unstable (reactive) material (solid, liquid or gas) or water- reactive material (solid or liquid).*

Because the scoping of Chapter 50 is for the regulation of hazardous materials, the requirements of Chapter 50 would not apply to the materials or activities regulated by Chapter 52 Combustible Fibers.

SECTION 5003 GENERAL REQUIREMENTS

5003.1 Scope. *The storage, use and handling of all hazardous materials shall be in accordance with this section.*

SECTION 5004 STORAGE

5004.1 Scope. Storage of hazardous materials *in amounts exceeding the maximum allowable quantity per control area as set forth in Section 5003.1 shall be in accordance with Sections 5001, 5003 and 5004. Storage of hazardous materials in amounts not exceeding the maximum allowable quantity per control area as set forth in Section 5003.1 shall be in accordance with Sections 5001 and 5003. Retail and wholesale storage and display of nonflammable solid and nonflammable and noncombustible liquid hazardous materials in Group M occupancies and Group S storage shall be in accordance with Section 5003.11.*

SECTION 5005 USE, DISPENSING AND HANDLING

5005.1 General. Use, dispensing and handling of hazardous materials *in amounts exceeding the maximum allowable quantity per control area set forth in Section 5003.1 shall be in accordance with Sections 5001, 5003 and 5005. Use, dispensing and handling of hazardous materials in amounts not exceeding the maximum allowable quantity per control area set forth in Section 5003.1 shall be in accordance with Sections 5001 and 5003.*

IFC Code Commentary for Chapter 52 Combustible Fibers:

"The operations involving combustible fibers are typically associated with salvage, paper milling, recycling, cloth manufacturing, carpet and textile mills and agricultural operations, among others. The primary hazard associated with these operations is the abundance of materials and their ready ignitability. The greatest hazard presented would be a dust explosion hazard and in that case Section 5203.5 requires an approved dust-collecting and exhaust system be installed and compliance with Chapter 22 "Combustible Dust-Producing Operations".

It appears that the Chapter for Combustible Fibers ended up in the hazardous materials portion of the International Fire Code simply because the presence of more than a threshold amount of fibers could result in a Group H classification. In comparison, a combustible dust hazard, which could also result in a Group H classification, has the requirements for controlling the hazard located in Chapter 22 in the Special Occupancies and Operations portion of the code.

This proposal does not make any technical changes and simply suggests taking the existing Combustible Fiber requirements and move them to the Special Occupancies and Operations portion of the code book as a more appropriate location. This is additionally supported by the fact that the combustible fiber activities are linked to Chapter 22 Combustible Dusts by Section 5203.5.

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCs), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCs was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers.

Fire codes related to storage, handling, and preprocessing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and preprocessing technologies, the BFICOCs has identified changes in the IFC that benefit industry and the public.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides a needed improvement to the provisions applicable to combustible fibers in conjunction with code change F300-13.

Assembly Action:

None

Final Hearing Results

F301-12

AS

Code Change No: F303-13

Original Proposal

Section(s): 5301.1, 5305.7

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

5301.1 Scope. Storage, use and handling of compressed gases in compressed gas containers, cylinders, tanks and systems shall comply with this chapter, including those gases regulated elsewhere in this code. Partially full compressed gas containers, cylinders or tanks containing residual gases shall be considered as full for the purposes of the controls required.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Compressed natural gas (CNG) for use as a vehicular fuel shall comply with Chapter 23, NFPA 52 and the International Fuel Gas Code.
3. Compressed hydrogen (CH₂) for use as a vehicular fuel shall comply with Chapters 23 and 58 of this code, the *International Fuel Gas Code* and NFPA 2.

(Portions of section not shown remain unchanged.)

5305.7 Transfer. Transfer of gases between containers, cylinders and tanks shall be performed by qualified personnel using equipment and operating procedures in accordance with CGA P-1.

Exception: The f Fueling of vehicles with compressed natural gas (CNG) or compressed hydrogen gas, that is being conducted in accordance with Chapter 23.

Add new referenced standard to Chapter 80 as follows:

NFPA

2-11 Hydrogen Technologies Code

Reason: These two items are a proposed as a correlation cleanup. In retrospect this cleanup should have been added back in 2003 editions when hydrogen motor fueling was added to Chapter 23.

The added Section 5301.1, Exception 3 mirrors the language for CNG found at Exception 2 with a point to Chapter 23, Chapter 58 and an additional pointer to NFPA 2 to coordinate this proposal with previous proposals in this grouping submitted on behalf of NREL.

With the modification of the exception at Section 5305.7, in addition to adding fueling of vehicles with compressed hydrogen gas, the proposal makes it clear that the exception is due to compliance with Chapter 23 provisions, it is not a unrestricted exception.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 2-11, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of NFPA 2-11 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

The code change is contained in the [Updates to the 2013 Proposed Changes](http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf) posted on the ICC website. Please go to <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf> for more information.

Committee Action:

Approved as Modified

Modify the proposal as follows:

5301.1 Scope. Storage, use and handling of compressed gases in compressed gas containers, cylinders, tanks and systems shall comply with this chapter, including those gases regulated elsewhere in this code. Partially full compressed gas containers, cylinders or tanks containing residual gases shall be considered as full for the purposes of the controls required.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Compressed natural gas (CNG) for use as a vehicular fuel shall comply with Chapter 23, NFPA 52 and the International Fuel Gas Code.

~~3.~~ Compressed hydrogen (CH₂) for use as a vehicular fuel shall also comply with Chapters 23 and 58 of this code, the *International Fuel Gas Code* and NFPA 2.

Cutting and welding gases shall also comply with Chapter 35.

Cryogenic fluids shall comply with Chapter 55. Liquefied natural gas for use as a vehicular fuel shall also comply with NFPA 52 and NFPA 59A.

Compressed gases classified as hazardous materials shall also comply with Chapter 50 for general requirements and chapters addressing specific hazards, including Chapters 58 (Flammable Gases), 60 (Highly Toxic and Toxic Materials), 63 (Oxidizers, Oxidizing Gases and Oxidizing Cryogenic Fluids) and 64 (Pyrophoric Materials).

LP-gas shall also comply with Chapter 61 and the *International Fuel Gas Code*.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides a needed clarification of the hydrogen requirements by referencing an appropriate standard. The modification clarifies that other chapters and the listed code and standard apply as well. Approval is also consistent with committee action on related code changes F254-13 and F256-13.

Assembly Action:

None

Final Hearing Results

F303-13

AM

Code Change No: **F304-13**

Original Proposal

Section(s): 5301.1, 5303.6.2

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Compressed Gas Association (pmclaugma@aol.com)

Revise as follows:

5301.1 Scope. Storage, use and handling of *compressed gases* in *compressed gas* containers, cylinders, tanks and systems shall comply with this chapter and NFPA 55, including those gases regulated elsewhere in this code. Partially full *compressed gas* containers, cylinders or tanks containing residual gases shall be considered as full for the purposes of the controls required.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Compressed natural gas (CNG) for use as a vehicular fuel shall comply with Chapter 23, NFPA 52 and the International Fuel Gas Code.

Cutting and welding gases shall also comply with Chapter 35.

Cryogenic fluids shall comply with Chapter 55. Liquefied natural gas for use as a vehicular fuel shall also comply with NFPA 52 and NFPA 59A.

Compressed gases classified as hazardous materials shall also comply with Chapter 50 for general requirements and chapters addressing specific hazards, including Chapters 58 (Flammable Gases), 60 (Highly Toxic and Toxic Materials), 63 (Oxidizers, Oxidizing Gases and Oxidizing Cryogenic Fluids) and 64 (Pyrophoric Materials).

LP-gas shall also comply with Chapter 61 and the International Fuel Gas Code.

5303.6.2 Caps and plugs. *Compressed gas* containers, cylinders and tanks designed for valve protection caps or other protective devices shall have the caps or devices in place. ~~attached~~. When valve outlet caps or plugs are provided for valve outlet protection they shall be in place.

Exception: *Compressed gas* containers, cylinders or tanks in use, being serviced or being filled.

Reason:

5301.1: Flammable gases and flammable and oxidizing cryogenic fluids are currently also required to comply with NFPA 55. It seems reasonable that all compressed gases comply with NFPA 55, as it is the source of many of the IFC provisions. Because of the three year adoption cycle, and the adoption processes of the two entities being out of sync, the IFC may be up to five or more years out of date. This change will also help keep the IFC updated to current technology. For example, NFPA 55 is the source document for the fundamental requirements for compressed hydrogen gas (GH2), or liquefied hydrogen gas (LH2) system installations. It serves as a source for the fundamental controls used by NFPA 2, *Hydrogen Technologies Code*, 2011 Edition, which contains requirements for vehicular fueling.

5306.6.2: The code change clarifies that when provided, both the protective devices and valve caps must be in place. It also aligns with NFPA 55 requirements.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code should reference NFPA 55 in this chapter and that the code change provides correlation with the standard.

Assembly Action:

None

Final Hearing Results

F304-12

AS

Code Change No: F306-13

Original Proposal

Section(s): 5306, 5306.1, 5306.4

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 5306 MEDICAL GASES SYSTEMS

5306.1 General. ~~Compressed Medical gases at healthcare related hospitals and similar facilities~~ intended for patient care, inhalation or sedation including, but not limited to, analgesia systems for dentistry, podiatry, veterinary and similar uses shall comply with Sections 5306.2 through 5306.4 in addition to other requirements of this chapter.

5306.4 Transfilling. Transfilling areas and operations including, but not limited to, ventilation and separation, shall comply with NFPA 99.

(Renumber remaining section.)

Reason: This proposal addresses CMS KTag 143. This KTag is concerned with the transferring or what is often termed transfilling of oxygen in a gaseous or liquid form within hospitals and other medical facilities. The current provisions in the IFC are actually fairly consistent with NFPA 99 and the requirements of the KTags in this respect. The only major differences found were that the IFC requirements do not specifically address transfilling and the type of floor surface allowed. Transfilling is the transfer of oxygen to smaller portable containers from larger storage containers. This can occur in liquid or gaseous state. Currently the provisions only relate to storage. This has been revised by the proposal. The reference to NFPA will provide restrictions on the floor used to concrete or ceramic due to the noncombustible nature of the floors.

This proposal addresses two other issues as follows:

Title 5306. This was changed to delete the term "systems" since transfilling and storage of oxygen is not necessarily part of a system. This will be a more general title which is more applicable to all of Section 5306.

Section 5306.1. The terms hospitals and similar facilities were deleted in favor of a more all encompassing set of terms "Healthcare related facilities." The current language seems to give priority to hospitals and can be somewhat unclear that it would also apply to ambulatory care facilities and nursing homes.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public."

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change reflects an important and needed coordination effort to correlate the IFC with Federal CMS healthcare regulations with which all facilities must now comply and that it will eliminate costly conflicting requirements among different codes applicable to such facilities.

Assembly Action:

None

Final Hearing Results

F306-12

AS

Code Change No: F308-13

Original Proposal

Section(s): 5306.2.1

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

5306.2.1 One-hour exterior rooms. A 1- hour exterior room shall be a room or enclosure separated from the remainder of the building by fire barriers constructed in accordance with Section 707 of the *International Building Code* or horizontal assemblies constructed in accordance with Section 711 of the *International Building Code*, or both, with a fire- resistance rating of not less than 1- hour. Openings between the room or enclosure and interior spaces shall be self-closing smoke- and draft-control assemblies having a fire protection rating of not less than 1hour. Rooms shall have at least one exterior wall that is provided with at least two non-closable louvered vents. Each vent shall have a minimum free opening area of 24 square inches (155 cm²) for each 1,000 cubic feet (28 m³) at normal temperature and pressure (NTP) of gas stored in the room and shall not be less than ~~36 72~~ square inches (0.023 m² 465 cm²) in aggregate free opening area. One vent shall be within 6 inches (152 mm) of the floor and one shall be within 6 inches (152 mm) of the ceiling. Rooms shall be provided with at least one automatic sprinkler to provide container cooling in case of fire.

Reason: The purpose of this proposal is to update Section 5306.2.1 on Medical Gas Systems to clarify and address the differences with the language in NFPA 99-2012, Section 9.3.7.5.2 with which hospitals are required to comply.

This proposed revision requires the vents to be of the non-closable type which is not currently required in the IFC, and to be of a larger size. It further defines the louver opening as "aggregate free opening" as required which is not currently specified in the IFC.

NFPA 99 is the more restrictive and sets the design of the louver to be specifically fixed where the IFC language may result in a "closable" louver which is not the intent of this code section. It also provides clarification on the sizing of the louver as it relates to the amount of gas being stored in the room where the IFC currently does not.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change provides needed correlation with the parallel requirements in NFPA 99 used by Federal regulators.

Assembly Action:

None

Final Hearing Results

F308-12

AS

Code Change No: F309-13

Original Proposal

Section(s): 5306.4

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Revise as follows:

5306.4 Medical gas systems. Medical gas systems including, but not limited to, distribution piping, supply manifolds, connections, pressure regulators and relief devices and valves, shall be installed in accordance with NFPA 99 and the general provisions of this chapter. Existing medical gas systems shall be maintained in accordance with the maintenance, inspection and testing provisions of NFPA 99 for medical gas systems.

Reason: This proposal clarifies that once medical gas systems are installed in accordance with NFPA 99 that the new construction requirements of NFPA 99 are not intended to be retroactively enforced. Instead the intention is that the systems be maintained in accordance with the maintenance provisions of NFPA 99. This addresses CMS K-Tag K78.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Cost impact: The code change proposal should not increase the cost of construction because compliance with the standard is already required by facility licensure requirements.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change clarifies that, once medical gas systems are installed in accordance with NFPA 99, that the new construction requirements of NFPA 99 are not intended to be retroactively enforced but that the systems are to be maintained in accordance with the maintenance provisions of NFPA 99.

Assembly Action:

None

Final Hearing Results

F309-12

AS

Code Change No: F310-13

Original Proposal

Section(s): 5307 (New), 908.7 (New), 105.6.4 (New), Table 105.6.8

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

SECTION 5307 **CARBON DIOXIDE (CO₂) SYSTEMS USED IN BEVERAGE DISPENSING APPLICATIONS**

5307.1 General. Carbon dioxide systems with 100 or more pounds of carbon dioxide used in beverage dispensing applications shall comply with Sections 5307.2 through 5307.5.2.

5307.2 Permits. Permits shall be required as set forth in Section 105.6.

5307.3 Equipment. The storage, use, and handling of liquid carbon dioxide shall be in accordance with Chapter 53 and the applicable requirements of NFPA 55, Chapter 13.

5307.4 Protection from damage. Carbon dioxide systems shall be installed so the storage tanks, cylinders, piping and fittings are protected from damage by occupants or equipment during normal facility operations.

5307.5 Required protection. Where carbon dioxide storage tanks, cylinders, piping and equipment are located indoors, rooms or areas containing carbon dioxide storage tanks, cylinders, piping and fittings and other areas where a leak of carbon dioxide can collect shall be provided with either ventilation in accordance with Section 5307.5.1 or an emergency alarm system in accordance with Section 5307.5.2.

5307.5.1 Ventilation. Mechanical ventilation shall be in accordance with the *International Mechanical Code* and shall comply with all of the following:

1. Mechanical ventilation in the room or area shall be at a rate of not less than 1 cubic foot per minute per square foot [0.00508 m³/(s • m²)].
2. Exhaust shall be taken from a point within 12 inches (305 mm) of the floor.
3. The ventilation system shall be designed to operate at a negative pressure in relation to the surrounding area.

5307.5.2 Emergency alarm system. An emergency alarm system shall comply with all of the following:

1. Continuous gas detection shall be provided to monitor areas where carbon dioxide can accumulate.
2. The threshold for activation of an alarm shall not exceed 5,000 parts per million (9,000 mg/m³).
3. Activation of the emergency alarm system shall initiate a local alarm at an approved location.

908.7 Carbon dioxide (CO₂) systems. Emergency alarm systems in accordance with Section 5307.5.2 shall be provided where required for compliance with Section 5307.5.

105.6.4 Carbon dioxide systems used in beverage dispensing applications. An operational permit is required for carbon dioxide systems used in beverage dispensing applications with more than 100 pounds of carbon dioxide.

(Renumber subsequent sections.)

Revise as follows:

**TABLE 105.6.8
PERMIT AMOUNTS FOR COMPRESSED GASES**

TYPE OF GAS	AMOUNT (cubic feet at NTP)
Inert and simple asphyxiant ^a	6,000

(Portions of table not shown remain unchanged)

For SI: 1 cubic foot = 0.02832 m³.

a. For carbon dioxide used in beverage dispensing applications, see Section 105.6.4.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal is intended to address fatal CO₂ poisoning incidents in restaurants where CO₂ leaked from large storage tanks and displaced oxygen in these areas. Two such incidents can be found at:

http://articles.orlandosentinel.com/2005-02-12/news/0502120303_1_carbon-dioxide-central-florida-sanford

<http://savannahnow.com/news/2011-09-14/carbon-dioxide-blamed-pooler-mcdonalds-death>

Individual requirements are proposed based on the following:

105.6.4 and Table 105.6.8 – Operational permits are required for CO₂ systems used in the beverage dispensing applications covered by new Section 5307.

5307.1 – The intent of the proposal is to address locations where CO₂ is used in conjunction with carbonators to produce carbonated beverages. A minimum trigger of 100 lbs. was selected for these requirements because it was felt that systems with lesser amounts of CO₂ do not pose as great a risk of asphyxiation as is present with large quantities of the gas.

5307.2 – Provides a reference to permit requirements that is consistent with other such references in the code.

5307.3 - Components in a compressed gas system are already required to comply with Chapter 53 which will cover items such as pressure vessel and piping requirements, among others. An additional reference to NFPA 55, Chapter 13 brings in additional requirements that relate specifically to these installations.

5307.4 - This section includes basic requirements that are intended to protect CO₂ storage tanks, cylinders, piping and fittings are protected from damage by occupants or equipment during normal facility operations. This will decrease the chance of damage that may cause leaks, which is especially important in the facilities in which gas detection systems are not provided.

5307.5 – This section requires buildings in which the CO₂ systems are installed to be provided with either ventilation that complies with Section 5307.5.1 or an emergency alarm system that complies with Section 5307.5.2. It does not require that both ventilation and gas detection be required.

The hazard associated with these systems is that the heavier than air CO₂ may accumulate and displace oxygen, creating an asphyxiation hazard. Leaks are most likely from fittings and connections, but could also be from plastic or other runs of piping.

5307.5.2 – When the emergency alarm system option is selected, it shall include a continuous gas detection system with CO₂ detectors of adequate number and spacing to cover the protected area. The trigger level of 5000 ppm CO₂ is the OSHA Permissible Exposure Limit (PEL).

Cost Impact: This proposal will add to the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

5307.1 General. Carbon dioxide systems with more than 100 ~~or more~~ pounds of carbon dioxide used in beverage dispensing applications shall comply with Sections 5307.2 through 5307.5.2.

5307.3 Equipment. The storage, use, and handling of liquid carbon dioxide shall be in accordance with Chapter 53 and the applicable requirements of NFPA 55, Chapter 13. Insulated liquid carbon dioxide systems shall have pressure relief devices vented in accordance with NFPA 55.

5307.5.2 Emergency alarm system. An emergency alarm system shall comply with all of the following:

1. Continuous gas detection shall be provided to monitor areas where carbon dioxide can accumulate.
2. The threshold for activation of an alarm shall not exceed 5,000 parts per million (9,000 mg/m³).
3. Activation of the emergency alarm system shall initiate a local alarm within the room or area in which the system is installed at an approved location.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee agreed with the proponent that the code change focuses on an emerging life safety hazard for building occupants and first responders and, while it will need some adjustments, it should be put into the code now to provide important safeguards against accidental CO₂ asphyxiation. The modification to Section 5307.1 provides correlation with the permit requirements of Section 105.6.4. The modification to Section 5307.3 provides needed overpressure protection for insulated systems. The modification to Section 5307.5.2 better defines where an alarm must sound and provides correlation with CGA-6.5 which, although not referenced in the IFC, is a national standard on the subject.

Assembly Action:

None

Final Hearing Results

F310-13

AM

Code Change No: F311-13

Original Proposal

Section(s): 5501.1, 5503.1.3.1, 5503.2.6, Table 5504.3.1.1

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Compressed Gas Association (pmclaugma@aol.com)

Revise as follows:

5501.1 Scope. Storage, use and handling of *cryogenic fluids* shall comply with this chapter and NFPA 55. *Cryogenic fluids* classified as hazardous materials shall also comply with the general requirements of Chapter 50 for general requirements. Partially full containers containing residual *cryogenic fluids* shall be considered as full for the purposes of the controls required.

Exceptions:

1. Fluids used as refrigerants in refrigeration systems (see Section 606).
2. Liquefied natural gas (LNG), which shall comply with NFPA 59A.

Oxidizing *cryogenic fluids*, including oxygen, shall comply with ~~NFPA 55~~ and Chapter 63, as applicable.

Flammable *cryogenic fluids*, including hydrogen, methane and carbon monoxide, shall comply with ~~NFPA 55~~ and Chapters 23 and 58, as applicable.

Inert *cryogenic fluids*, including argon, helium and nitrogen, shall comply with ANSI/CGA P-18.

5503.1.3.1 Temperature effects. When container foundations or supports are subject to exposure to temperatures below -130°F (-90°C) -150°F (-101°C), the foundations or supports shall be constructed of materials to withstand the low-temperature effects of *cryogenic fluid* spillage.

5503.2.6 Shutoffs between pressure relief devices and containers. Shutoff valves shall not be installed between pressure relief devices and containers.

Exceptions:

1. A shutoff valve is allowed on containers equipped with multiple pressure-relief device installations where the arrangement of the valves provides the full required flow through the minimum number of required relief devices at all times.
2. A locking type shutoff valve, is allowed to be used upstream of the pressure relief device for service-related work performed by the supplier when in accordance with the requirements of the ASME Boiler and Pressure Vessel Code.

**TABLE 5504.3.1.1
SEPARATION OF STATIONARY CONTAINERS FROM
EXPOSURE HAZARDS**

EXPOSURES	MINIMUM DISTANCE (feet)
Building exits	10

(Portions of table not shown remain unchanged)

Reason:

5501.1: The proposal requires compliance to NFPA 55 for all cryogenic fluids and provides the correct title for the already reference P-18. Without the expanded NFPA 55 reference, the scope is inconsistent. It currently requires compliance with NFPA 55 oxidizing and flammable cryogenic fluids. If it is appropriate for these materials it is appropriate for all cryogenic fluids.

5503.1.3.1: A cryogenic fluid is defined as having a boiling point lower than -130 F by the IFC, DOT, OSHA, and internationally. The requirements should apply at that temperature otherwise the foundation or supports of those cryogenic fluids within the range not covered are at risk. . Also, the change brings the IFC into alignment with NFPA 55.

5503.2.6: The proposal brings the IFC into alignment with NFPA 55. The ASME Boiler and Pressure Vessel code allows the use of a locking valve on the upstream side of a pressure relief device in instances where it is impractical to install multiple pressure relief devices and valves, or where having the multiple valves creates more potential safety hazards during maintenance work on the devices. The BPV code has detailed requirements for working on relief devices with the use of upstream valves, including the requirement to lock the valve open when not working on the valve and the requirement to lower pressure vessel pressure before maintenance. The BPV code also requires that personnel monitor vessel pressure during maintenance and have access to an alternate valve other than a pressure relief valve to relieve unexpected pressure rises during maintenance activities. Petrochemical plants and industrial gas plant personnel have used the procedures successfully for many years, as evidenced by the continued allowance of the procedure in the BPV code.

Table

5504.3.1.1: The proposal correlates this Table with IFC Table 5504.3.1.2.1, Separation of Portable Containers from Exposure Hazards and NFPA 55.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change provides internal correlation with Table 5504.3.1.2.1 and external correlation with NFPA 55.

Assembly Action:

None

Final Hearing Results

F311-12

AS

Code Change No: F312-13

Original Proposal

Section(s): 5601.3

Proponents: Glenn A. Dean, Virginia State Fire Marshal's Office (glenn.dean@vdfp.virginia.gov); Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

Permits shall not be issued or renewed for possession, manufacture, storage, handling, sale or use of the following materials and such materials currently in storage or use shall be disposed of in an *approved* manner.

1. Liquid nitroglycerin.
2. Dynamite containing more than 60-percent liquid *explosive* ingredient.
3. Dynamite having an unsatisfactory absorbent or one that permits leakage of a liquid *explosive* ingredient under any conditions liable to exist during storage.
4. Nitrocellulose in a dry and uncompressed condition in a quantity greater than 10 pounds (4.54 kg) of net weight in one package.
5. Fulminate of mercury in a dry condition and fulminate of all other metals in any condition except as a component of manufactured articles not hereinafter forbidden.
6. *Explosive* compositions that ignite spontaneously or undergo marked decomposition, rendering the products of their use more hazardous, when subjected for 48 consecutive hours or less to a temperature of 167°F (75°C).
7. New *explosive materials* until *approved* by DOTn, except that permits are allowed to be issued to educational, governmental or industrial laboratories for instructional or research purposes.
8. ~~*Explosive materials condemned*~~ forbidden for transport by DOTn.
9. *Explosive materials* containing an ammonium salt and a chlorate.
10. *Explosives* not packed or marked as required by DOTn 49 CFR Parts 100–185.

Exception: Gelatin dynamite.

Reason - DEAN: The U.S. Department of Transportation (DOTn) does not “condemn” materials. It never has. What DOTn does do, when appropriate, is list explosive products as “forbidden” by any mode of transport. This change is simply to reflect that reality by deleting the antiquated language that has for decades wrongly existed in the model codes, and replace it with specific, enforceable language.

A complete list of materials forbidden to transport by DOTn is available at <http://www.phmsa.dot.gov>.

Reason - ZUBIA: While it does prohibit transporting certain materials on the public highways, the Federal Department of Transportation (DOTn) does not condemn explosives.

Example: Triacetone Triperoxide (TATP)

These materials are already banned or prohibited from transportation by DOT. The DOT prohibition is not affected by the deletion of this outdated language.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change improves the code's correlation with Federal transportation regulations.

Assembly Action:

None

Final Hearing Results

F312-12

AS

Code Change No: **F313-13**

Original Proposal

Section(s): 5601.1.3

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee
(cbaldassarra@RJAGroup.com)

Revise as follows:

5601.1.3 Fireworks. The possession, manufacture, storage, sale, handling and use of fireworks are prohibited.

Exceptions:

1. Storage and handling of fireworks as allowed in Section 5604.
2. Manufacture, assembly and testing of fireworks as allowed in Section 5605.
3. The use of fireworks for fireworks displays as allowed in Section 5608.
4. The possession, storage, sale, handling and use of specific types of Division 1.4G fireworks where allowed by applicable laws, ordinances and regulations, provided such fireworks comply with NFPA 1124, CPSC 16 CFR Parts 1500 and 1507, and DOTn 49 CFR Parts 100 – 185, for consumer fireworks.

Reason: Consumer fireworks present an unusually high risk to the public. This is reflected in the general provision of this paragraph – a prohibition of such facilities – although certain exceptions are allowed. Incidents have been documented in a report prepared for the NFPA Fire Protection Research Foundation by Schirmer Engineering Corporation, *Fire Safety in Consumer Fireworks Storage and Retail Facilities – Hazard Assessment, October, 2007*, available from The Research Foundation. The report further identified concerns about the lack of technical documentation for various design criteria, including the lack of a basis for appropriate automatic sprinkler protection design criteria for such facilities.

The current provision in Exception 4 is inadequate to assure that a reasonable level of safety will be provided. Reference to NFPA will provide additional important criteria related to construction, allowable area, egress and protection which is not identified in CPSC 16 CFR, Parts 1500 and 1507, or DOTn 49 CFR, Parts 100 – 185. NFPA has recently undertaken a major review of the consumer fireworks provisions in NFPA 1124 to assure that the provisions are technically sound and provide a reasonable level of safety for this hazard.

Cost Impact: This proposal may have a negative impact on the construction of large consumer fireworks facilities. The exact impact cannot be quantified. Nevertheless, the industry will have options to safely operate its businesses.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

5601.1.3 Fireworks. The possession, manufacture, storage, sale, handling and use of fireworks are prohibited.

Exceptions:

1. Storage and handling of fireworks as allowed in Section 5604.
2. Manufacture, assembly and testing of fireworks as allowed in Section 5605.
3. The use of fireworks for fireworks displays as allowed in Section 5608.
4. The possession, storage, sale, handling and use of specific types of Division 1.4G fireworks where allowed by applicable laws, ordinances and regulations, provided such fireworks and facilities comply with NFPA 1124, CPSC 16 CFR Parts 1500 and 1507, and DOTn 49 CFR Parts 100 – 185, for consumer fireworks.

Committee Reason: The committee agreed with the proponent that the added reference to NFPA 1124 will provide an improved level of safety where consumer fireworks are allowed. The modification clarifies that the scope of NFPA 1124 includes facilities for the storage, handling and sale of consumer fireworks, not just the fireworks themselves.

Assembly Action:

None

Final Hearing Results

F313-13

AM

Code Change No: **F314-13**

Original Proposal

Section(s): 5601.3

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

5704.2.5 Explosion control. Explosion control shall be provided in accordance with Section 911 for indoor tanks.

Reason: This section is under 5704.2 which is applicable to indoor and outdoor tanks. Explosion control is typically applied for indoor storage and/or use. Explosion control using mechanical ventilation as deflagration prevention or using barricaded construction, is not applicable to outdoor tank storage.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change clarifies that explosion control would only be required for indoor tank installations.

Assembly Action:

None

Final Hearing Results

F314-12

AS

Code Change No: **F315-13**

Original Proposal

Section(s): 5704.2.7.1, 5704.2.11, 5704.2.11.1

Proponent: Bob Eugene, representing UL LLC (Robert.Eugene@ul.com)

Revise as follows:

5704.2.7.1 Materials used in tank construction. The materials used in tank construction shall be in accordance with NFPA 30. The materials of construction for tanks and their appurtenances shall be compatible with the liquids to be stored.

5704.2.11 Underground tanks. Underground storage of flammable and *combustible liquids* in tanks shall comply with Section 5704.2 and Sections 5704.2.11.1 through 5704.2.11.4.2 ~~5704.2.11.5.2~~.

~~**5704.2.11.1 Contents.** Underground tanks shall not contain petroleum products containing mixtures of a nonpetroleum nature, such as ethanol or methanol blends, without evidence of compatibility.~~

(Renumber subsequent sections)

Reason: Combustible and flammable liquid tanks are being used to store an ever increasing number of liquids, including gasoline/ethanol blends and diesel/biodiesels blends. A sentence was added to the general tank storage section requiring the tank materials to be compatible with the stored liquids. This is consistent with NFPA 30, Section 21.4.1.1. With this requirement in place for all tanks, it is no longer necessary to include a similar compatibility requirement for underground tanks in Section 5704.2.11.1.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change provides an important requirement in a more broadly applicable location and also provides correlation with the referenced standard for tanks, NFPA 30.

Assembly Action:

None

Final Hearing Results

F315-12

AS

Code Change No: **F316-13**

Original Proposal

Section(s): 5704.2.7.3.6

Proponent: Lynne M. Kilpatrick, Sunnyvale Department of Public Safety, representing California Fire Chiefs Association (lkilpatrick@sunnyvale.ca.gov)

Delete without substitution:

~~**5704.2.7.3.6 Tank venting for tanks and pressure vessels storing Class IB and Class IC liquids.** Tanks and pressure vessels storing Class IB or Class IC liquids shall be equipped with venting devices which shall be normally closed except when venting under pressure or vacuum conditions, or with listed flame arresters. The vents shall be installed and maintained in accordance with Section 21.4.3 of NFPA 30 or API 2000.~~

Reason: Revisions to Section 5704.2.7.3.2 that were approved during the last code cycle fully address the requirements for venting tanks containing Class IB and IC flammable liquids currently found in Section 5704.2.7.3.6, making this Section redundant.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change removes a section made redundant by code changes approved in the 2009/10 cycle.

Assembly Action:

None

Final Hearing Results

F316-12

AS

Code Change No: F317-13

Original Proposal

Section(s): 5704.2.9.7.3

Proponent: Lynne M. Kilpatrick, Sunnyvale Department of Public Safety, representing California Fire Chiefs Association (lkilpatrick@sunnyvale.ca.gov)

Delete without substitution:

5704.2.9.7.3 Flame arresters. Approved flame arresters or pressure breather valves shall be installed in normal vents.

Reason: As written, this code section requires that a flame arrester or pressure-vacuum (PV) vent be installed in the normal vent of all protected aboveground tanks (UL 2085) containing flammable or combustible liquids. Because the primary function of a flame arrester is to prevent the unrestricted propagation of flame through flammable gas or vapor mixtures, there is no technical reason to require a flame arrester on tanks containing combustible liquids. Other national standards (i.e. NFPA 30: 21.4.3.9) require the venting devices or flame arresters only on tanks containing Class I flammable liquids. Even the provisions found in Section 5704.2.7.3.2 of this code addressing other tanks whose design and construction provide less protection and control than a protected aboveground tank, only require tanks to be equipped with such venting devices when the tank contains a Class I liquid. Consider the following example of this inconsistency: A diesel generator with an integral UL142 (steel aboveground) tank is not required to be equipped with a flame arrester on the normal vent, but the same diesel generator with an integral UL 2085 tank is required to have a flame arrester.

Approving this code change proposal deletes the special requirement for all protected aboveground tanks to be equipped with a venting device or flame arrester regardless of the tank contents and relies on Section 5704.2.7.3.2 to drive the conditions under which the device is needed. This is consistent with the current code requirement for tanks other than protected aboveground tanks and other national standards and maintains a requirement for all tanks to be equipped with a tank venting device or flame arrester when there is a sound technical reason to provide one.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change deletes an unnecessary special requirement for all protected aboveground tanks to be equipped with a vent flame arrester regardless of tank contents and relies on Section 5704.2.7.3.2 to drive the conditions under which such a device would be needed.

Assembly Action:

None

Final Hearing Results

F317-12

AS

Code Change No: **F318-13**

Original Proposal

Section(s): 5704.3.3.2

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

5704.3.3.2 Incompatible materials. Materials that will react with water or other liquids to produce a hazard shall not be stored in the same room with flammable and *combustible liquids* except where stored in accordance with Section 5003.9.8.

Reason: The code section, as it is currently written, provides conflicting information. Materials that will react with water or other liquids to produce a hazard are allowed in the same room as flammable and combustible liquids when restricted by container size isolated from each other by methods listed in 5003.9.8 (1) through (4) . Therefore the language stating "shall not be stored in the same room" is in conflict with "in accordance with Section 5003.9.8."

We believe the intent is to isolate the two materials to avoid a reaction. The language as it is can be problematic in places such as lab facilities where a storage area using hazardous materials cabinets are used to store small vials of materials.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change clarifies the intent of the section.

Assembly Action:

None

Final Hearing Results

F318-12

AS

Code Change No: F319-13

Original Proposal

Section(s): Table 5704.3.6.3(7), Table 5704.3.7.5.1, 5704.3.8.5

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

TABLE 5704.3.6.3(7)

AUTOMATIC AFFF WATER PROTECTION REQUIREMENTS FOR RACK STORAGE OF LIQUIDS IN METAL CONTAINERS GREATER THAN 5-GALLON CAPACITY^{a,b}

(No changes to table)

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m², 1 pound per square inch = 6.895 kPa, 1 gallon = 3.785 L, 1 gallon per minute = 3.785 L/m, 1 gallon per minute per square foot = 40.75 L/min/m².

- a. System shall be a closed-head wet system with *approved* devices for proportioning aqueous film-forming foam.
- b. Except as modified herein, in-rack sprinklers shall be installed in accordance with NFPA 13.
- c. The height of storage shall not exceed 25 feet.
- d. Hose stream demand includes 1¹/₂-inch inside hose connections ~~hand hose~~, when required.

TABLE 5704.3.7.5.1

AUTOMATIC AFFF-WATER PROTECTION REQUIREMENTS FOR SOLID-PILE AND PALLETIZED STORAGE OF LIQUIDS IN METAL CONTAINERS OF 5-GALLON CAPACITY OR LESS^{a,b}

(No changes to table)

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m², 1 gallon per minute = 3.785 L/m, 1 gallon per minute per square foot = 40.75 L/min/m², °C. = [(°F)-32]/1.8.

- a. System shall be a closed-head wet system with approved devices for proportioning aqueous film-forming foam.
- b. Maximum ceiling height of 30 feet.
- c. Hose stream demand includes 1 1/2-inch inside hose connections ~~hand hose~~, when required.

5704.3.8.5 Warehouse hose lines. In liquid storage warehouses, either 1 1/2-inch (38 mm) lined or 1-inch (25 mm) hard rubber ~~hand~~ hose lines shall be provided in sufficient number to reach all liquid storage areas and shall be in accordance with Section 903 or Section 905.

Reason: The term "hand hose" is only used in Chapter 57, while the remainder of the IFC uses the term "hose connections."

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change clarifies the text by providing consistency of terminology regarding hose connections throughout the code.

Assembly Action:

None

Final Hearing Results

F319-12

AS

Code Change No: F320-13

Original Proposal

Section(s): 5705.5, 5705.5.1

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

5705.5 Alcohol-based hand rubs classified as Class I or II liquids. The use of wall-mounted dispensers containing alcohol-based hand rubs classified as Class I or II liquids shall be in accordance with all of the following:

1. The maximum capacity of each dispenser shall be 68 ounces (2 L).
2. The minimum separation between dispensers shall be 48 inches (1219 mm).
3. The dispensers shall not be installed ~~directly adjacent to, directly above, or below, or closer than 1 inch to~~ an electrical receptacle, switch, appliance, device or other ignition source. The wall space between the dispenser and the floor or intervening counter top shall be free remain clear and unobstructed of electrical receptacles, switches, appliances, devices, or other ignition sources.
4. Dispensers shall be mounted so that the bottom of the dispenser is a minimum of 42 inches (1067 mm) and a maximum of 48 inches (1219 mm) above the finished floor.
5. Dispensers shall not release their contents except when the dispenser is manually activated. Facilities shall be permitted to install and use automatically activated "touch free" alcohol-based hand-rub dispensing devices with the following requirements:
 - 5.1. The facility or persons responsible for the dispensers shall test the dispensers each time a new refill is installed in accordance with the manufacturer's care and use instructions.
 - 5.2. Dispensers shall be designed and must operate in a manner that ensures accidental or malicious activations of the dispensing device are minimized. At a minimum, all devices subject to or used in accordance with this section shall have the following safety features:
 - 5.2.1. Any activations of the dispenser shall only occur when an object is placed within 4 inches (98 mm) of the sensing device.
 - 5.2.2. The dispenser shall not dispense more than the amount required for hand hygiene consistent with label instructions as regulated by the United States Food and Drug Administration (USFDA).
 - 5.2.3. An object placed within the activation zone and left in place will cause only one activation.
6. Storage and use of alcohol-based hand rubs shall be in accordance with the applicable provisions of Sections 5704 and 5705.
7. Dispensers installed in occupancies with carpeted floors shall only be allowed in smoke compartments or fire areas equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

5705.5.1 Corridor installations. In addition to the provisions of Section 5705.5, ~~W~~ where wall-mounted dispensers containing alcohol-based hand rubs are installed in corridors or rooms and areas open to the corridor, they shall be in accordance with all of the following:

1. Level 2 and 3 aerosol containers shall not be allowed in corridors.

2. The maximum capacity of each Class I or II liquid dispenser shall be 41 ounces (1.21 L) and the maximum capacity of each Level 1 aerosol dispenser shall be 18 ounces (0.51 kg).
3. The maximum quantity allowed in a corridor within a control area shall be 10 gallons (37.85 L) of Class I or II liquids or 1135 ounces (32.2 kg) of Level 1 aerosols, or a combination of Class I or II liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gallons (37.85 L) or 1,135 ounces (32.2 kg) such that the sum of the ratios of the liquid and aerosol quantities divided by the allowable quantity of liquids and aerosols, respectively, shall not exceed one.
4. The minimum corridor width shall be 72 inches (1829 mm).
5. Projections into a corridor shall be in accordance with Section 1003.3.3.

Reason: Because ABHR dispensers are often installed above fixed casework countertops, Section 5705.5(3) is being revised to address the practical issue of clearances from the dispenser to ignition sources associated with the countertop installation. Establishing the minimum clearance requirements provides clarity to the fire code official and to designers and facility administrators.

As part of an institution's infection control protocol, many places where ABHR dispensers are installed in healthcare facilities are areas that are open to the corridor as permitted by Section 407 of the *International Building Code*. As such, Section 5705.5.1 is being revised to include such areas.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held 25 meetings – all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

Cost impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change provides improved guidance to the fire code official regarding the installation of alcohol-based hand rub dispensers above casework countertops and in corridors.

Assembly Action:

None

Final Hearing Results

F320-12

AS

Code Change No: **F323-13**

Original Proposal

Section(s): 5801.1, Chapter 80

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

5801.1 Scope. The storage and use of flammable gases and flammable cryogenic fluids shall be in accordance with this chapter and NFPA 55. Compressed gases shall also comply with Chapter 53 and cryogenic fluids shall also comply with Chapter 55. Flammable cryogenic fluids shall comply with Section 5806. Hydrogen motor fuel-dispensing stations and repair garages and their associated above-ground hydrogen storage systems shall also be designed, ~~and~~ constructed and maintained in accordance with Chapter 23 and NFPA 2.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Liquefied petroleum gases and natural gases regulated by Chapter 61.
3. Fuel-gas systems and appliances regulated under the International Fuel Gas Code other than gaseous hydrogen systems and appliances.
4. Pyrophoric gases in accordance with Chapter 64.

Add new standard to Chapter 80 as follows:

NFPA
2-11 Hydrogen Technologies Code 5801.1

Reason: This minor modification to Section 5801.1 clarifies that hydrogen motor fuel dispensing stations and repair garages must be maintained in accordance with Chapter 23 in addition to being design and constructed in accordance with that chapter. Additionally, a reference is added to NFPA 2 to coordinate with previous proposals in this series of changes submitted on behalf of NREL.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 2-11, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of NFPA 2-11 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides a needed clarification of the hydrogen system maintenance requirements by referencing an appropriate standard.

Assembly Action:

None

Final Hearing Results

F323-12

AS

Code Change No: F324-13

Original Proposal

Section(s): 5803.1.1

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

5803.1.1 Special limitations for indoor storage and use. Flammable gases shall not be stored or used in Group A, E, I or R occupancies or in offices in Group B occupancies.

Exceptions:

1. Cylinders of nonliquefied compressed gases not exceeding a capacity of 250 cubic feet (7.08 m³) or liquefied gases not exceeding a capacity of 40 pounds (18 kg) each at normal temperature and pressure (NTP) used for maintenance purposes, patient care or operation of equipment.
2. Food service operations in accordance with Section 6103.2.1.7.
3. Hydrogen gas systems located in a hydrogen cutoff room constructed in accordance with Section 421 of the *International Building Code*.

Reason: Starting with the 2003 edition of the I-Codes there were provisions for the use of a "hydrogen cutoff room" as an incidental use for the storage and use of hydrogen. The purpose was to provide rules for the indoor application of new hydrogen fuel technology.

Though language was added to Chapter 23 pointing to the hydrogen cutoff room provisions for indoor fueling operations, no pointer was provided for other uses of the new technology such as the use of hydrogen fuel cells with hydrogen gas cylinders as a fuel supply for clean energy backup power systems.

The use of the hydrogen fuel cell backup power supplies is not Group specific and though Exception 1 currently permits the hydrogen for operation of equipment, the amount permitted, 250 cubic feet, is insufficient for the backup power application.

The new pointer to the use of the hydrogen cutoff room will provide for the safe use of this technology in the Groups currently restricted by Section 5803.1.1 by allowing the application of the hydrogen cutoff rooms which have increased protective measures. The limiting factor would be the MAQ for flammable gas currently specified by the code.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides a needed cross-reference to the IBC for hydrogen cut-off room requirements.

Assembly Action:

None

Final Hearing Results

F324-12

AS

Code Change No: **F325-13**

Original Proposal

Section(s): 6003.1.4.1

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

6003.1.4.1 Floors. In addition to the requirements set forth in Section 5004.12, floors of storage areas where highly toxic and toxic liquids are stored shall be of liquid-tight construction.

Reason: Liquid tight flooring for storage of highly toxic and toxic solids is illogical. We believe the code section was intended for storage of liquids only.

Cost Impact: The proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The disapproval was based on the committee's judgment that removal of the requirement for solids could create a hazard condition where firefighting water application would create a liquid mixture that should be contained.

Assembly Action:

None

Public Comment

Public Comment:

Elley Klausbruckner, representing Klausbruckner & Associates Inc., requests Approval as Submitted.

Commenter's Reason: The code section has nothing to do with containment. This code change does not eliminate containment at all. It simply proposes that the requirements of liquid tight flooring does not apply to toxic or highly toxic solids.

Additionally the argument that toxic or highly toxic solids should be stored in rooms having liquid tight flooring because of the firefighting water application is illogical. Using the same argument warehouses containing many commonly used plastics should be also liquid tight since during pyrolysis many of the plastics can be considered as toxic which then creates the same situation if firefighting water is applied.

Final Hearing Results

F325-12

AS

Code Change No: **F326-13**

Original Proposal

Section(s): 6003.1.5.2, 6003.1.5.3

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

6003.1.5.2 Exhaust ventilation for open systems. Mechanical exhaust ventilation shall be provided for highly toxic and toxic liquids used in *open systems* in accordance with Section 5005.2.1.1.

Exception: Liquids ~~or solids~~ that do not generate highly toxic or toxic fumes, mists or vapors.

6003.1.5.3 Exhaust ventilation for closed systems. Mechanical exhaust ventilation shall be provided for highly toxic and toxic liquids used in *closed systems* in accordance with Section 5005.2.2.1.

Exception: Liquids ~~or solids~~ that do not generate highly toxic or toxic fumes, mists or vapors.

Reason: Editorial Change. The charging statement is specific to highly toxic and toxic liquids. However the exception mentions solids.

Cost Impact: The proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent that the code change brings the section into correlation with the scoping established in Section 6003.1.5.

Assembly Action:

None

Final Hearing Results

F326-12

AS

Code Change No: **F329-13**

Original Proposal

Section(s): 6105.2

Proponent: Bruce Swiecicki representing National Propane Gas Association. (bswiecicki@npga.org)

Revise as follows:

6105.2 Release to the atmosphere. LP-gas shall not be released to the atmosphere, except in accordance with Section 7.3 of NFPA 58. ~~through an approved liquid-level gauge or other approved device.~~

Reason: Currently, the IFC permits LP-gas to be released to the atmosphere only while the container is being filled, through the fixed maximum liquid level gauge. However, there are many other situations that require the release of LP-gas under controlled conditions. Referencing Section 7.3 of NFPA 58 will accomplish the intent of this proposal by recognizing all the different circumstances that necessitate the release of gas to the atmosphere, including the following:

- The release of gas when the filling hose is disconnected from the filler valve on the container.
 - The release of gas necessary to make cylinders and other containers safe prior to being serviced.
 - The release of gas that may be necessary in order to properly purge a container of air to make it safe for filling.
- These are a few of the common occurrences in the propane industry that necessitate the release of LP-gas to the atmosphere.

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement and felt that the code change will provide clearer guidance to the fire code official.

Assembly Action:

None

Final Hearing Results

F329-12

AS

Code Change No: **F330-13**

Original Proposal

Section(s): 6106.2

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

6106.2 Overfilling. LP-gas containers shall not be filled or maintained with LP-gas in excess of either the volume determined using the fixed maximum liquid-level gauge ~~installed by the manufacturer~~ installed in accordance with the manufacturer's specifications and in accordance with Section 5.7.5 of NFPA 58, or the weight determined by the required percentage of the water capacity marked on the container. Portable LP-gas containers shall not be refilled unless equipped with an overfilling prevention device (OPD) where required by Section 5.7.3 of NFPA 58.

Reason: This paragraph requires usage of manufacturer installed liquid level gauge to fill a container. It is common practice in the industry to field repair and replace valves and gauges on both ASME tanks and DOT cylinders as needed.

The liquid level gauge is generally an integral part of the service valve which is used to turn the tank on and off. Service valves have rubber or plastic o-rings that can start to leak over time. When a service valve becomes faulty, a new valve is installed with a liquid level gauge tube of exactly the same length. In addition, OPD systems on DOT cylinders may also require periodic replacement. The propane industry has procedures and training to successfully perform these replacements and repair.

The current code text eliminates the ability to service and repair propane containers in the field. The proposed rewrite would correct this and acknowledge that the service and repair of propane containers in the field does take place. NFPA 5.7.5 "Liquid Level Gauging Device" covers the requirements for proper installation and the use of liquid level gauges.

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement and felt that the code change will provide clearer guidance to the fire code official.

Assembly Action:

None

Final Hearing Results

F330-12

AS

Code Change No: **F331-13**

Original Proposal

Section(s): 6107.4, 6109.13

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration
(jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

6107.4 Protecting containers from vehicles. Where exposed to vehicular damage due to proximity to alleys, driveways or parking areas, LP-gas containers, regulators and piping shall be protected in accordance with NFPA 58, Section 342.

6109.13 Protection of containers. LP-gas containers shall be stored within a suitable enclosure or otherwise protected against tampering. Vehicular protection shall be provided as required by Section 6107.4. ~~the fire code official.~~

Reason: Sections 6107.4 and 6109.13 both require vehicle impact protection for LP-gas containers, but the requirements are not consistent between the two sections. Furthermore, Section 6109.13 provides no guidance on when protection is necessary or what type of protection should be provided. The proposed revisions correlate the two sections and provide a reference to NFPA 58 for design requirements that are specific to LP-gas equipment. Because NFPA 58 is specific to LP-gas and it contains requirements for vehicle impact protection, as well as annex guidance on how to accomplish such protection, it makes sense for Chapter 61 to reference NFPA 58 for this topic, as it does for various other LP gas topics, to avoid conflicts between the code and the reference standard.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

6109.13 Protection of containers. LP-gas containers shall be stored within a suitable enclosure or otherwise protected against tampering. ~~Vehicular~~ Vehicle impact protection shall be provided as required by Section 6107.4.

Exception: Vehicle impact protection shall not be required for protection of LP-gas containers where the containers are kept in lockable, ventilated cabinets of metal construction.

(Portions of the proposal not shown remain unchanged.)

Committee Reason: The committee approved the code change based on the proponent's reason statement. The modification reflects the results of impact testing that was done on a variety of cabinet designs which found that lockable metal cabinet construction provided equivalent protection.

Assembly Action:

None

Final Hearing Results

F331-13

AM

Code Change No: F334-13

Original Proposal

Section(s): 6303.1.1.2, 6303.2, 6304.1, 6304.2.1

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Lonza Group and PPG Industries, Inc.(pmclaugma@aol.com)

Revise as follows:

6303.1.1.2 Class 3 liquid and solid oxidizers. A maximum of 200 pounds (91 kg) of solid or 20 gallons (76 L) of liquid Class 3 oxidizer is allowed in ~~Group I occupancies~~ storage and use when such materials are necessary for maintenance purposes or operation of equipment. The oxidizers shall be stored in *approved* containers and in an *approved* manner.

~~**6303.2 Quantities exceeding the maximum allowable quantity per control area.** The storage and use of oxidizing materials in amounts exceeding the *maximum allowable quantity per control area* indicated in Section 5003.1 shall be in accordance with Chapter 50 and this chapter.~~

6303.2 Class 1 oxidizer storage configuration. The storage configuration of Class I liquid and solid oxidizers shall be as set forth in Table 6303.2

~~**6304.2.1 Distance from storage to exposures for liquid and solid oxidizers.** Outdoor storage areas for liquid and solid oxidizers shall be located in accordance with Table 6304.1.2.~~

6304.1 Indoor storage. Indoor storage of oxidizing materials in amounts exceeding the *maximum allowable quantity per control area* indicated in Table 5003.1.1(1) shall be in accordance with Sections 5001, 5003 and 5004 and this chapter.

~~**6304.1.1 Detached storage.** Storage of liquid and solid oxidizers shall be in detached buildings when required by Section 5003.8.2.~~

~~**6304.1.2 Distance from detached storage buildings to exposures.** In addition to the requirements of the *International Building Code*, detached storage buildings shall be located in accordance with Table 6304.1.2.~~

~~TABLE 6304.1.2 OXIDIZER LIQUIDS AND SOLIDS-DISTANCE FORM DETACHED BUILDINGS AND OUTDOOR STORAGE AREAS TO EXPOSURES~~

~~**6304.1.3**~~ **6304.1.1 Explosion control.** Indoor storage rooms, areas and buildings containing Class 4 liquid or solid oxidizers shall be provided with explosion control in accordance with Section 911.

~~**6304.1.4**~~ **6304.1.2 Automatic sprinkler system.** The *automatic sprinkler system* for oxidizer storage shall be designed in accordance with NFPA 430 400.

~~**6304.1.5**~~ **6304.1.3 Liquid-tight floor.** In addition to Section 5004.12, floors of storage areas for liquid and solid oxidizers shall be of liquid-tight construction.

6304.1.6 6304.1.4 Smoke detection. An *approved* supervised smoke detection system in accordance with Section 907 shall be installed in liquid and solid oxidizer storage areas. Activation of the smoke detection system shall sound a local alarm.

Exception: Detached storage buildings protected by an *approved* automatic fire-extinguishing system.

6304.1.7 6304.1.5 Storage conditions. The maximum quantity of oxidizers per building in detached storage buildings shall not exceed those quantities set forth in Tables 6304.1.7 5(1) through 6304.1.7 5(4 3). The storage configuration for liquid and solid oxidizers shall be as set forth in Tables 6304.1.7 5(1) through 6304.1.7 5(4 3). Class 2 oxidizers shall not be stored in *basements* except when such storage is in stationary tanks. Class 3 and 4 oxidizers in amounts exceeding the *maximum allowable quantity per control area* set forth in Section 5003.1 shall be stored on the ground floor only.

6304.1.8 6304.1.6 Separation of Class 4 oxidizers from other materials. In addition to the requirements in Section 5003.9.8, Class 4 oxidizer liquids and solids shall be separated from other hazardous materials by not less than a 1- hour *fire barrier* or stored in hazardous materials storage cabinets. ~~Detached storage buildings for Class 4 oxidizer liquids and solids shall be located a minimum of 50 feet (15 240 mm) from other hazardous materials storage.~~

6304.1.9 6304.1.7 Contamination. Liquid and solid oxidizers shall not be stored on or against combustible surfaces. Liquid and solid oxidizers shall be stored in a manner to prevent contamination.

6304.1.1 6304.1.8 Detached storage. Storage of liquid and solid oxidizers shall be in detached buildings when required by Section 5003.8.2. *(moved from Section 6304.1.1)*

6304.1.8.1 Separation Distance. Detached storage buildings for Class 4 oxidizer liquids and solids shall be located a minimum of 50 feet (15 240 mm) from other hazardous materials storage.

**Table 6304.1.7(1)-6303.2
STORAGE OF CLASS 1 OXIDIZER LIQUIDS AND SOLIDS IN COMBUSTIBLE CONTAINERS^a**

STORAGE CONFIGURATION	LIMITS (feet)
Piles	
Maximum length	No Limit
Maximum width	50 24 (7.3 m)
Maximum height	20 (6.1 m)
Maximum distance to aisle	12 (3.7 m)
Minimum distance to next pile ^b	3 4 (1.2 m)
Minimum distance to walls ^c	2 (0.6 m)
Maximum quantity per pile	No Limit 200 tons (181 met ton)
Maximum quantity per building	No Limit

a. Storage in noncombustible containers or in bulk in detached storage buildings is not limited as to quantity or arrangement.

b. The minimum aisle width shall be equal to the pile height, but not less than 4 (1.2m) ft. and not greater than 8 (2.4m) ft.

c. There shall be no minimum distance from the pile to a wall for amounts less than 9000 lb. (4082 kg).

Table 6304.1.7 (2) 6304.1.5(1)
STORAGE OF CLASS 2 OXIDIZER LIQUIDS AND SOLIDS ^{d, b}

STORAGE CONFIGURATION	LIMITS		
	<u>Segregated storage Control Area Storage</u>	<u>Cutoff storage rooms^e Group H Occupancy Storage</u>	<u>Detached-building Storage</u>
Piles			
Maximum width	16 feet (4.9 m)	25 feet (7.6 m)	25 feet (7.6 m)
Maximum height	40 feet <u>Note a</u>	42 feet <u>Note a</u>	42 feet <u>Note a</u>
<u>Maximum distance to aisle</u>	8 feet (2.4 m)	12 feet (3.7)	12 feet (3.7)
Minimum distance to next pile	Note <u>d b</u>	Note <u>d b</u>	Note <u>d b</u>
Minimum distance to walls	2 feet (0.6 m)	2 feet ^c (0.6 m)	2 feet ^c (0.6 m)
Maximum quantity per pile	20 tons <u>MAQ</u>	50 <u>100</u> tons (91 met ton)	200 tons (181 met tons)
Maximum quantity per building	200 tons <u>MAQ</u>	500 <u>2000</u> tons (907 met tons)	No Limit

For SI: 1 foot = 304.8 mm, 1 ton = 0.907185 metric ton.

- a. ~~Storage in noncombustible containers is not limited as to quantity or arrangement, except that piles shall be at least 2 feet from walls in sprinklered buildings and 4 feet from walls in nonsprinklered buildings.~~
- b. ~~Quantity limits shall be reduced by 50 percent in buildings or portions of buildings used for retail sales.~~
- c. ~~Cutoff storage rooms shall be separated from the remainder of the building by 2-hour fire barriers.~~
- d a. ~~Maximum storage height in non sprinklered buildings is limited to 6 ft. (1.8 m). In sprinklered buildings see NFPA 400 for storage heights based on ceiling sprinkler protection.~~
- b. ~~The minimum aisle width shall be equal to the pile height, but not less than 4 ft. (1.2m) and not greater than 8 ft. (2.4m). Aisle width shall not be less than the pile height.~~
- c. ~~For Protection Level and Detached Storage under 4500 lb (2041 kg), there shall be no minimum separation distance between the pile and any wall.~~

Table 6304.1.7(3) 6304.1.5(2)
STORAGE OF CLASS 3 OXIDIZER LIQUIDS AND SOLIDS ^a

STORAGE CONFIGURATION	LIMITS		
	<u>Segregated storage Control Area Storage</u>	<u>Cutoff storage rooms^e Group H Occupancy Storage</u>	<u>Detached-building Storage</u>
Piles			
Maximum width	12 feet	16 feet	20 feet
Maximum height	8 feet <u>Note a</u>	40 feet <u>Note a</u>	40 feet <u>Note a</u>
<u>Maximum distance to aisle</u>	8 feet (2.4 m)	10 feet (3 m)	10 feet (3 m)
Minimum distance to next pile	Note <u>d b</u>	Note <u>d b</u>	Note <u>d b</u>
Minimum distance to walls	4 feet	4 feet ^c	4 feet ^c
Maximum quantity per pile	20 tons <u>NA</u>	30 tons	150 <u>100</u> tons
Maximum quantity per building	400 tons <u>MAQ</u>	500 <u>1200</u> tons	No Limit

For SI: 1 foot = 304.8 mm, 1 ton = 0.907185 metric ton.

- a. ~~Storage in noncombustible containers is not limited as to quantity or arrangement, except that piles shall be at least 2 feet from walls in sprinklered buildings and 4 feet from walls in nonsprinklered buildings.~~
- b. ~~Quantity limits shall be reduced by 50 percent in buildings or portions of buildings used for retail sales.~~
- c. ~~Cutoff storage rooms shall be separated from the remainder of the building by 2-hour fire barriers.~~
- a. ~~Maximum storage height in non sprinklered buildings is limited to 6 feet. In sprinklered buildings see NFPA 400 for storage heights based on ceiling sprinkler protection.~~

- d b The minimum aisle width shall be equal to the pile height, but not less than 4 (1.2m) ft. and not greater than 8 (2.4m) ft. Aisle width shall not be less than the pile height.
- c. For Protection Level and Detached Storage under 2300 lb (1043 kg), there shall be no minimum separation distance between the pile and any wall.

~~6304.1.7(4)~~ **6304.1.5(3)**
STORAGE OF CLASS 4 OXIDIZER LIQUIDS AND SOLIDS

(Portions of table not shown remain unchanged)

Add new standard to Chapter 80 as follows:

NFPA

400-10 Hazardous Materials Code

Reason: The Chapter 63 provisions on liquid and solid oxidizers were originally extracted from NFPA 430. As a result, Chapter 63 contains terminology that does not exist in the IFC, and creates conflicts and confusion. Furthermore, NFPA developed a new standard on hazardous materials, NFPA 400, using the UFC as the base and NFPA 430 requirements were moved into it, and updated to incorporate the terminology of the IFC relating to hazardous material, and, subsequently, NFPA 430 was withdrawn. However, the IFC was not updated to reflect the new NFPA requirements, nor the current IFC hazardous material requirements. This code change updates Chapter 63 so that it now parallels the terminology of the hazardous materials provisions in the IFC.

6303.1.1.2 - This section, as written, could lead the user to believe that 200 pounds are not allowed in other occupancies because they are not mentioned. However IFC Table 5003.1.1(1) footnote k allows 200 pounds for these purposes in all occupancies. The result of the change would be to provide clarity. Group I occupancies would not be impacted as the section would continue to apply to them.

6303.2 - Class 1 oxidizer storage configuration limits are currently referenced in Section 6304.1.7 which only applies to oxidizers in excess of the maximum allowable quantity. Since there is no maximum allowable quantity for sprinklered Class 1 oxidizers, the reference is added here and the tables renumbered. The current Section is deleted because it is redundant.

6304.1.2 - This section which applies to detached oxidizer storage distances, conflicts with IBC Sections 415.5.1.2 and 415.5.1.3 so it is deleted. Also, the Class 4 oxidizer distances were extracted from NFPA 430 where they apply only to distances of tanks from buildings and not liquid and solid oxidizer from exposures as the current table indicates.

6304.1.4 – The reference to NFPA 430 is changed to NFPA 400 because NFPA 430 no longer exists. The automatic fire sprinkler requirements for oxidizer storage have been moved to Chapter 15 of NFPA 400. The Standard is available to read at: <http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=400>.

6304.1 - The material is reorganized by moving the detached building requirement to the end for clarity. Also, 6304.1.2 which applies to detached oxidizer storage conflicts with IBC Sections 415.5.1.2 and 415.5.1.3. The Class 4 oxidizer distances, which are deleted, were from NFPA 430 where they applied only to distances of tanks from buildings and not liquid and solid oxidizer from exposures as the current table indicates. Lastly, the newly renumbered Section 6304.1.5 is amended to clarify that it applies to all storage of liquid and solid oxidizers, not just detached building storage.

Tables 6304.1.7(1), 6304.1.7(2) and 6304.1.7(3) These tables were amended in NFPA 400 to make them consistent with the International Fire Code terminology, to replace "segregated storage" with "control area storage" and "cutoff storage rooms" with "protection level storage". The quantity allowances were also modified to reflect those found in the IFC for those storage areas. Finally, the Tables were renumbered to reflect the relocation of the Class 1 Table to the general requirements section and the relocation of the charging paragraph.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 400-10, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

Public Hearing Results

For staff analysis of the content of NFPA 400-13 relative to CP#28, Section 3.6, please visit: <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and agreed that it provides improved correlation with IBC Section 415. It also updates the referenced standard to NFPA 400, which has superseded NFPA 430, and provides correlation with it.

Assembly Action:

None

Final Hearing Results

F334-12

AS

Code Change No: **F337-13**

Original Proposal

Section(s): Appendix C101, C102, C103, C104, C105

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

APPENDIX C FIRE HYDRANT LOCATIONS AND DISTRIBUTION

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION C101 GENERAL

C101.1 Scope. In addition to the requirements of Section 507.5.1 of the *International Fire Code*, fire hydrants shall be provided in accordance with this appendix for the protection of buildings, or portions of buildings, hereafter constructed or moved into the jurisdiction.

~~C102~~ LOCATION

~~C102.1 Location.~~ ~~Fire hydrants shall be provided along required fire apparatus access roads and adjacent public streets.~~

~~C102 C103~~ NUMBER OF FIRE HYDRANTS

~~C102.1 C103.1~~ Minimum number of fire hydrants for a building available. The minimum number of fire hydrants available to a building shall not be less than the minimum specified that listed in Table C102.1 C105.1.

~~The number of fire hydrants available to a complex or subdivision shall not be less than that determined by spacing requirements listed in Table C105.1 when applied to fire apparatus access roads and perimeter public streets from which fire operations could be conducted~~

~~SECTION C104 CONSIDERATION OF EXISTING FIRE HYDRANTS~~

~~C104.1 Existing fire hydrants.~~ ~~Existing fire hydrants on public streets are allowed to be considered as available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads.~~

~~SECTION C103 C105 FIRE HYDRANT SPACING DISTRIBUTION OF FIRE HYDRANTS~~

C103.1 C105.1 Hydrant spacing. Fire apparatus access roads and public streets providing required access to buildings in accordance with Section 503 of the *International Fire Code* shall be provided with one or more fire hydrants, as determined by Section C102.1. Where more than one fire hydrant is required, the distance between required fire hydrants shall be in accordance with Sections C103.2 and C103.3

C103.2 Average spacing. The average spacing between fire hydrants shall be in accordance with ~~not~~ exceed that listed in Table C102.1 C105.4.

Exception: ~~The fire chief is authorized to accept a deficiency of up to 10 percent~~ The average spacing shall be permitted to be increased by 10 percent where existing fire hydrants provide all or a portion of the required number of fire hydrants service.

C103.3 Maximum spacing. Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table C105.1 and the minimum number of hydrants are provided. The maximum spacing between fire hydrants shall be in accordance with Table C102.1.

**TABLE C102.1 C105.4
REQUIRED NUMBER AND SPACING DISTRIBUTION OF FIRE HYDRANTS**

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS ^{a,b,c,f,g}	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT ^{d,f,g}
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more ^e	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

- a. Reduce by 100 feet for dead-end streets or roads.
- b. Where streets are provided with median dividers which cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis ~~up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.~~
- c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
- d. Reduce by 50 feet for dead-end streets or roads.
- e. One hydrant for each 1,000 gallons per minute or fraction thereof.
- f. A 50 percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 of the *International Fire Code*.
- g. A 25 percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Sections 903.3.1.2 or 903.3.1.3 of the *International Fire Code* or Section P2904 of the *International Residential Code*.

SECTION C104 CONSIDERATION OF EXISTING FIRE HYDRANTS

C104.1 Existing fire hydrants. Existing fire hydrants on public streets are allowed to be considered as available to meet the requirements of Sections C102 and C103. Existing fire hydrants on adjacent properties ~~shall not be considered available unless~~ are allowed to be considered as available to meet the requirements of Sections C102 and C103 provided that a fire apparatus access roads extends between properties and that an and easements are is established to prevent obstruction of such roads.

Reason: This code change proposal:

1. Clarifies how the requirements of 507.5.1 are to be utilized with Appendix C when Appendix C is adopted by the jurisdiction. Previously, it was not clear how these two sections were to be integrated when Appendix C was adopted.
2. States the buildings moved into the jurisdiction are also under the scope of this appendix. These buildings should be treated like new buildings when they are relocated.
3. The location language, in the current C102.1, is now addressed in the revised C102.1 by addressing the minimum number of hydrants for a building. The location spacing language has been provide in the new C103.1. The proposed C102.1 and title has been revised for better clarity as to the intent and the minimum number of hydrant that are available to a building.
4. The "complex" and "subdivision" paragraph has been deleted as basing the spacing on individual building fire flow covers every building in a complex or subdivision. There is no need for additional "complex or subdivision" text which can't be applied without an identifiable fire flow.
5. C103.1 has been revised for better clarity and application by the user. Poor code language, such as "regardless of the average spacing" has been replaced with clearer code text.
6. Table C102.1 has three modifications to the footnotes. First, the 7,000 GPM threshold for arranging hydrants on an alternating basis does not appear to have any basis in application and creates confusion as to its true intent so it has been deleted. Second, a modifier for a 50% increase in hydrant spacing is proposed for building protected by a fire sprinkler system installed in accordance with NFPA 13. Lastly, a modifier for a 25% increase in hydrant spacing is proposed for those buildings protected by a fire sprinkler system installed in accordance with NFPA 13D, 13R or P2904. This spacing increase is justified due to the documented success of fire sprinklers systems in extinguishing and controlling fires.
7. The existing hydrant section was relocated for better flow of the appendix and additional text was provided to clarify how it should be applied.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and because the proposal provides more hydrant spacing options.

Assembly Action:

None

Final Hearing Results

F337-12

AS

Code Change No: F339-13

Original Proposal

Section(s): Appendix D103.5

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

D103.5 Fire apparatus access road gates. Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. ~~The minimum gate width shall be 20 feet (6096 mm). Where a single gate is provided, the gate width shall be not less than 20 feet (6096 mm). Where a fire apparatus road consists of a divided roadway the gate width shall be not less than 12 feet (3658 mm).~~
2. Gates shall be of the swinging or sliding type.
3. Construction of gates shall be of materials that allow manual operation by one person.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
6. ~~Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools or when a key box containing the key(s) to the lock is installed at the gate location.~~
7. ~~Methods of locking device specifications shall be submitted for approval by the fire code official.~~
8. ~~Electric gate operators, where provided, shall be listed in accordance with UL 325.~~
9. ~~Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.~~

Reason: This proposal is designed to clarify and simplify the list of criteria for security gates.

Item 1 is revised to address the reality that many locations are now splitting the roadway with a guard station or island which holds the gate operating mechanism. When the roadway is split, a gate that is 20' wide is not necessary on each side. Item 1 is reworded to specify that when there is a single gate, the gate width must be 20', but in the situation of a split roadway, a 12' wide gate in each direction is adequate.

The requirements in Item 6 are easily covered in the revision to Item 7. Item 6 currently lists specific methods of locking access gates. Item 6 then becomes unnecessary so it is proposed to be deleted.

The reality is that there are many other methods available which can be utilized to lock a gate. Whatever the method of locking, the need is to have the method approved. This will now be covered in the new Item 6.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

F339-12

AS

Code Change No: **F340-13**

Original Proposal

Section(s): Appendix B105.1, Table B105(1) (New), B105.2, Table B105(2) (New), Table B105.1

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

B105.1 One- and two-family dwellings, congregate living facilities of Groups R-3 and R-4 and townhouses. The minimum fire-flow and flow duration requirements for one- and two-family *dwellings*, congregate living facilities of Group R-3 and R-4 and townhouses having a fire-flow calculation area that does not exceed 3,600 square feet (344.5 m²) shall be 1,000 gallons per minute (3785.4 L/min) for 1 hour. Fire-flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5 m²) shall not be less than that specified in Table B105.1. shall be as specified in Tables B105(1) and B105(3).

Exception: A reduction in required fire-flow of 50 percent, as approved, is allowed when the building is equipped with an approved automatic sprinkler system.

TABLE B105(1)
REQUIRED FIRE-FLOW FOR ONE- AND TWO-FAMILY DWELLINGS, CONGREGATE LIVING FACILITIES OF GROUP R-3 AND R-4 AND TOWNHOUSES,

FIRE-FLOW CALCULATION AREA (square feet)	AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
0-3,600	No automatic sprinkler system	1,000	1
3,601-greater	No automatic sprinkler system	Value in Table B105(3)	Duration in Table B105(3) at the required fire-flow rate
0-3,600	<u>Section 903.3.1.3 of the <i>International Fire Code</i>, or Section P2904 of the <i>International Residential Code</i></u>	500	0.5
3,601-greater	<u>Section 903.3.1.3 of the <i>International Fire Code</i>, or Section P2904 of the <i>International Residential Code</i></u>	½ value in Table B105(3)	1

B105.2 Buildings other than one- and two-family dwellings, congregate living facilities of Group R-3 and R-4 and Townhouses. The minimum fire-flow and flow duration for buildings other than one- and two-family *dwellings*, congregate living facilities of Group R-3 and R-4 and Townhouses shall be as specified in Tables B105.4 B105(2) and B105(3).

Exception: A reduction in required fire-flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.

TABLE B105(2)
**REQUIRED FIRE-FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS,
 CONGREGATE LIVING FACILITIES OF GROUP R-3 AND R-4 AND TOWNHOUSES,**

<u>AUTOMATIC SPRINKLER SYSTEM(Design Standard)</u>	<u>MINIMUM FIRE-FLOW (gallons per minute)</u>	<u>FLOW DURATION (hours)</u>
<u>No automatic sprinkler system</u>	<u>Value in Table B105.3</u>	<u>Duration in Table B105(3)</u>
<u>Section 903.3.1.1 of the International Fire Code.</u>	<u>25% of the value in Table B105(3)^a</u>	<u>Duration in Table B105(3) at the reduced flow rate</u>
<u>Section 903.3.1.2 of the International Fire Code.</u>	<u>25% of the value in Table B105(3)^b</u>	<u>Duration in Table B105(3) at the reduced flow rate</u>

a. The reduced fire-flow shall not be less than 1,000 gallons per minute (5678 L/min)

b. The reduced fire-flow shall not be less than 1,500 gallons per minute (3785 L/min)

B105.3 Water supply for buildings equipped with an automatic sprinkler system. For buildings equipped with an approved *automatic sprinkler system*, the water supply shall be capable of providing the greater of:

1. The automatic sprinkler system demand, including hose stream allowance.
2. The required fire-flow.

TABLE B105.4 B105(3)
MINIMUM REQUIRED FIRE FLOW AND FLOW DURATION FOR BUILDINGS
REFERENCE TABLE FOR TABLES B105(1) AND B102(2)

(Portions of table not shown remain unchanged)

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

1. Clarifies that "Townhouses" R-3 and R-4 congregate living facilities are to be treated as one-and-two family dwellings with respect to developing needed fire flow in accordance with appendix B.
2. Relocates the fire flow modifiers from the paragraph to a table format in B105(1) and B105(2) for easier readability and application by the user.
3. Recognizes the provisions of P2904 in the IRC as equivalent to NFPA 13D when determining needed fire flow.
4. Provides a reduction in the required duration of fire flow for fully sprinklered one-and two-family dwellings less than 3,600 square feet as a reasonable incentive for the installation of a fire sprinkler system. Experience with fire sprinklers shows that a vast majority of fires in one and two family dwellings will be controlled or extinguished by the fire sprinkler system. This duration modifier also provides an achievable fire flow in rural applications where the development of a 1 hour duration is unrealistic.
5. Provides reduction to 1,000 GPM, rather than 1,500 GPM, for buildings other than one-and two-family dwellings and townhomes protected in accordance with NFPA 13 sprinkler systems. Currently, the appendix treats both NFPA 13R and NFPA 13 systems similarly permitting a reduction in fire flow to 1,500 GPM. An NFPA 13 system provides a significantly greater level of protection via the system design area, water supply and protection of concealed combustible spaces. Due to this level of protection, there should be a reduced minimum fire flow for buildings protected in accordance with NFPA 13 systems as opposed to NFPA 13R systems.
6. The current language provides no guidance to the Fire Chief as to criteria upon which to base approval of the required fire flow reduction for sprinkler protected buildings. The change simply allows the reduction by the elimination of the exceptions and codifying the credits in the tables.
7. This code change proposal clarifies in B105.3 that a fire sprinkler demand should not be added to the manual fire flow demand in developing the needed fire flow. The greater of the sprinkler demand or the demand developed in accordance with Appendix B will be the required fire flow.
8. IFC Section 903.3.1.3 was revised last cycle to include Group R-3 and R-4 congregate residences as well as townhouses. Fair Housing by law requires group homes to be considered the same as single family.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The approval was based on the committee's judgment that the proposal recognizes the progress in the development of sprinkler technology and the corresponding reduction in required fire flows.

Assembly Action:

None

Public Comments

Public Comment:

Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

B105.1 One- and two-family dwellings, ~~congregate living facilities~~ of Groups R-3 and R-4 and townhouses. The minimum fire-flow and flow duration requirements for one- and two-family *dwellings, ~~congregate living facilities~~* of Group R-3 and R-4 buildings and townhouses shall be as specified in Tables B105.1(1) and B105.1(2)(~~3~~).

TABLE B105.1(1)
REQUIRED FIRE-FLOW FOR ONE- AND TWO-FAMILY DWELLINGS, ~~CONGREGATE LIVING FACILITIES~~ OF GROUP R-3 AND R-4 BUILDINGS AND TOWNHOUSES,

FIRE-FLOW CALCUATION AREA (square feet)	AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE- FLOW (gallons per minute)	FLOW DURATION (hours)
0-3,600	No automatic sprinkler system	1,000	1
3,601-greater	No automatic sprinkler system	Value in Table B105.1(2)(3)	Duration in Table B105.1(2)(3) at the required fire-flow rate
0-3,600	Section 903.3.1.3 of the <i>International Fire Code</i> . or Section P2904 of the <i>International Residential Code</i>	500	0.5
3,601-greater	Section 903.3.1.3 of the <i>International Fire Code</i> . or Section P2904 of the <i>International Residential Code</i>	½ value in Table B105.1(2)(3)	1

TABLE B105.1(2)(~~3~~)
REFERENCE TABLE FOR TABLES B105.1(1) AND ~~B102(2)~~B105.2
(Portions of table not shown remain unchanged)

B105.2 Buildings other than one- and two-family dwellings, ~~congregate living facilities~~ of Group R-3 and R-4 buildings and townhouses. The minimum fire-flow and flow duration for buildings other than one- and two-family *dwellings, ~~congregate living facilities~~* of Group R-3 and R-4 buildings and townhouses shall be as specified in Tables B105.2(~~2~~) and B105.1(2)(~~3~~).

TABLE B105.2(~~2~~)
REQUIRED FIRE-FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS, ~~CONGREGATE LIVING FACILITIES~~ OF GROUP R-3 AND R-4 BUILDINGS AND TOWNHOUSES,

AUTOMATIC SPRINKLER SYSTEM(Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.3 <u>B105.2(2)</u>	Duration in Table B105.1(2)(3)
Section 903.3.1.1 of the <i>International Fire Code</i> .	25% of the value in Table B105.1(2)(3) ^a	Duration in Table B105.1(2)(3) at the reduced flow rate
Section 903.3.1.2 of the <i>International Fire Code</i> .	25% of the value in Table B105.1(2)(3) ^b	Duration in Table B105.1(2)(3) at the reduced flow rate

- a. The reduced fire-flow shall not be less than 1,000 gallons per minute (5678 L/min)
b. The reduced fire-flow shall not be less than 1,500 gallons per minute (3785 L/min)

B105.3 Water supply for buildings equipped with an automatic sprinkler system. For buildings equipped with an approved *automatic sprinkler system*, the water supply shall be capable of providing the greater of:

1. The automatic *sprinkler system demand*, including hose stream allowance.
2. The required fire-flow.

Commenter's Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Group R-3 may resemble townhouses or one- or two- story dwellings. The current text does not address those types of Group R-3. Group R-4 are always congregate residences. Therefore, removing the term "congregate living facilities of" would allow for all Group R-3 and R-4 buildings to use this sprinkler option.

The changes to the table references are editorial for the correct numbering of tables in accordance standard code language.

Final Hearing Results

F340-13

AMPC

Code Change No: F342-13

Original Proposal

Section(s): Appendix D107.1, D107.2 (New)

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Revise as follows:

D107.1 One- or two-family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with separate and approved fire apparatus access roads, ~~and shall meet the requirements of Section D104.3.~~

Exceptions:

1. Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1., 903.3.1.2 or 903.3.1.3.3, access from two directions shall not be required.
2. The number of dwelling units on a single fire apparatus access road shall not be increased unless fire apparatus access roads will connect with future development, as determined by the fire code official.

D107.2 Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

Reason: This proposal is an editorial change that is intended to clarify the remoteness reference in D107.1. This proposal does not modify the technical aspect of the code.

The current Section D107.1 refers the user to Section D104.3 which is titled "Commercial and Industrial Developments." Referring to Section D104.3 places the user in a section that is not germane to one-and two family dwelling and has to potential to create confusion to the fire code official and the code user.

This code change proposal duplicates the language from D104.3 into a new 107.2 placing new "Remoteness" language within the Section D107 that is directly relevant to one-and two-family dwellings. This code change does not modify any technical aspect of the current code remoteness requirement for one-and two-family dwellings.

Cost Impact: This code change will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and that the proposal provides long needed guidance within the section rather than referring elsewhere.

Assembly Action:

None

Final Hearing Results

F342-12

AS

Code Change No: **F343-13**

Original Proposal

Section(s): Appendix E102.1.7.1

Proponent: Kirk Mitchell, Kirk Mitchell & Associates, LLL, representing Isocyanurates Industry Ad Hoc Committee (IIAHC) (pkmitchell@bellsouth.net)

Revise as follows:

E102.1.7.1 Examples of liquid and solid oxidizers according to hazard.

Class 4: ammonium perchlorate (particle size greater than 15 microns), ammonium permanganate, guanidine nitrate, hydrogen peroxide solutions more than 91 percent by weight, perchloric acid solutions more than 72.5 percent by weight, potassium superoxide, tetranitromethane.

Class 3: ammonium dichromate, calcium hypochlorite (over 50 percent by weight), chloric acid (10 percent maximum concentration), hydrogen peroxide solutions (greater than 52 percent up to 91 percent), mono-(trichloro)-tetra-(monopotassium di-chloro)-penta-s-triazinetriene, nitric acid, (fuming - more than 86 percent concentration), perchloric acid solutions (60 percent to 72 percent by weight), potassium bromate, potassium chlorate, potassium dichloro-s-triazinetriene (potassium dichloro-isocyanurate), ~~potassium perchlorate~~ ~~potassium permanganate~~ ‡, sodium bromate, sodium chlorate, sodium chlorite (over 40 percent by weight) and sodium dichloro-s-triazinetriene † (sodium dichloro-isocyanurate)‡.

Class 2: barium bromate, barium chlorate, barium hypochlorite, barium perchlorate, barium permanganate, 1-bromo-3-chloro-5, 5-dimethylhydantoin, calcium chlorate, calcium chlorite, calcium hypochlorite (50 percent or less by weight), calcium perchlorate, calcium permanganate, †chromium trioxide (chromic acid), copper chlorate, halane (1, 3-di-chloro-5, 5-dimethylhydantoin), hydrogen peroxide (greater than 27.5 percent up to 52 percent), lead perchlorate, lithium chlorate, lithium hypochlorite (more than 39 percent available chlorine), lithium perchlorate, magnesium bromate, magnesium chlorate, magnesium perchlorate, mercurous chlorate, nitric acid (more than 40 percent but less than 86 percent), perchloric acid solutions (more than 50 percent but less than 60 percent), ~~potassium perchlorate~~, ~~potassium permanganate~~, potassium peroxide, potassium superoxide, silver peroxide, sodium chlorite (40 percent or less by weight), sodium perchlorate, sodium perchlorate monohydrate, sodium permanganate, sodium peroxide, †strontium chlorate, strontium perchlorate, thallium chlorate, ~~trichloro-s-triazinetriene (trichloroisocyanuric acid)~~, urea hydrogen peroxide, zinc bromate, zinc chlorate and zinc permanganate.

Class 1: all inorganic nitrates (unless otherwise classified), all inorganic nitrites (unless otherwise classified), ammonium persulfate, barium peroxide, ~~calcium peroxide~~, hydrogen peroxide solutions (greater than 8 percent up to 27.5 percent), lead dioxide, lithium hypochlorite (39 percent or less available chlorine), lithium peroxide, magnesium peroxide, manganese dioxide, nitric acid (40 percent concentration or less), perchloric acid solutions (less than 50 percent by weight), potassium dichromate, †potassium percarbonate, potassium persulfate, sodium carbonate peroxide, sodium dichloro-s-triazinetriene dihydrate, sodium dichromate, sodium perborate (anhydrous), sodium perborate monohydrate, sodium perborate tetra-hydrate, sodium percarbonate, ~~sodium persulfate~~, strontium peroxide, trichloro-s-triazinetriene (trichloroisocyanuric acid) and zinc peroxide.

Reason: This proposal suggests moving Trichloro-s-triazinetrione (trichloroisocyanuric acid) from a Class 2 oxidizer to a Class 1 oxidizer. Trichloro-s-triazinetrione (trichloroisocyanuric acid) is a Class 1 oxidizer (See NFPA 400 – Hazardous Materials Code 2013 Edition – Section G.3.2 Class 1 Oxidizers.)

NFPA reclassified trichloro-s-triazinetrione (trichloroisocyanuric acid) as a Class 1 Oxidizer in the 1995 edition of NFPA 430 based on extensive test data supplied by a consortium of chlorinated isocyanurate manufacturers and reported out in large scale burn tests conducted at Safety Engineering Laboratories, Inc. Since then, trichloro-s-triazinetrione (trichloroisocyanuric acid) has been one of very few oxidizers which are listed in different classes by the IFC compared to NFPA 430/400.

Additionally, recent work by Elizabeth Buc provided supplementary experimental burn rate data on trichloro-s-triazinetrione (trichloroisocyanuric acid). This work confirmed that trichloro-s-triazinetrione (trichloroisocyanuric acid) is appropriately classified as a Class 1 Oxidizer. Reference: E. Buc, Oxidizer Classification Research Project: Tests and Criteria, Fire and Materials Research Laboratory, LLC, November 2, 2009.

(See attached electronic PDF titled *FMRL_Oxidizer_Classification_Research_Project_Report*)

This proposal also suggests making changes to typical oxidizers based on test results and criteria from Table G.1.2(a) – NFPA Oxidizer Class Tests and Criteria of NFPA 400 Hazardous Materials Code (2013 Edition) and Section G.2.2 Class 1 Oxidizer through G.2.4 Class 3 Oxidizer and Table 5.2.1.13.3(a) Maximum Allowable Quantity (MAQ) per Indoor and Outdoor Control Area for Selected Hazard Categories in Merchantile, Storage and Industrial Occupancies.

Cost Impact: The portion of this proposal reclassifying trichloro-s-triazinetrione (trichloroisocyanuric acid) may result in reduced cost of construction and protection of referenced material due to its proper oxidization classification in appendix.

With the exception of the inclusion of 'anhydrous' following sodium dichloro-s-triazinetrione, the other proposed changes to Appendix E Section E102.1.7.1 Examples of Liquid and Solid Oxidizers According to Hazard may result in an increase in the cost of construction and/or protection as the other identified changes represents a categorical increase in the oxidizer classification ranking based on the newly adopted oxidizer testing and classification scheme.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and that the proposal provides correlation with NFPA 400.

Assembly Action:

None

Final Hearing Results

F343-12

AS

Code Change No: F344-13

Original Proposal

Section(s): Appendix K (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Revise as follows:

APPENDIX K CONSTRUCTION REQUIREMENTS FOR EXISTING AMBULATORY CARE FACILITIES

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

K101.1 Scope. The provisions of this chapter shall apply to existing buildings containing ambulatory care facilities in addition to the requirements of Chapter 11. Where the provisions of this chapter conflict with either the construction requirements within Chapter 11 or the construction requirements that applied at the time of construction, the most restrictive provision shall apply.

K101.2 Intent. The intent of this appendix is to provide a minimum degree of fire and life safety to persons occupying and existing buildings containing ambulatory care facilities where such building do not comply with the minimum requirements of the *International Building Code*.

SECTION K102 FIRE SAFETY REQUIREMENTS FOR EXISTING AMBULATORY CARE FACILITIES

K102.1 Separation. Ambulatory care facilities where the potential for four or more care recipients are to be incapable of self-preservation at any time, whether rendered incapable by staff or staff accepted responsibility for a care recipient already incapable, shall be separated from adjacent spaces, corridors or tenants with a fire partition installed in accordance with Section 708 of the *International Building Code*.

K102.2 Smoke compartments. Where the aggregate area of one or more *ambulatory care facilities* is greater than 10,000 square feet (929 m²) on one *story*, the *story* shall be provided with a *smoke barrier* to subdivide the *story* into no fewer than two *smoke compartments*. The area of any one such *smoke compartment* shall be not greater than 22,500 square feet (2092 m²). The travel distance from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be installed in accordance with Section 709 of the *International Building Code* with the exception that *smoke barriers* shall be continuous from outside wall to an outside wall, a floor to a floor, or from a *smoke barrier* to a *smoke barrier* or a combination thereof.

K102.2.1 Refuge area. Not less than 30 net square feet (2.8 m²) for each nonambulatory care recipient shall be provided within the aggregate area of *corridors*, care recipient rooms, treatment rooms, lounge or dining areas and other low-hazard areas within each *smoke compartment*. Each occupant of an *ambulatory care facility* shall be provided with access to a refuge area without passing through or utilizing adjacent tenant spaces.

K102.2.2 Independent egress. A *means of egress* shall be provided from each *smoke compartment* created by smoke barriers without having to return through the *smoke compartment* from which *means of egress* originated.

K102.3 Ambulatory care automatic sprinkler system. An automatic sprinkler system shall be provided throughout the entire floor containing an ambulatory care facility in Type II-B, III-B and V-B construction where either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self preservation, whether rendered incapable by staff of staff has accepted responsibility for care recipients already incapable.
2. One ore more care recipients that are incapable of self preservation are located at other than the level of exit discharge serving such a facility.

In buildings where ambulatory care is provided on levels other than the level of exit discharge, an automatic sprinkler system shall be installed throughout the entire floor where such care is provided and all floors below, and all floors between the level of ambulatory care and the nearest level of exit discharge, including the level of exit discharge.

K102.4 Ambulatory care automatic fire alarm system. Fire areas containing ambulatory care facilities shall be provided with an electronically supervised automatic smoke detection system installed within the ambulatory care facility and in public use areas outside of tenant spaces, including public corridors and elevator lobbies.

Exception: Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the International Fire Code, provided the occupant notification appliances will activate throughout the notification zones upon sprinkler waterflow.

SECTION K103 **INCIDENTAL USES IN EXISTING AMBULATORY CARE FACILITIES**

K103.1 General. Incidental uses associated with and located within existing ambulatory care facilities required to be separated by Section 422 in the International Building Code, and that generally pose a greater level of risk to such occupancies shall comply with the provisions of Sections K103.2 through K103.4.2.1. Incidental uses in ambulatory care facilities required to be separated by Section 422 in the International Building Code are limited to those listed in Table K103.1.

K103.2 Occupancy classification. Incidental uses shall not be individually classified in accordance with Section 302.1 of the International Building Code. Incidental uses shall be included in the building occupancies within which they are located.

K103.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the building area of the story in which they are located.

K103.4 Separation and protection. The incidental uses listed in Table K103.1 shall be separated from the remainder of the building or equipped with an automatic sprinkler system, or both, in accordance with the provisions of that table.

K103.4.1 Separation. Where Table K103.1 specifies a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the building in accordance with Section 509.4.1 of the International Building Code.

K103.4.2 Protection. Where Table K103.1 permits an automatic sprinkler system without a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke in accordance with Section 509.4.2 of the International Building Code.

K103.4.2.1 Protection limitation. Except as otherwise specified in Table K103.1 for certain incidental uses, where an automatic sprinkler system is provided in accordance with Table K103.1, only the space occupied by the incidental use need be equipped with such a system.

**TABLE K103.1
INCIDENTAL USES IN EXISTING AMBULATORY CARE FACILITIES**

<u>ROOM OR AREA</u>	<u>SEPARATION AND/OR PROTECTION</u>
<u>Furnace room where any piece of equipment is over 400,000 Btu per hour input.</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Refrigerant machinery room</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Hydrogen cutoff rooms, not classified as Group H</u>	<u>1 hour in ambulatory care facilities</u>
<u>Incinerator rooms</u>	<u>2 hours and provide automatic sprinkler system</u>
<u>Laboratories not classified as Group H</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Laundry rooms over 100 square feet</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Waste and linen collection rooms with containers with total volume of 10 cubic feet or greater.</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Storage rooms greater than 100 square feet</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies</u>	<u>1 hour in ambulatory care facilities</u>

For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

**SECTION K104
MEANS OF EGRESS REQUIREMENTS FOR EXISTING AMBULATORY CARE FACILITIES**

K104.1 Size of doors. The minimum width of each door opening shall be sufficient for the occupant load thereof and shall provide a clear width of not less than 28 inches (711 mm). Where this section requires a minimum clear width of 28 inches (711 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 28 inches (711 mm). In ambulatory care facilities, doors serving as means of egress from patient treatment rooms shall provide a clear width of not less than 32 inches (813 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. The height of doors openings shall not be less than 80 inches (2032 mm).

Exceptions:

1. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum width.
2. Width of door leaves in revolving doors that comply with Section 1008.1.4.1 shall not be limited.
3. Exit access doors serving a room not larger than 70 square feet (6.5 m²) shall be not less than 24 inches (610 mm) in door width.
4. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the door.

K104.2 Corridor and Aisle width. Corridor width shall be as determined in Section 1005.1 of the International Fire Code and this section. The minimum width of corridors and aisles that serve gurney traffic in areas where patients receive care that causes them to be incapable of self preservation shall be not less than 72 inches (1829mm).

K104.3 Existing elevators. Existing elevators, escalators, dumbwaiters and moving walks shall comply with the requirements of Sections K104. 3.1 and K104.3.2.

K104.3.1 Elevators, escalators, dumbwaiters and moving walks. Existing elevators, escalators, dumbwaiters and moving walks in ambulatory care facilities required to be separated by Section 422 shall comply with ASME A17.3.

K104.3.2 Elevator emergency operation. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3.

SECTION J 105 **REFERENCED STANDARDS**

ICC IBC-15 International Building CodeK101.2, K102.1, K102.2, K103.1, K103.2, K103.3.1, K104.1, K104.2

ICC IFC-15 International Fire Code.....K102.4, K104.2

ASME A17.3-08.....K104.3.1, K104.3.2

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

The intent of this section is to provide jurisdictions an option for assessing a minimum fire and life safety requirements for buildings containing ambulatory care facilities. While this appendix is written with the intent to apply retroactive minimum standards, we recognize that the ambulatory care requirements are relatively recent additions to the code. For that reason, these requirements are presented as an appendix, so that the adopting authority can exercise judgment in the adoption and application of this section.

This is an especially important option for federal authorities having jurisdiction, who have long standing minimum fire and life safety standards for ambulatory care facilities. Those federal standards were applied to new and existing construction long before the creation of the ambulatory care use that currently in the International Building Code. Therefore, we have a situation where some (but not all) ambulatory care facilities were built very specific defend-in-place features. This subset of facilities was those that were certified by the federal government as "ambulatory surgical facilities." Many other medical facilities that would be classified today as ambulatory care were not required to have defend in place features, such a smoke compartmentation. The federal AHJs highly value these defend-in-place concepts and need retroactive standard. This appendix would be that standard.

This appendix would also be useful for those local and state jurisdictions that are specifically focused in ensuring the safety for existing ambulatory care. If a surgery center was constructed as recently as 2009, there would have been no defend in place features required by the ICC family of codes. Post adoption of the 2009 IBC, there would have been. This appendix could be used to assess post 2009 surgery centers and free standing emergency departments. It could also be used to bring those earlier facilities into compliance with the current standards at the discretion of the adopting jurisdiction.

The technical requirements are based on the current IBC language, as well as several concepts approved in the 2012 Group A changes. The significant difference is a relaxation of the sprinkler requirement for existing facilities. This appendix would only require retroactive sprinkling of unprotected construction, which is consistent with the overall concept of the current federal requirements.

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement and because the code change reflects an important and needed coordination effort to correlate the IFC with Federal Center for Medicaid and Medicare

Services (CMS) healthcare regulations for existing ambulatory care facilities. This material is appropriate for an appendix due to the relatively new nature of these types of facilities.

Assembly Action:

None

Final Hearing Results

F344-12

AS

Code Change No: F346-13

Original Proposal

Section(s): Appendix K (New), 508.1.5

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

APPENDIX K **REQUIREMENTS FOR FIREFIGHTER AIR REPLENISHMENT SYSTEMS**

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION K101 **GENERAL**

K101.1 Scope. Firefighter air replenishment systems (FARS) shall be provided in accordance with this appendix. The adopting ordinance shall specify building characteristics or special hazards that establish thresholds triggering a requirement for the installation of a FARS. The requirement shall be based upon the fire department's capability of replenishing firefighter breathing air during sustained emergency operations. Considerations shall include:

1. Building characteristics, such as number of stories above or below grade plane, floor area, type of construction, and fire-resistance of the primary structural frame to allow sustained firefighting operations based on a rating of not less than 2-hours.
2. Special hazards, other than buildings, that require unique accommodations to allow the fire department to replenish firefighter breathing air.
3. Fire department staffing level.
4. Availability of a fire department breathing air replenishment vehicle.

SECTION K102 **DEFINITIONS**

K102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIREFIGHTER AIR REPLENISHMENT SYSTEM (FARS). A permanently installed arrangement of piping, valves, fittings and equipment to facilitate the replenishment of breathing air in self contained breathing apparatus (SCBA) for firefighters engaged in emergency operations.

SECTION K103 **PERMITS**

K103.1 Permits. Permits shall be required to install and maintain a FARS. Permits shall be in accordance with Sections 103.2 and 103.3.

K103.2 Construction permit. A construction permit is required for installation of or modification to a FARS. The construction permit application shall include documentation of an acceptance and testing plan as specified in Section K105.

K103.3 Operational permit. An operational permit is required to maintain a FARS

SECTION K104 **DESIGN AND INSTALLATION**

K104.1 Design and installation. A FARS shall be designed and installed in accordance with Sections K104.2 through K104.15.

K104.2 Standards. Firefighter air replenishment systems shall be in accordance with Sections K104.2.1 and K104.2.2.

K104.2.1 Pressurized system components. Pressurized system components shall be designed and installed in accordance with ASME B31.3.

K104.2.2 Air quality. The system shall be designed to convey breathing air complying with NFPA 1989.

K104.3 Design and operating pressure. The minimum design pressure shall be 110 percent of the fire department's normal SCBA fill pressure. The system design pressure shall be marked in an approved manner at the supply connections, and adjacent to pressure gauges on any fixed air supply components. Pressure shall be maintained in the system within five percent of the design pressure.

K104.4 Cylinder refill rate. The FARS shall be capable of refilling breathing air cylinders of a size and pressure used by the fire department at a rate of not less than two empty cylinders in two minutes.

K104.5 Breathing air supply. Where a fire department mobile air unit is available, the FARS shall be supplied by an external mobile air connection in accordance with Section K104.13. Where a fire department mobile air unit is not available, a stored pressure air supply shall be provided in accordance with Section K104.4.1. A stored pressure air supply shall be permitted to be added to a system supplied by an external mobile air connection provided that a means to bypass the stored pressure air supply is located at the external mobile air connection.

K104.5.1. Stored pressure air supply. A stored pressure air supply shall be designed based on NFPA 1901, Chapter 24, except that provisions applicable only to mobile apparatus or not applicable to system design shall not apply. A stored pressure air supply shall be capable of refilling a minimum of fifty empty breathing air cylinders of a size and pressure used by the fire department

K104.5.2. Retrofit of external mobile air connection. A FARS not initially provided with an external mobile air connection due to the lack of a mobile air unit shall be retrofitted with an external mobile air connection if a mobile air unit becomes available. Where an external mobile air connection is provided, a means to bypass the stored pressure air supply shall be located at the external mobile air connection. The retrofit shall be completed not more than 12 months after notification by the fire code official.

K104.6 Isolation valves. System isolation valves that are accessible to the fire department shall be installed on the system riser to allow piping beyond any air cylinder refill panel to be blocked.

K104.7 Pressure relief valve. Pressure relief valves shall be installed at each point of supply and at the top or end of every riser. The relief valve shall meet the requirements of the CGA S-1.3 and shall not be field adjustable. Pressure relief valves shall discharge in a manner that does not endanger personnel who may be in the area. Valves, plugs or caps shall not be installed in the discharge of a pressure relief valve. Where discharge piping is used the end shall not be threaded.

K104.8 Materials and equipment. Pressurized system components shall be listed or approved for their intended use and rated for the maximum allowable design pressure in the system. Piping and fittings shall be stainless steel.

K104.9 Welded connections. Piping connections that are concealed shall be welded.

K104.10 Protection of piping. System piping shall be protected from physical damage in an approved manner.

K104.11 Compatibility. Fittings and connections intended to be used by the fire department shall be compatible with the fire department's equipment.

K104.12 Security. Connections to a FARS shall be safeguarded from unauthorized access in an approved manner.

K104.13 Fill stations. Firefighter air replenishment fill stations shall comply with Section K104.12.1 through K104.12.3.

K104.13.1 Location. Fill stations for refilling breathing air cylinders shall be located as follows:

1. Fill stations shall be provided at the fifth floor above and below the ground level floor and every third floor level thereafter.
2. On floor levels requiring fill stations, one fill station shall be provided adjacent to a required exit stair at a location designated by the Fire Code Official. In buildings required to have three or more exit stairs, additional fill stations shall be provided at a ratio of one fill station for every three stairways.

K104.13.2 Design Fill stations for breathing air cylinders shall be designed to meet the following requirements:

1. Pressure control. A pressure gauge and pressure-regulating devices and controls shall be provided to allow the operator to control the fill pressure and fill rate on each cylinder fill hose.
2. Valves controlling cylinder fill hoses shall be slow operating valves
3. A separate flow restriction device shall be provided on each fill hose.
4. A method shall be provided to bleed each cylinder fill hose.
5. The fill station shall be designed to provide a containment area that 1) fully encloses any cylinder being filled and flexible cylinder fill hoses, and 2) directs the energy from a failure away from personnel. Fill stations shall be designed to prohibit filling of cylinders that are not enclosed within the containment area.

Exception: Where required or approved by the Fire Chief, fill stations providing for the direct refilling of the firefighters' breathing air cylinders using Rapid Intervention Crew/Company Universal Air Connection (RIC/UAC) fittings shall be used in lieu of cylinder fill stations that utilize containment areas.

K104.13.3 Cylinder refill rate. Fill stations shall be capable of simultaneously filling two or more empty breathing air cylinders equivalent to those used by the fire department to their design pressure within two (2) minutes.

K104.14 External mobile air connection. An external mobile air connection shall be provided for fire department mobile air apparatus where required by Section K104.4 to supply the system with breathing air.

K104.14.1 Location. The location of the external mobile air connection shall be accessible to mobile air apparatus and approved by the fire chief.

K104.14.2 Protection from vehicles. A means of vehicle impact protection in accordance with Section 312 shall be provided to protect mobile air connections that are subject to vehicular impact.

K104.14.3 Clear space around connections. A working space of not less than 36 inches (762 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided and maintained in front of and to the sides of external mobile air connections.

K104.15 Air monitoring system. An approved air monitoring system shall be provided. The system shall automatically monitor air quality, moisture and pressure on a continual basis. The air monitoring system shall be equipped with a minimum of two content analyzers capable of detecting carbon monoxide, carbon dioxide, nitrogen, oxygen, moisture and hydrocarbons.

K104.15.1 Alarm conditions. The air monitoring system shall transmit a supervisory signal when any of the following levels are detected:

1. Carbon monoxide exceeds 5 ppm
2. Carbon dioxide exceeds 1,000 ppm
3. An oxygen level below 19.5 percent or above 23.5 percent
4. A nitrogen level below 75 percent or above 81 percent
5. Hydrocarbon (condensed) content exceeds 5 milligrams per cubic meter of air
6. The moisture concentration exceeds 24 ppm by volume
7. The pressure falls below 90% of the maintenance pressure specified in Section K104.2

K104.15.2 Alarm supervision, monitoring and notification. The air monitoring system shall be electrically supervised and monitored by an approved supervising station, or when approved, shall initiate audible and visual supervisory signals at a constantly attended location.

K104.15.3 Air quality status display. Air quality status shall be visually displayed at the external mobile air connection required by K104.13.

SECTION K105 **ACCEPTANCE TESTS**

K105.1 Acceptance tests. Upon completion of the installation, a FARS shall be acceptance tested to verify compliance with equipment manufacturers' instructions and design documents. Oversight of the acceptance tests shall be provided by a registered design professional. Acceptance testing shall include the following:

1. A pneumatic test in accordance with ASME B31.3 of the complete system at a minimum test pressure of 110 percent of the system design pressure using oil free dry air, nitrogen or argon shall be conducted.. Test pressure shall be maintained for a minimum of 24 hours. During this test, all fittings, joints and system components shall be inspected for leaks. Any defects in the system or leaks detected shall be documented and repaired.
2. A cylinder filling performance test shall be conducted to verify compliance with the required breathing air cylinder refill rate from the exterior mobile air connection and, where provided, a stored air pressure supply system.
3. The air quality monitoring system shall be tested to verify that: 1) Visual indicators required by Section K104.14.1 function properly, and 2) Supervisory signals are transmitted as required by Section K104.14.2 for each sensor based on a sensor function test.
4. Connections intended for fire department use shall be confirmed as compatible with the fire department's mobile air unit, SCBA cylinders and, where provided, RIC/UAC connections.
5. Air samples shall be taken from not less than two fill stations and submitted to an approved gas analysis laboratory to verify compliance with NFPA 1989. The FARS shall not be placed into service until a written report verifying compliance with NFPA 1989 has been provided to the code official.

SECTION K106 **INSPECTION, TESTING AND MAINTENANCE**

K106.1 Periodic inspection, testing, and maintenance. A FARS shall be continuously maintained in an operative condition and shall be inspected at least annually. At least quarterly, an air sample shall be taken from the system and tested to verify compliance with NFPA 1989. The laboratory test results shall be maintained onsite and readily available for review by the fire code official.

SECTION K107
REFERENCED STANDARDS

<u>ASME B31.3, 2012,</u>	<u>Process Piping</u>	<u>K104.2.1, K105.1</u>
<u>CGA S-1.3-2008</u>	<u>Pressure Relief Device Standards – Part 3 Stationary Storage Containers for Compressed Gases</u>	<u>K104.7</u>
<u>NFPA 1901-09</u>	<u>Standard for Automotive Fire Apparatus</u>	<u>K104.5.1,</u>
<u>NFPA 1989-13</u>	<u>Breathing Air Quality for Fire Emergency Services Respiratory Protection</u>	<u>K104.2.2, K105.1, K106.1</u>

Revise as follows:

508.1.5 Required features. The *fire command center* shall comply with NFPA 72 and shall contain the following features:

- 1 through 11. *(No change to current text)*
- 12. Schematic building plans indicating the typical floor plan and detailing the building core, *means of egress, fire protection systems, firefighter air replenishment system*, fire-fighting equipment and fire department access, and the location of *fire walls, fire barriers, fire partitions, smoke barriers* and smoke partitions.
- 13. through 18. *(No change to current text)*

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Breathing air is critical for firefighting operations. Historically, fire departments have supplied air bottles by means of a “bottle brigade”, whereby firefighters manually transport air bottles up stairways. This is usually accomplished by stationing a firefighter on alternating floors, and each firefighter carries two to four bottles at a time up two floors, passes them to the next firefighter, then goes down two flights of stairs and receives more air bottles from the firefighter stationed below. This process is extraordinarily firefighter intensive, and takes firefighters away from their primary mission of rescue and firefighting. Even when fires are insignificant or controlled by sprinklers, copious amounts of smoke and other combustion byproducts require the use of self contained breathing apparatus (SCBA) for extended periods of time to conduct search, rescue, suppression, and overhaul. These extended missions require a large number of air bottles to be transported to support the operation. Transporting bottles is not the highest and best use of highly trained firefighters – it is a costly solution to a serious problem that can be addressed by installing firefighter breathing air replenishment systems.

Technology exists at this point in time to address the issue using in-building air supply systems. Firefighter Breathing Air Systems were introduced in the late 1980’s. These systems are now required in a number of communities throughout the United States, and several hundred systems have been installed and are now operational. The system has been called a “standpipe for air”, which is an accurate description. The system consists of stainless steel, high pressure piping that is supplied by on site air storage, fire department air supply units, or both; a few systems have breathing air compressors installed. Air filling stations are then strategically located throughout the building, using either quick fill connections or rupture containment fill stations complying with NFPA 1901. These systems allow firefighters to refill breathing air cylinders inside the fire building, negating the required “bottle brigade”, and making more firefighters available for search, rescue, and fire suppression operations.

While not every jurisdiction will necessarily embrace this technology, there is a need to standardize the installation criteria in jurisdictions that determine the systems are needed. It is now being recognized as a basic principle of fire protection that once a community has identified an unacceptable risk that risk mitigation must occur to reduce that risk to a level that allows the fire department to be both efficient and effective in coping with it. Thus, an adoptable appendix to provide guidance to these jurisdictions is appropriate and needed in the International Fire Code. More and more jurisdictions are considering requiring these systems, and guidance from the International Fire Code is needed.

Cost Impact: This code change will add to the cost of construction

Analysis: A review of the standards proposed for inclusion in the code, NFPA 1901-09 and NFPA 1989-08, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013. ASME B31.3-04 and CGA S1.3 (2005) are currently referenced in the IFC. Updates in year editions will be accomplished by an administrative standards update code change to be heard by the ADM Code Development Committee.

Public Hearing Results

For staff analysis of the content of NFPA 1901-09, NFPA 1989-13 and CGA S-1.3-2008 relative to CP#28, Section 3.6, please visit: <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/ProposedStandards.pdf>

Committee Action:

Approved as Submitted

Committee Reason: The approval was based on the committee's judgment that the proposal generally provides a good option and flexibility for jurisdictions in determining where such a system would be required and includes adequate design, installation, testing, inspection and maintenance criteria. The committee expressed several concerns. First, it was suggested that if a fire department mobile air supply is providing the air to the system (per K104.5), then the air monitoring system (K105.15) should not be required. Second, concern was expressed based on testimony that the proposal could be considered proprietary because it is unclear if there is more than a single source for the equipment for the systems. Finally, cabinet installation details were not provided and could violate ADA rules.

Assembly Action:

None

Final Hearing Results

F346-12

AS

Code Change No: F347-13

Original Proposal

Section(s): Appendix K (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

APPENDIX K HIGH-RISE BUILDINGS - RETROACTIVE AUTOMATIC SPRINKLER REQUIREMENT

SECTION K101 SCOPE

K101.1 Scope. An automatic sprinkler system shall be installed in all existing high-rise buildings in accordance with the installation requirements and compliance schedule of this appendix.

SECTION K102 WHERE REQUIRED

K102.1 High-Rise Buildings. An automatic sprinkler system installed in accordance with Section 903.3.1.1 of the *International Fire Code* shall be provided throughout existing high-rise buildings.

Exceptions:

1. Airport traffic control towers.
2. Open parking structures.
3. Group U Occupancies.
4. Occupancies in Group F-2.

SECTION K103 COMPLIANCE

K103.1 Compliance Schedule. Building owners shall file a compliance schedule with the *fire code official* no later than 365 days after the first effective date of this code. The compliance schedule shall not exceed 12 years for an automatic sprinkler system retrofit.

SECTION K104 REFERENCED STANDARDS

ICC IFC-15 International Fire CodeK102.1

Reason: This proposal provides model code text for adoption by jurisdictions that choose to require existing high-rise buildings to be retrofitted with fire sprinklers. It is recognized that not all jurisdictions may choose to or have legal authority to enact a retroactive construction requirement of this nature, so the proposal has been suggested for inclusion in the IFC as an adoptable appendix.

Modern fire and building codes require complete automatic fire sprinkler protection and a variety of other safety features in new high-rise construction. Many older high-rise buildings lack automatic fire sprinkler protection and other basic fire protection features necessary to protect the occupants, emergency responders, and the structure itself. Without complete automatic fire sprinkler protection, fire departments cannot provide the level of protection that high-rise buildings demand.

Existing high-rise buildings that are not protected with fire sprinklers represent a significant hazard to the occupants and firefighters. Additionally, High-Rise fires can significantly impact a communities' infrastructure and the economic viability.

Between 2003 and 2006, there was an average of 13,400 reported structure fires in high-rise buildings annually. These incidents resulted in 62 civilian deaths, 490 civilian injuries, and \$179 million in direct property damage per year. Furthermore, from 1977 to 2009, 25 firefighters died from non-stress related cardiac death during fire suppression operations in high-rise buildings. By their very nature, high-rise fires present unique firefighting challenges that are extremely difficult for firefighters to mitigate without the presence of fire sprinkler systems. Some of these challenges include:

High-rise structure fires require significantly more resources, such as personnel and equipment, to extinguish than do fires in other types of occupancies. This further strains the responding fire department and firefighters.

Due to their height, smoke movement in high-rise structures is very different from that of other structures. Temperature gradients result in varying pressures throughout the structure, which can allow for the rapid, uncontrolled movement of smoke and flame (known as the "stack effect"). By design, exits from high-rise structures are limited. In an emergency, the movement of people out of a building is particularly difficult. A prime example of this hazard is the One Meridian Plaza fire. This fire occurred on the 22nd floor of the 38-story Meridian Bank Building and was reported to the Philadelphia Fire Department on February 23, 1991 at approximately 2040 hours and burned for more than 19 hours. The fire caused three firefighter fatalities and injuries to 24 firefighters. The 12-alarms brought 51 engine companies, 15 ladder companies, 11 specialized units, and over 300 firefighters to the scene. It was the largest high-rise office building fire in modern American history, completely consuming eight floors of the building, and was only controlled only when it reached a floor that was protected by automatic sprinklers. In 1999 the building was torn down amidst a storm of litigation. The HVAC and other utilities in some high-rises service multiple levels and can facilitate the spread of smoke and flame through a building.

Due to the height of the building, response times for the fire department to reach the actual fire itself are extended, contributing to larger fire growth thereby attributing to extensive smoke spread throughout the building.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Cost Impact: This change will increase the cost of operating an existing High-Rise building.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The approval was based on the committee's judgment that the proposal provides a good option and flexibility for jurisdictions in determining retroactive high-rise sprinkler requirements.

Assembly Action:

None

Final Hearing Results

F347-12

AS

Code Change No: F348-13

Original Proposal

Section(s): 907.2.6.2 (IBC [F] 907.2.6.2); IBC [F] 407.8

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

907.2.6.2 (IBC [F] 907.2.6.2) Group I-2. An automatic smoke detection system shall be installed in *corridors* in Group I-2 Condition 1 ~~nursing homes, long term care facilities, detoxification facilities~~ and spaces permitted to be open to the *corridors* by Section 407.2. The system shall be activated in accordance with Section 907.4. Group I-2 Condition 2 ~~Hospitals~~ shall be equipped with an automatic smoke detection system as required in Section 407.

Exceptions:

1. Corridor smoke detection is not required in smoke compartments that contain sleeping units where such units are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the corridor side of each sleeping unit and shall provide an audible and visual alarm at the care provider's station attending each unit.
2. Corridor smoke detection is not required in smoke compartments that contain sleeping units where sleeping unit doors are equipped with automatic door-closing devices with integral smoke detectors on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

IBC [F] 407.8 Automatic fire smoke detection. An automatic smoke detection system shall be installed in *corridors* in Group I-2 Condition 1 ~~nursing homes, long term care facilities, detoxification facilities~~ and spaces permitted to be open to the *corridors* by Section 407.2 ~~shall be equipped with an automatic fire detection system. The system shall be activated in accordance with Section 907.4. Group I-2 Condition 2~~ ~~Hospitals~~ shall be equipped with an automatic smoke detection system as required in Section 407.2 and 407.4.3.

Exceptions:

1. ~~Corridor~~ smoke detection is not required ~~where sleeping rooms in smoke compartments that contain sleeping units where such units~~ are provided with *smoke detectors* that comply with UL 268. Such detectors shall provide a visual display on the *corridor* side of each sleeping ~~room and unit and shall provide~~ an audible and visual alarm at the care provider's station attending each unit.
2. ~~Corridor~~ smoke detection is not required ~~where sleeping room in smoke compartments that contain sleeping units where sleeping unit~~ doors are equipped with automatic door-closing devices with integral *smoke detectors* on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

Reason: The proposed language in IBC 407.8 and IBC/IFC 907.2.6.2 coordinates with the proposed language automatic smoke detection system requirements in IBC 407.4.3 submitted by the Adhoc Health Care committee during Group A hearings. The intent is also to make the language consistent between the two sections.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement

representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved as it correlates with the clarifications made in the Group A code change cycle regarding the two overall types of Group I-2 occupancies (Condition 1 - nursing homes and Condition 2 – hospitals.) The revision also correlates the requirements in Section 407.8 with the requirements in Section 907.2.6.2.

Assembly Action:

None

Final Hearing Results

F348-12

AS

Code Change No: **F349-13**

Original Proposal

Section(s): 3203.4

Proponent: Darren Meyers, P.E., International Energy Conservation Consultants, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (dmeyers@ieccode.com)

Revise as follows:

3203.4 Class III commodities. Class III commodities are commodities of wood, paper, natural fiber cloth, or Group C plastics or products thereof, with or without pallets. Products are allowed to contain limited amounts of Group A or B plastics, such as metal bicycles with plastic handles, pedals, seats and tires. Group A plastics shall be limited in accordance with Section 3203.7.4. Examples of Class III commodities include, but are not limited to, the following:

- Aerosol, Level 1 (see Chapter 28)
- Biomass briquettes, bagged, totes and static piles
- Biomass pellets, bagged, totes and static piles
- Charcoal
- Combustible fiberboard
- Cork, baled
- Corn cobs, static piles
- Corn stover, baled and chopped
- Feed, bagged
- Fertilizers, bagged
- Firewood
- Food in plastic containers
- Forest residue, round wood or chipped (branches, bark, cross-cut ends, edgings and treetops)
- Furniture: wood, natural fiber, upholstered, non-plastic, wood or metal with plastic-padded and covered armrests
- Glycol in combustible containers not exceeding 25 percent
- Lubricating or hydraulic fluid in metal cans
- Lumber
- Mattresses, excluding foam rubber and foam plastics
- Noncombustible liquids in plastic containers having a capacity of more than 5 gallons (19 L)
- Paints, oil base, in metal cans
- Paper, waste, baled
- Paper and pulp, horizontal storage, or vertical storage that is banded or protected with *approved* wrap
- Paper in cardboard boxes
- Peanut hulls, bagged, totes and static piles
- Pillows, excluding foam rubber and foam plastics
- Plastic-coated paper food containers
- Plywood
- Rags, baled
- Recovered construction wood
- Rice hulls, bagged, totes and static piles
- Rugs, without foam backing
- Seasonal grasses, baled and chopped
- Straw, baled
- Sugar, bagged

Wood, baled
Wood chips, bagged, totes and static piles
Woody biomass, round wood or chipped (vase-shaped stubby bushes, bamboo, willows; branches, bark and stem wood)
Wood doors, frames and cabinets
Wood pellets, bagged, totes and static piles
Yarns of natural fiber and viscose

Reason: The additions clarify that certain “crop-residue” as solid, biomass feedstock as biofuel are appropriately identified as Class III commodities.

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCs), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCs was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers (ASABE).

Fire codes related to storage, handling, and pre-processing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and pre-processing technologies, the BFICOCs has identified changes in the IFC that benefit both industry and the public.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The proposal was disapproved as there is no specific fire data presented that was associated with storing these materials in a high-piled storage configuration.

Assembly Action:

None

Public Comments

Public Comment:

Darren Meyers, P.E., International Energy Conservation Consultants, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards, requests Approval as Modified by this Public Comment.

Modify this proposal as follows:

3203.4 Class III commodities. Class III commodities are commodities of wood, paper, natural fiber cloth, or Group C plastics or products thereof, with or without pallets. Products are allowed to contain limited amounts of Group A or B plastics, such as metal bicycles with plastic handles, pedals, seats and tires. Group A plastics shall be limited in accordance with Section 3203.7.4. Examples of Class III commodities include, but are not limited to, the following:

- Aerosol, Level 1 (see Chapter 28)
- Biomass briquettes, bagged, ~~totes~~ and static piles
- Biomass pellets, bagged, ~~totes~~ and static piles
- Charcoal
- Combustible fiberboard
- Cork, baled
- Corn cobs, static piles
- Corn stover, baled and chopped
- Feed, bagged
- Fertilizers, bagged
- Firewood

Food in plastic containers
 Forest residue, round wood or chipped (branches, bark, cross-cut ends, edgings and treetops)
 Furniture: wood, natural fiber, upholstered, non-plastic, wood or metal with plastic-padded and covered armrests
 Glycol in combustible containers not exceeding 25 percent
 Lubricating or hydraulic fluid in metal cans
 Lumber
 Mattresses, excluding foam rubber and foam plastics
 Noncombustible liquids in plastic containers having a capacity of more than 5 gallons (19 L)
 Paints, oil base, in metal cans
 Paper, waste, baled
 Paper and pulp, horizontal storage, or vertical storage that is banded or protected with *approved* wrap
 Paper in cardboard boxes
 Peanut hulls, bagged, ~~totes~~ and static piles
 Pillows, excluding foam rubber and foam plastics
 Plastic-coated paper food containers
 Plywood
 Rags, baled
 Recovered construction wood
 Rice hulls, bagged, ~~totes~~ and static piles
 Rugs, without foam backing
 Seasonal grasses, baled and chopped
 Straw, baled
 Sugar, bagged
 Wood, baled
 Wood chips, bagged, ~~totes~~ and static piles
 Woody biomass, round wood or chipped (vase-shaped stubby bushes, bamboo, willows; branches, bark and stem wood)
 Wood doors, frames and cabinets
 Wood pellets, bagged, ~~totes~~ and static piles
 Yarns of natural fiber and viscose

Commenter's Reason: The additions submitted to both the 2015 IFC and the 2015 revision cycle to NFPA 13-2006 via NFPA's Technical Committee on *Sprinkler System Discharge Criteria*, clarify that certain "crop-residue" as solid, biomass feedstock as biofuel are appropriately identified as Class III commodities. At the Public Hearings in Dallas, the IFC Committee requested specific fire data associated with these solid, biomass materials:

The tabulated data below was prepared by the Idaho National Laboratory (INL) Biological and Chemical Processing Group, to provide both the IFC Membership and the NFPA13 TC with: 1) Results for heat of combustion performed at INL using the standard test methods of ASTM D5865-10a, *Standard Test Method for Gross Calorific Value of Coal and Coke Using Either an Isoperibol or Adiabatic Bomb Calorimeter* and 2) Results that INL has drawn from n US and European literature based on values in the Phyllis database, the US DOE/EERE feedstock database, and selected literature sources, showing values for a range of cellulosic, solid biomass material.

This comparative and peer-reviewed literature demonstrates that the Higher Heating Values (HHVs) for the proposed set of biomass feedstock are less than those for the two grades of Coal (Bituminous and Sub-Bituminous), Charcoal, and Wood [Douglas fir wood and Douglas fir bark (i.e., Furniture)] required for the comparative classification of Class III Commodities in Section 3203.4 of the IFC and Table A.5.6.3.3 for Class III Commodities in the forthcoming 2016 Edition of NFPA 13.

Comparative Material	HHV (GJ Mg-1)	HHV (Btu/lb)
Bituminous Coal	31.7	13,629
Sub-Bituminous Coal	32.9	14,144
Charcoal ¹	31.0	13,328
Douglas fir	21.0	9,028
Biomass Material ²	HHV (GJ Mg-1)	HHV (Btu/lb)
Beech	20.3	8,727
Corn Cobs	17.8	7,652
(<i>Pellets</i>)	17.1	7,364
Corn stalks/stover	19.2	8,250
Hulls/Shells, Ag. Residue	20.5	8,838
Eucalyptus grandis	19.4	8,340
Miscanthus	19.7	8,499
(<i>Pellets</i>)	16.2	6,964

Poplar	20.7	8,899
Rice hulls	15.3	6,578
Rice straw	15.8	6,793
Sugar cane bagasse	17.3	7,438
Sorghum	19.4	8,353
(Pellets)	16.0	6,857
Switchgrass	19.2	8,237
(Pellets)	18.0	7,747
Wheat straw	17.5	7,524
Wood chips (max.)	20.8	8,946

NOTE 1: “Charcoal – Bagged, Standard” already exists as a Class III Commodity as classified by NFPA 13-2013 [Section No. A.5.6.3.3]

NOTE 2: As can be seen upon reviewing the tabulated data, not one of the Biomass Materials exceeds the HHV for Comparative Class III Materials.

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Final Hearing Results

F349-13

AMPC

Code Change No: **F350-13**

Original Proposal

Section(s): 2801.1, 2802.1, 2804.1, 2808.1, 2808.2, 2809.1, 2809.2, 202

Proponent: Darren Meyers, P.E., International Energy Conservation Consultants, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (dmeyers@ieccode.com)

Revise as follows:

CHAPTER 28 LUMBER YARDS, AGRO-INDUSTRIAL, SOLID BIOMASS AND WOODWORKING FACILITIES

SECTION 2801 GENERAL

2801.1 Scope. The storage, manufacturing and processing of solid biomass feedstock, timber, lumber, plywood, veneers and agro-industrial byproducts shall be in accordance with this chapter.

SECTION 2802 DEFINITIONS

2802.1 Definitions. The following terms are defined in Chapter 2:

AGRO-INDUSTRIAL.
BIOMASS.
STATIC PILES.
SOLID BIOFUEL.
SOLID BIOMASS FEEDSTOCK.

SECTION 2804 FIRE PROTECTION

2804.1 General. Fire protection in timber and lumber production mills, ~~and~~ plywood and veneer mills, and agro-industrial facilities shall comply with Sections 2804.2 through 2804.4.

SECTION 2808 STORAGE AND PROCESSING OF WOOD CHIPS, HOGGED MATERIAL, FINES, COMPOST, SOLID BIOMASS FEEDSTOCK, AND RAW PRODUCT ASSOCIATED WITH YARD WASTE, AGRO-INDUSTRIAL AND RECYCLING FACILITIES

2808.1 General. The storage and processing of wood chips, hogged materials, fines, compost, solid biomass feedstock and raw product produced from yard waste, debris, agro-industrial and recycling facilities shall comply with Sections 2808.2 through 2808.10.

2808.2 Storage site. Storage sites shall be level and on solid ground, elevated soil lifts or other all-weather surface. Sites shall be thoroughly cleaned before transferring wood products to the site.

SECTION 2809 EXTERIOR STORAGE OF FINISHED LUMBER AND SOLID BIOFUEL PRODUCTS

2809.1 General. Exterior storage of finished lumber and solid biofuel products shall comply with Sections 2809.1 through 2809.5.

2809.2 Size of piles. Exterior ~~lumber~~ storage shall be arranged to form stable piles with a maximum height of 20 feet (6096 mm). Piles shall not exceed 150,000 cubic feet (4248 m³) in volume.

2809.3 Fire apparatus access roads. Fire apparatus access roads in accordance with Section 503 shall be located so that a maximum grid system unit of 50 feet by 150 feet (15 240 mm by 45 720 mm) is established.

2809.4 Security. Permanent ~~lumber~~ storage areas shall be surrounded with an *approved* fence. Fences shall be a minimum of 6 feet (1829 mm) in height.

Exceptions:

1. Lumber piles inside of buildings and production mills for lumber, plywood and veneer.
2. Solid biofuel piles inside of buildings and agro-industrial processing facilities for solid biomass feedstock.

2809.5 Fire protection. An *approved* hydrant and hose system or portable fire-extinguishing equipment suitable for the fire hazard involved shall be provided for open storage yards. Hydrant and hose systems shall be installed in accordance with NFPA 24. Portable fire extinguishers complying with Section 906 shall be located so that the travel distance to the nearest unit does not exceed 75 feet (22 860 mm).

SECTION 202 GENERAL DEFINITIONS

AGRO-INDUSTRIAL. Technologies, methods and associated machinery used in transforming raw agricultural products into intermediate or consumable products.

BIOMASS. Plant or animal-based material of biological origin, including but not limited to materials originating from arboriculture, agriculture, aquaculture, horticulture and forestry, excluding material embedded in geological formations or transformed into fossil.

STATIC PILES. Piles in which processed wood product or solid, biomass feedstock is mounded and is not being turned or moved.

SOLID BIOFUEL. Densified biomass made with or without additives in the form of cubiform, polyhedral, polyhydric or cylindrical units, produced by compressing milled biomass.

SOLID BIOMASS FEEDSTOCK. The basic materials, including agricultural residues, including but not limited to corn cobs, corn stover, rice hulls, and peanut hulls; herbaceous crops, including but not limited to warm- and cool-seasonal grasses; forest residue, including but not limited to branches, bark, cross-cut ends, edgings and treetops; short-rotation woody crops, including but not limited to vase-shaped stubby bushes, bamboo, willows with five to ten-year rotations and their branches, bark and stem wood; agricultural waste, including but not limited to garden or park waste, grass or flower cuttings and hedge trimmings; and dried manure; from which biofuel is comprised, manufactured or made.

Reason: The proposed language facilitates fire control and reduces exposures to and from facilities storing and processing “crop-residue” as solid biomass feedstock for biofuel production.

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCs), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCs was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers (ASABE).

Fire codes related to storage, handling, and pre-processing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and pre-processing technologies, the BFICOCs has identified changes in the IFC that benefit both industry and the public.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The disapproval was based on the committee's judgment that the proposal has merit in recognizing emerging biofuel technology but needs additional work to be ready for the code. Issues with the proposal mentioned included the cumbersome nature of the SOLID BIOMASS FEEDSTOCK definition and its use of complicated, difficult to understand terms; that the proposal should take into account the seasonal increases in the volume of materials that will be stored yielding much larger piles; that the proposal should include provisions for indoor storage of these materials which appears to be a trend in portions of the country and that more guidance is needed on what types of fire protection systems would be appropriate for larger piles.

Assembly Action:

None

Public Comments

Public Comment:

Darren Meyers, P.E., International Energy Conservation Consultants, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

SECTION 202 GENERAL DEFINITIONS

~~**AGRO-INDUSTRIAL.** Technologies, methods and associated machinery used in a facility, or portion thereof, housing operations involving the transforming raw agricultural products into intermediate or consumable products.~~

~~**BIOMASS.** Plant or animal-based material of biological origin, including but not limited to materials originating from arboriculture, agriculture, aquaculture, horticulture and forestry, excluding material embedded in geological formations or transformed into fossil.~~

STATIC PILES. Piles in which processed wood product or solid, biomass feedstock is mounded and is not being turned or moved.

~~**SOLID BIOFUEL.** Densified biomass made with or without additives in the form of cubiform, polyhedral, polyhydric or cylindrical units, produced by compressing milled biomass.~~

~~**SOLID, BIOMASS FEEDSTOCK.** The basic materials, including agricultural residues, including but not limited to corn cobs, corn stover, rice hulls, and peanut hulls; herbaceous crops, including but not limited to warm and cool seasonal grasses; forest residue, including but not limited to branches, bark, cross-cut ends, edgings and treetops; short rotation woody crops, including but not limited to vase-shaped stubby bushes, bamboo, willows with five to ten year rotations and their branches, bark and stem wood; agricultural waste, including but not limited to garden or park waste, grass or flower cuttings and hedge trimmings; and dried manure; from which solid biofuel is comprised, manufactured or made.~~

(Portions of proposal not shown remain unchanged)

Commenter's Reason: The proposed language submitted to both the 2015 IFC and the 2015 revision cycle to NFPA 13-2006 to facilitate characterization of agro-industrial biomass manufacturing operations by the IFC Membership and NFPA 13 users. Submission to and review by the NFPA Technical Committee on *Sprinkler System Discharge Criteria*, addresses such things as Commodity (Class III - see also F349-13) and Occupancy classification (Ordinary Hazard – Group2), storage (indoors and out-), as well as sprinkler system and discharge criteria for facilities storing and processing crop-residue and/or animal-based materials as "solid biomass feedstock" for industrial-scale, biofuel production.

At the Public Hearings in Dallas, the IFC Committee stated "the proposal has merit." However, Disapproval was based on:

- 1) Cumbersomeness of the SOLID BIOMASS FEEDSTOCK definition;
Definitions (as modified) now use common language, are condensed and simplified.
- 2) Consideration for seasonal increases in volume of materials stored; and

Seasonal variances, sprinkler system selection and discharge criteria are addressed by material Commodity (Class III - see also F349-13) and Occupancy classifications (Ordinary Hazard – Group2), storage location (indoors and out-), and the submission to and review by the NFPA 13 Technical Committee on *Sprinkler System Discharge Criteria*.

- 3) Consideration for indoor storage of materials including appropriate sprinkler systems and discharge criteria

(Please see our response to 2) above.)

NOTE ALSO, that the BFICOCs has provided evidence to support a Class III Commodity classification in the form of results for heat of combustion performed at INL using the standard test methods of ASTM D5865-10a, *Standard Test Method for Gross Calorific Value of Coal and Coke Using Either an Isoperibol or Adiabatic Bomb Calorimeter* and 2) Results that INL has drawn from n US and European literature based on values in the Phyllis database, the US DOE/EERE feedstock database, and selected literature sources, showing values for a range of cellulosic, solid biomass material.

This comparative and peer-reviewed literature demonstrates that the Higher Heating Values (HHVs) for the proposed set of biomass feedstock are less than those for the two grades of Coal (Bituminous and Sub-Bituminous), Charcoal, and Wood [Douglas fir wood and Douglas fir bark (i.e., Furniture)] required for the comparative classification of Class III Commodities in Section 3203.4 of the IFC and Table A.5.6.3.3 for Class III Commodities in the forthcoming 2016 Edition of NFPA 13 (see also F349-13)

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCs), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCs was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers (ASABE).

Final Hearing Results

F350-13

AMPC

Code Change No: **F352-13**

Original Proposal

Section(s): 605.11

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Revise as follows:

605.11 Solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections 605.11.1 through 605.11.4, the *International Building Code* or International Residential code, and NFPA 70.

Reason: the 2012 IRC section M2302 refers to solar panel and have requirements that relate to this section.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing Results

The code change is contained in the [Updates to the 2013 Proposed Changes](http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf) posted on the ICC website. Please go to <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf> for more information.

Committee Action:

Approved as Submitted

Committee Reason: The approval was based on the committee's judgment that the proposal provides needed correlation with the IRC provisions on PV power systems.

Assembly Action:

None

Final Hearing Results

F352-12

AS

Code Change No: **F356-13**

Original Proposal

Section(s): 5003.11.3.11 (New)

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Add new text as follows:

5003.11.3.11 Storage Plan. A storage plan illustrating the intended storage arrangement, including the location and dimensions of aisles, and storage racks protected with in-rack sprinklers shall be provided.

Reason: This new section requires a storage plan for group M storage and display and group s storage occupancy. This plan is necessary for a complete plan review and inspection.

Cost Impact: The code change proposal will increase the cost of construction

Public Hearing Results

The code change is contained in the [Updates to the 2013 Proposed Changes](http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf) posted on the ICC website. Please go to <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf> for more information.

Committee Action:

Approved as Modified

Modify the proposal as follows:

5003.11.3.11 Storage Plan. A storage plan illustrating the intended storage arrangement, including the location and dimensions of aisles, and storage racks ~~protected with in-rack sprinklers~~ shall be provided.

Committee Reason: The committee agreed with the proponent's reason statement. The modification makes it clear that all racks for merchandise and storage must be shown in order to do a complete and accurate plan review.

Assembly Action:

None

Final Hearing Results

F356-13

AM

Code Change No: **F357-13**

Original Proposal

Section(s): 5301.1

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Revise as follows:

5301.1 Scope. Storage, use and handling of *compressed gases* in *compressed gas* containers, cylinders, tanks and systems shall comply with this chapter, including those gases regulated elsewhere in this code. Partially full *compressed gas* containers, cylinders or tanks containing residual gases shall be considered as full for the purposes of the controls required.

Liquefied natural gas for use as a vehicular fuel shall also comply with NFPA 52 and NFPA 59A.

Compressed gases classified as hazardous materials shall also comply with Chapter 50 for general requirements and chapters addressing specific hazards, including Chapters 58 (Flammable Gases), 60 (Highly Toxic and Toxic Materials), 63 (Oxidizers, Oxidizing Gases and Oxidizing Cryogenic Fluids) and 64 (Pyrophoric Materials).

LP-gas shall also comply with Chapter 61 and the *International Fuel Gas Code*

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Compressed natural gas (CNG) for use as a vehicular fuel shall comply with Chapter 23, NFPA 52 and the *International Fuel Gas Code*. Cutting and welding gases shall also comply with Chapter 35.
3. *Cryogenic fluids* shall comply with Chapter 55. ~~Liquefied natural gas for use as a vehicular fuel shall also comply with NFPA 52 and NFPA 59A.~~

~~*Compressed gases* classified as hazardous materials shall also comply with Chapter 50 for general requirements and chapters addressing specific hazards, including Chapters 58 (Flammable Gases), 60 (Highly Toxic and Toxic Materials), 63 (Oxidizers, Oxidizing Gases and Oxidizing Cryogenic Fluids) and 64 (Pyrophoric Materials).~~

~~LP-gas shall also comply with Chapter 61 and the *International Fuel Gas Code*.~~

Reason: Cryogenic fluids are not compress gases so they should not comply with this chapter then it should be an exception.

Move the three sections up to the top of the section show that you need to comply with this chapter plus others. This is a clearer format.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing Results

The code change is contained in the [Updates to the 2013 Proposed Changes](http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf) posted on the ICC website. Please go to <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf> for more information.

Committee Action: **Approved as Submitted**

Committee Reason: The committee agreed with the proponent that the reorganization of this section clarifies the requirements and improves the usability of the text.

Assembly Action: **None**

Final Hearing Results

F357-12 **AS**

Code Change No: **F359-13**

Original Proposal

Section(s): IFC 907.2.11.3 (IBC [F] 907.2.11.3) (New), 907.2.11.4 (IBC [F] 907.2.11.4) (New);

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

907.2.11.3 (IBC [F] 907.2.11.3) Installation near cooking appliances. Smoke alarms shall not be installed in the following locations unless this would prevent placement of a smoke alarm in a location required by Sections 907.2.11.1 or 907.2.11.2.

1. Ionization smoke alarms shall not be installed less than 20 feet (6.1 m) horizontally from a permanently installed cooking appliance.
2. Ionization smoke alarms with an alarm-silencing switch shall not be installed less than 10 feet (3 m) horizontally from a permanently installed cooking appliance.
3. Photoelectric smoke alarms shall not be installed less than 6 feet (1.8 m) horizontally from a permanently installed cooking appliance.

907.2.11.4 (IBC [F] 907.2.11.4) Installation near bathrooms. Smoke alarms shall be installed not less than 3 feet (0.91 m) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Sections 907.2.11.1 or 907.2.11.2.

(Renumber subsequent sections)

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal is intended to reduce nuisance alarms attributed to locating smoke alarms in close proximity to cooking appliances and bathrooms in which steam is produced. The proposed provisions are based on the findings in the Task Group Report - Minimum Performance Requirements for Smoke Alarm Detection Technology - February 22, 2008, and are consistent with similar requirements included in Section 29.8.3.4 of the 2010 and 2013 editions of NFPA 72.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

The code change is contained in the [Updates to the 2013 Proposed Changes](http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf) posted on the ICC website. Please go to <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf> for more information.

Committee Action:

Approved as Submitted

Committee Reason: These more specific requirements on smoke alarm placement were seen as necessary in the IFC. NFPA 72 contains these requirements but most inspectors may not have access to these specific provisions. It was felt that approving this was consistent with other actions to put specific items from standards in the IFC. There was some concern with the proposed

wording of 907.2.11.4 that it may be interpreted as requiring smoke alarms in occupancies not typically required to have smoke alarms. Specifically it may be interpreted that smoke alarms are required outside a shower area in a Group B occupancy.

Assembly Action:

None

Final Hearing Results

F359-12

AS

Code Change No: F360-13

Original Proposal

Section(s): 908.7 (IBC [F]908.7) through 908.7.7 (IBC [F]908.7.7) (New); 1103.9; 202

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Delete Sections 908.7 (IBC [F]908.7) and 908.7.1 (IBC [F]908.7.1) in their entirety and substitute as follows:

908.7 (IBC [F]908.7) Carbon monoxide alarms. ~~Group I or R occupancies located in a building containing a fuel-burning appliance or in a building which has an attached garage shall be equipped with single-station carbon monoxide alarms. The carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. An open parking garage, as defined in Chapter 2 of the *International Building Code*, or an enclosed parking garage ventilated in accordance with Section 404 of the *International Mechanical Code* shall not be considered an attached garage.~~

Exception: ~~Sleeping units or dwelling units which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:~~

- ~~1. The sleeping unit or dwelling unit is located more than one story above or below any story which contains a fuel-burning appliance or an attached garage;~~
- ~~2. The sleeping unit or dwelling unit is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and~~
- ~~3. The building is equipped with a common area carbon monoxide alarm system.~~

908.7.1 (IBC [F]908.7.1) Carbon monoxide detection systems. ~~Carbon monoxide detection systems, which include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075.~~

908.7 (IBC [F]908.7) Carbon monoxide alarms. Carbon monoxide alarms shall be installed in new buildings in accordance with Sections 908.7.1 through 908.7.7. Carbon monoxide alarms shall be installed in existing buildings in accordance with Section 1103.9.

908.7.1 (IBC [F]908.7.1) Where required. Carbon monoxide alarms shall be provided in Group I-1, I-4, and R occupancies in the locations specified in 908.7.2 where any of the conditions in Sections 908.7.1.1 through 908.7.1.4 exist.

908.7.1.1 (IBC [F]908.7.1.1) Fuel-burning appliances and fuel burning fireplaces. Carbon monoxide alarms shall be provided in dwelling units and sleeping units that contain a fuel-burning appliance or a fuel burning fireplace.

908.7.1.2 (IBC [F]908.7.1.2) Forced air furnaces. Carbon monoxide alarms shall be provided in dwelling units and sleeping units served by a fuel-burning, forced air furnace.

908.7.1.3 (IBC [F]908.7.1.3) Fuel burning appliances outside of dwelling units and sleeping units. Carbon monoxide alarms shall be provided in dwelling units and sleeping units located in buildings that contain fuel-burning appliances or fuel burning fireplaces.

Exception:

1. Carbon monoxide alarms shall not be required in dwelling units and sleeping units if there are no communicating openings between the fuel-burning appliance or fuel burning fireplace and the dwelling unit or sleeping unit.
2. Carbon monoxide alarms shall not be required in dwelling units and sleeping units if a carbon monoxide alarm is provided:
 - 2.1 In an approved location between the fuel burning appliance or fuel burning fireplace and the dwelling unit or sleeping unit, or
 - 2.2 On the ceiling of the room containing the fuel burning appliance or fuel burning fireplace.

908.7.1.4 (IBC [F]908.7.1.4) Private garages. Carbon monoxide alarms shall be provided in dwelling units and sleeping units in buildings with attached private garages.

Exceptions:

1. Carbon monoxide alarms shall not be required if there are no communicating openings between the private garage and the dwelling unit or sleeping unit.
2. Carbon monoxide alarms shall not be required in dwelling units and sleeping units located more than one story above or below a private garage.
3. Carbon monoxide alarm shall not be required if the private garage connects to the building through an open-ended corridor.

908.7.1.4.1 (IBC [F]908.7.1.4.1) Exempt garages. For determining compliance with Section 908.7.1.4, an *open parking garage* complying with Section 406.5 of the *International Building Code*, or an *enclosed parking garage* complying with Section 406.6 of the *International Building Code* shall not be considered a private garage.

908.7.2 (IBC [F]908.7.2) Locations. Where required by Section 908.7.1, carbon monoxide alarms shall be installed in the locations specified in Sections 908.7.2.1 through 908.7.2.2.

908.7.2.1 (IBC [F]908.7.2.1) Dwelling units. Carbon monoxide alarms shall be installed in dwelling units outside of each separate sleeping area in the immediate vicinity of the bedrooms. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

908.7.2.2 (IBC [F]908.7.2.2) Sleeping units. Carbon monoxide alarms shall be installed in sleeping units.

Exception: Carbon monoxide alarms shall be allowed to be installed outside of each separate sleeping area in the immediate vicinity of the sleeping unit where the sleeping unit or its attached bathroom do not contain a fuel burning appliance and are not served by a forced air furnace.

908.7.3 (IBC [F]908.7.3) Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than that required for overcurrent protection.

Exception: Where installed in buildings without commercial power, battery powered carbon monoxide alarms shall be an acceptable alternative.

908.7.4 (IBC [F]908.7.4) Listings. Carbon monoxide alarms shall be listed in accordance with UL 2034.

908.7.5 (IBC [F]908.7.5) Combination alarms. Combination carbon monoxide/smoke alarms shall be an acceptable alternative to carbon monoxide alarms. Combination carbon monoxide/smoke alarms shall be listed in accordance with UL 2034 and UL 217.

908.7.6 (IBC [F]908.7.6) Carbon monoxide detection systems. Carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide alarms and shall comply with Sections 908.7.6.1 through 908.7.6.3.

908.7.6.1 (IBC [F]908.7.6.1) General. Carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be listed in accordance with UL 2075.

908.7.6.2 (IBC [F]908.7.6.2) Locations. Carbon monoxide detectors shall be installed in the locations specified in Section 908.7.2. These locations supersede the locations specified in NFPA 720.

908.7.6.3 (IBC [F]908.7.6.3) Combination detectors. Combination carbon monoxide/smoke detectors installed in carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide detectors, provided they are listed in accordance with UL 2075 and UL 268.

908.7.7 Maintenance. Carbon monoxide alarms and carbon monoxide detection systems shall be maintained in accordance with NFPA 720. Carbon monoxide alarms and carbon monoxide detectors that become inoperable or begin producing end-of-life signals shall be replaced.

Add new text as follows:

SECTION 202 GENERAL DEFINITIONS

[B] PRIVATE GARAGE. A building or portion of a building in which motor vehicles used by the tenants of the building or buildings on the premises are stored or kept, without provisions for repairing or servicing such vehicles for profit

Revise as follows:

1103.9 Carbon monoxide alarms. Existing Group I-1, I-4 and R occupancies located in a building containing a fuel-burning appliance or a building which has an attached garage shall be provided with be equipped with single-station carbon monoxide alarms in accordance with Section 908.7, except that the carbon monoxide alarms shall be allowed to be solely battery powered.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

This proposal clarifies the requirements for carbon monoxide alarm installations. The intent is to provide protection for occupants of dwelling units and sleeping units within Group I-1, I-4, and R occupancies, which are locations where occupants are likely to be sleeping. Protection is provided from carbon monoxide that may be generated from faulty fuel burning appliance both inside and outside of the dwelling unit or sleeping unit, or from motor vehicle exhaust emanating from vehicles in attached private garages. It is assumed that a fuel burning appliance also includes a fuel burning fireplace. Specific details on the proposal are as follows.

1. The definition of PRIVATE GARAGE is identical to the IBC definition that was approved as part of proposal G59-12.
2. The entire section was reformatted to provide requirements in a more logical order.
3. Section 908.7 clarifies that the section only applies to new constructions, and that Section 1103.9 applies to existing occupancies.
4. Section 908.7.1 now only requires CO alarms are to be provided in Group I-1, I-4 and R occupancies, not all Group I occupancies as required in the existing code. It was felt that CO alarms were not warranted in Group I-2 and I-3 occupancies.

5. The code currently requires CO alarms to be provided in buildings that contain fuel burning appliances, with no additional details. Sections 908.7.1.1 through 908.7.1.3 describe the specific conditions when CO alarms are and are not required with regard to fuel-burning appliances.
6. Section 908.7.1.3 covers situations where dwelling units and sleeping units do not contain a fuel burning appliance, but such an appliance is included in a common area of the building. A good example of this is a multistory hotel that has all electric HVAC in the sleeping units, but perhaps a fireplace in the lobby, forced air heating in the common area, and a boiler in an equipment room. In these situations it is not reasonable to provide CO alarms in every sleeping room on every floor of the hotel, where there are no sources of carbon monoxide. Having a few strategically located Co alarms in common areas will provide a reasonable level of protection for the sleeping units and dwelling units.

Exception 1 to this section covers situations where CO emanating from the fuel burning appliance has no direct path to a dwelling unit or sleeping unit, such as a water heater in an equipment room that only has access from the exterior of the building, and no openings through which the CO can get to dwelling units or sleeping units. An interior door, between this equipment room and a dwelling unit, even if it is self-closing, would not allow this exception to be used.

Exception 2 to this section requires the installation of a one or more CO alarms in approved locations between fuel burning appliances and the nearest dwelling unit or sleeping unit, or on the ceiling of the room in which a fuel burning appliance is located. CO alarms are only required where there are communicating openings including ducts, concealed spaces, interior hallways, stairs and spaces between the fuel-burning appliance or fuel burning fireplace and the dwelling unit or sleeping unit where air can flow from the appliance to the dwelling unit or sleeping unit.

7. The code currently requires CO alarms to be provided when the building has an attached garage, other than an open parking garages or enclosed parking garages that contain mechanical ventilation systems. The proposal keeps these basic concepts, but clarifies that CO alarms are required when the building has an attached private garage (which is defined in section 406.3 of the IBC). The proposal also does not require CO alarms to be provided when the private garage is attached to the building by an open ended corridor (a term used in the IBC and IFC, which is commonly called a breeze way).
8. The code currently deferred to NFPA 720 for identifying where CO alarms are to be located. In order to make the code more user friendly, Section 908.7.2 now describes the locations where CO alarms are to be provided. In some cases this differs from NFPA 720 required locations, but again is intended to provide protection for CO emanating from motor vehicles in attached private garages or from faulty fuel-burning appliances located either inside or outside of the dwelling unit or sleeping unit. .
9. Section 908.7.3 clarifies that CO alarms are required to be hard wired into building power, similar to smoke alarms, with one exception.
10. Section 908.7.5 addresses combination CO/smoke alarms, which are listed and readily available.
11. Section 908.7.6 includes more comprehensive requirements for CO detection systems as compared to the current code requirements. It requires these systems to comply with NFPA 720, but clarifies that detectors must be installed in the locations specified in Section 908.7.2 (not as specified in NFPA 720). It also allows combination CO/smoke detectors to be used.
12. Section 908.7.7 covers maintenance of devices and requires inoperative and end-of-life CO alarms to be replaced.
13. Section 1103.9 was revised to avoid duplicating section 908.7 requirements, and to allow battery powered CO alarms to be used to retrofit existing buildings, which is consistent with the retrofit provisions in the IRC.

Cost Impact: This code change will not increase the cost of construction

Public Hearing Results

Committee Action:

Approved as Modified

Modify proposal as follows:

908.7 (IBC [F] 908.7) Carbon monoxide alarms. Carbon monoxide alarms shall be installed in new buildings in accordance with Sections 908.7.1 through 908.7.7. Carbon monoxide alarms shall be installed in existing buildings in accordance with Section 1103.9.

908.7.1 (IBC [F] 908.7.1) Where required. Carbon monoxide alarms shall be provided in Group I-1, I-2, I-4, and R occupancies in the locations specified in 908.7.2 where any of the conditions in Sections 908.7.1.1 through 908.7.1.4 exist.

908.7.1.1 (IBC [F] 908.7.1.1) Fuel-burning appliances and fuel burning fireplaces. Carbon monoxide alarms shall be provided in dwelling units and sleeping units that contain a fuel-burning appliance or a fuel burning fireplace.

908.7.1.2 (IBC [F] 908.7.1.2) Forced air furnaces. Carbon monoxide alarms shall be provided in dwelling units and sleeping units served by a fuel-burning, forced air furnace.

908.7.1.3 (IBC [F] 908.7.1.3) Fuel burning appliances outside of dwelling units and sleeping units. Carbon monoxide alarms shall be provided in dwelling units and sleeping units located in buildings that contain fuel-burning appliances or fuel burning fireplaces.

Exceptions:

1. Carbon monoxide alarms shall not be required in dwelling units and sleeping units if there are no communicating openings between the fuel-burning appliance or fuel burning fireplace and the dwelling unit or sleeping unit.
2. Carbon monoxide alarms shall not be required in dwelling units and sleeping units if a carbon monoxide alarm is provided:
 - 2.1 In an approved location between the fuel burning appliance or fuel burning fireplace and the dwelling unit or sleeping unit, or
 - 2.2 On the ceiling of the room containing the fuel burning appliance or fuel burning fireplace.

908.7.1.4 (IBC [F]908.7.1.4) Private garages. Carbon monoxide alarms shall be provided in dwelling units and sleeping units in buildings with attached private garages.

Exceptions:

1. Carbon monoxide alarms shall not be required if there are no communicating openings between the private garage and the dwelling unit or sleeping unit.
2. Carbon monoxide alarms shall not be required in dwelling units and sleeping units located more than one story above or below a private garage.
3. Carbon monoxide alarm shall not be required if the private garage connects to the building through an open-ended corridor.

908.7.1.4.1 (IBC [F]908.7.1.4.1) Exempt garages. For determining compliance with Section 908.7.1.4, an *open parking garage*, complying with Section 406.5 of the *International Building Code*, or an *enclosed parking garage* complying with Section 406.6 of the *International Building Code* shall not be considered a private garage.

908.7.2 (IBC [F]908.7.2) Locations. Where required by Section 908.7.1, carbon monoxide alarms shall be installed in the locations specified in Sections 908.7.2.1 through 908.7.2.2.

908.7.2.1 (IBC [F]908.7.2.1) Dwelling units. Carbon monoxide alarms shall be installed in dwelling units outside of each separate sleeping area in the immediate vicinity of the bedrooms. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

908.7.2.2 (IBC [F]908.7.2.2) Sleeping units. Carbon monoxide alarms shall be installed in sleeping units.

Exception: Carbon monoxide alarms shall be allowed to be installed outside of each separate sleeping area in the immediate vicinity of the sleeping unit where the sleeping unit or its attached bathroom do not contain a fuel burning appliance and are not served by a forced air furnace.

908.7.3 (IBC [F]908.7.3) Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than that required for overcurrent protection.

Exception: Where installed in buildings without commercial power, battery powered carbon monoxide alarms shall be an acceptable alternative.

908.7.4 (IBC [F]908.7.4) Listings. Carbon monoxide alarms shall be listed in accordance with UL 2034.

908.7.5 (IBC [F]908.7.5) Combination alarms. Combination carbon monoxide/smoke alarms shall be an acceptable alternative to carbon monoxide alarms. Combination carbon monoxide/smoke alarms shall be listed in accordance with UL 2034 and UL 217.

908.7.6 (IBC [F]908.7.6) Carbon monoxide detection systems. Carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide alarms and shall comply with Sections 908.7.6.1 through 908.7.6.3.

908.7.6.1 (IBC [F]908.7.6.1) General. Carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be listed in accordance with UL 2075.

908.7.6.2 (IBC [F]908.7.6.2) Locations. Carbon monoxide detectors shall be installed in the locations specified in Section 908.7.2. These locations supersede the locations specified in NFPA 720.

908.7.6.3 (IBC [F]908.7.6.3) Combination detectors. Combination carbon monoxide/smoke detectors installed in carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide detectors, provided they are listed in accordance with UL 2075 and UL 268.

908.7.7 Maintenance. Carbon monoxide alarms and carbon monoxide detection systems shall be maintained in accordance with NFPA 720. Carbon monoxide alarms and carbon monoxide detectors that become inoperable or begin producing end-of-life signals shall be replaced.

1103.9 Carbon monoxide alarms. Existing Group I-1, I-2, I-4 and R occupancies shall be provided with carbon monoxide alarms in accordance with Section 908.7, except that the carbon monoxide alarms shall be allowed to be solely battery powered.

Add new definition as follows:

**SECTION 202
GENERAL DEFINITIONS**

[B] PRIVATE GARAGE. A building or portion of a building in which motor vehicles used by the tenants of the building or buildings on the premises are stored or kept, without provisions for repairing or servicing such vehicles for profit

Committee Reason: The proposal was approved as the requirements associated with the more specific hazards within a building have been clarified. In addition, the placement of the CO alarms and CO detectors, where applicable, are more clearly specified. Previously the provisions were difficult to enforce. The modification simply added Group I-2 occupancies as it was requested that such occupancies be provided the same protection. The original provisions stated Group I occupancies which intended to address Group I-2.

Assembly Action:

None

Public Comments

Public Comment 1:

Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

**SECTION 915
CARBON MONOXIDE DETECTION**

~~908.7.1.1~~ **915.1 Carbon monoxide alarms detection.** Carbon monoxide ~~alarms detection~~ shall be installed in new buildings in accordance with Sections ~~908.7.4.1~~ 915.1.1 through ~~908.7.7~~ 915.6. Carbon monoxide ~~alarms detection~~ shall be installed in existing buildings in accordance with Section 1103.9.

~~908.7.4~~ **915.1.1 Where required.** Carbon monoxide ~~alarms detection~~ shall be provided in Group I-1, I-2, I-4, and R occupancies, ~~and in classrooms in Group E occupancies~~ in the locations specified in ~~908.7.2~~ 915.2 where any of the conditions in Sections ~~908.7.4.4~~ 915.1.2 through ~~908.7.4.4.4~~ 915.1.6 exist.

~~908.7.4.4~~ **915.1.2 Fuel-burning appliances and fuel burning fireplaces.** Carbon monoxide ~~alarms detection~~ shall be provided in dwelling units, ~~and sleeping units~~ and classrooms that contain a fuel-burning appliance or a fuel burning fireplace.

~~908.7.4.2~~ **915.1.3 Forced air furnaces.** Carbon monoxide ~~alarms detection~~ shall be provided in dwelling units, ~~and sleeping units~~ and classrooms served by a fuel-burning, forced air furnace.

Exception: Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms if carbon monoxide detection is provided in the first room or area served by each main duct leaving the furnace, and the carbon monoxide alarm signals are automatically transmitted to an approved location.

~~908.7.4.3~~ **915.1.4 Fuel burning appliances outside of dwelling units, ~~and sleeping units~~ and classrooms.** Carbon monoxide ~~alarms detection~~ shall be provided in dwelling units, ~~and sleeping units~~ and classrooms located in buildings that contain fuel-burning appliances or fuel burning fireplaces.

Exceptions:

1. Carbon monoxide ~~alarms detection~~ shall not be required in dwelling units, ~~and sleeping units~~ and classrooms if there are no communicating openings between the fuel-burning appliance or fuel burning fireplace and the dwelling unit, ~~or sleeping unit~~ or classroom.
2. Carbon monoxide ~~alarms detection~~ shall not be required in dwelling units, ~~and sleeping units~~ and classrooms if carbon monoxide ~~alarms detection~~ is provided in one of the following locations:
 - 2.1 In an approved location between the fuel burning appliance or fuel burning fireplace and the dwelling unit, ~~or sleeping unit~~ or classroom, or
 - 2.2 On the ceiling of the room containing the fuel burning appliance or fuel burning fireplace.

~~908.7.4.4~~ **915.1.5 Private garages.** Carbon monoxide ~~alarms detection~~ shall be provided in dwelling units, ~~and sleeping units~~ and classrooms in buildings with attached private garages.

Exceptions:

1. Carbon monoxide ~~alarms detection~~ shall not be required if there are no communicating openings between the private garage and the dwelling unit, ~~or sleeping unit~~ or classroom.
2. Carbon monoxide ~~alarms detection~~ shall not be required in dwelling units, ~~and sleeping units~~ and classrooms located more than one story above or below a private garage.

3. Carbon monoxide ~~alarms~~ detection shall not be required if the private garage connects to the building through an open-ended corridor.
4. Where carbon monoxide detection is provided in an approved location between openings to a private garage and dwelling units, sleeping units or classrooms, carbon monoxide detection shall not be required in the dwelling units, sleeping units or classrooms.

~~908.7.1.4.4~~ **915.1.6 Exempt garages.** For determining compliance with Section ~~908.7.1.4~~ 915.1.5, an *open parking garage*, complying with Section 406.5 of the *International Building Code*, or an *enclosed parking garage* complying with Section 406.6 of the *International Building Code* shall not be considered a private garage.

~~908.7.2~~ **915.2 Locations.** Where required by Section ~~908.7.1~~ 915.1.1, carbon monoxide ~~alarms~~ detection shall be installed in the locations specified in Sections ~~908.7.2.4~~ 915.2.1 through 915.2.3.

~~908.7.2.4~~ **915.2.1 Dwelling units.** Carbon monoxide ~~alarms~~ detection shall be installed in dwelling units outside of each separate sleeping area in the immediate vicinity of the bedrooms. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide ~~alarm~~ detection shall be installed within the bedroom.

~~908.7.2.2~~ **915.2.2 Sleeping units.** Carbon monoxide ~~alarms~~ detection shall be installed in sleeping units.

Exception: Carbon monoxide ~~alarms~~ detection shall be allowed to be installed outside of each separate sleeping area in the immediate vicinity of the sleeping unit where the sleeping unit or its attached bathroom do not contain a fuel burning appliance and are not served by a forced air furnace.

915.2.3 Group E occupancies. Carbon monoxide detection shall be installed in classrooms in Group E occupancies. Carbon monoxide alarm signals shall be automatically transmitted to an on-site location that is staffed by school personnel.

Exception: Carbon monoxide alarm signals shall not be required to be automatically transmitted to an on-site location that is staffed by school personnel in Group E occupancies with an occupant load of 30 or less.

915.3 Detection equipment. Carbon monoxide detection required by 915.1 through 915.2.3 shall be provided with carbon monoxide alarms complying with Section 915.4 or with carbon monoxide detection systems complying with Section 915.5.

915.4 Carbon monoxide alarms. Carbon monoxide alarms shall comply with Section 915.4.1 through 915.4.3.

~~908.7.3~~ **915.4.1 Power source.** Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than that required for overcurrent protection.

Exception: Where installed in buildings without commercial power, battery powered carbon monoxide alarms shall be an acceptable alternative.

~~908.7.4~~ **915.4.2 Listings.** Carbon monoxide alarms shall be listed in accordance with UL 2034.

~~908.7.5~~ **915.4.3 Combination alarms.** Combination carbon monoxide/smoke alarms shall be an acceptable alternative to carbon monoxide alarms. Combination carbon monoxide/smoke alarms shall be listed in accordance with UL 2034 and UL 217.

~~908.7.6~~ **915.5 Carbon monoxide detection systems.** Carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide alarms and shall comply with Sections ~~908.7.6.4~~ 915.5.1 through ~~908.7.6.3~~ 915.5.3.

~~908.7.6.4~~ **915.5.1 General.** Carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be listed in accordance with UL 2075.

~~908.7.6.2~~ **915.5.2 Locations.** Carbon monoxide detectors shall be installed in the locations specified in Section 915.2 ~~908.7.2~~. These locations supersede the locations specified in NFPA 720.

~~908.7.6.3~~ **915.5.3 Combination detectors.** Combination carbon monoxide/smoke detectors installed in carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide detectors, provided they are listed in accordance with UL 2075 and UL 268.

~~908.7.7~~ **915.6 Maintenance.** Carbon monoxide alarms and carbon monoxide detection systems shall be maintained in accordance with NFPA 720. Carbon monoxide alarms and carbon monoxide detectors that become inoperable or begin producing end-of-life signals shall be replaced.

(portions of proposal not shown remain unchanged)

Commenter's Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to

discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Proposals F180, F182, and F360 covered carbon monoxide alarms and were all approved in Dallas. F360 included requirements to protect occupants in dwelling units and sleeping unit from potential sources of carbon monoxide. F182 required CO detection in Group E occupancies, but differed from F360 in how the protection was to be provided.

This public comment was developed by the Fire Code Action Committee's carbon monoxide task group, which included a wide range of interested parties. It resolves conflicts between the proposals, and makes some editorial revisions to clarify the intent of the requirements, as follows:

- Changes references from "carbon monoxide alarm" to "carbon monoxide detection" in Sections 915.1, 915.2 and 1103.9 since detection can be provided by either carbon monoxide alarms or carbon monoxide detection systems.
- Maintains the same protection requirements for Group I-1, I-2, I-4, and R occupancies as approved in F360, and extends it to classrooms in Group E occupancies, except as noted below.
- For clarification, section 915.1.3 covers forced air furnaces that serve dwelling units, sleeping units or classrooms. This section only covers furnaces where a malfunction or crack in the heat exchange will cause CO to be spread from the combustion chamber to the ducts serving the building. This section does not apply to other heating systems such as boilers that circulate heated water to the building. An exception was added to 915.1.3 that allows carbon monoxide detection to be provided in the first room or area served by each main duct leaving the furnace, provided the carbon monoxide alarm signals are automatically transmitted to an approved location. Such an arrangement will detect carbon monoxide from the ducts and provide notification of the condition to an approved location, such as a reception area, engineering office, or central station. With this protection in place there is no need to provide carbon monoxide detection in each dwelling unit, sleeping unit or classroom served by the forced air furnace ducts.
- Section 915.2.3 requires carbon monoxide detection to be provided in classrooms in Group E occupancies, and not other rooms such as bathrooms, break rooms, interior hallways, gymnasiums, etc. The concept is to protect the students in rooms in which they spend a considerable amount of time in a relatively compact space. This is similar to the concept of only providing CO protection for sleeping units and dwelling units in Group I and R occupancies, and not rooms used for other purposes.
- F182 required carbon monoxide alarm signals in Group E occupancies to be automatically transmitted to a constantly attended on-site location. Proposed section 915.2.3 recognizes that many schools do not have a location that is constantly attended 24/7, requires carbon monoxide alarms to be automatically transmitted to an on-site location that is staffed by school personnel.
- Section 915.2.3 also includes an exception that does not require carbon monoxide alarms to be transmitted to an on-site location that is staffed by school personnel for very small schools with an occupant load of 30 or less. These occupancies may not have a location other than the classroom staffed by school personnel, and the carbon monoxide alarm in the classroom will provide the necessary alarm warning to the occupants. The trigger for 30 or less occupants corresponds with the fire alarm threshold for small Group E occupancies in 907.2.3.
- Section 915.3 was provided to clarify that protection can be provided by either carbon monoxide alarms or carbon monoxide detection systems, which are options recognized in F180, F360, and in the 2012 IFC.
- 915.1.5, Exception 4 was developed to provide an option for protecting against CO emanating from private garages by providing carbon monoxide detection in an approved location between openings to a private garage and dwelling units, sleeping units or classrooms. This same protection method is allowed for similar situations involving fuel burning appliances located outside of dwelling units, sleeping units and classrooms in section 915.1.4 Exceptions 2.

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Suggested code commentary for these requirements is as follows:

The Fire Code Action Committee task group that developed the carbon monoxide (CO) detection requirements included not only industry and fire service, but also users whose facilities must include this protection, so providing effective protection in a cost effective manner was a key consideration. An explanation of the approach used to provide protection is as follows:

Protected areas (in I-1, I-2, I-4, R and E occupancies) – Dwelling units, sleeping units and classrooms are the only rooms in the building that require protection from sources of potential CO.

Sources of potential CO that require protection – CO detection is required for protected areas ONLY when there is a potential source of CO that can enter or build up in the protected area. This includes (1) a fuel burning appliance in the protected area, (2) a fuel burning appliance in the building but outside of the protected area, (3) a forced air, fuel burning furnace that serves the protected area (not a boiler type system or electric heat), or (4) a private garage attached to the building. There are several exceptions in which CO detection is not required if it is unlikely for dangerous levels of CO to be transported to the protected areas, such as an open ended corridor between a private garage and the building.

Types of protection - The 2012 IFC and this proposal allow either single or multiple station CO alarms to be used to provide protection, or CO detection systems installed per NFPA 720. In some instances annunciation is required in certain approved locations, such as Group E occupancies. It is recognized that in many buildings, especially those that require fire alarm systems to be installed, a CO detection system will be the preferred design approach, since CO detectors or combination CO/smoke detectors can be connected to a required fire alarm system control unit.

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There are several scenarios for providing CO protection for protected areas, and it is rarely necessary to provide CO detection in every protected area, as shown in the following examples:

Fuel burning appliance in the protected area – Consider these examples:

- (1) A dwelling unit with a solid fuel burning fireplace, or a school classroom containing a gas-fired wall heater – CO detection must be provided in these protected areas, providing detection outside of the dwelling unit or classroom makes no sense because the potential source of CO is within each unit. The CO alarm signal from the classroom must be transmitted to the school office.
- (2) Apartment building with dwelling units that each contain a gas fireplace and gas fired water heater – CO detection must be provided in each dwelling unit. (This is likely to be a single or multiple station CO alarm).

Fuel burning appliance in the building but outside of the protected area – Consider these examples:

- (1) A school building with a boiler providing heat to the classrooms, and a water heater in the same equipment room – A single CO detection unit can be provided in the equipment room, with annunciation of the CO alarm in the school office. o other CO detection is needed unless there are other sources of potential CO in the building.
- (2) Hotel with a gas fireplace in the lobby and guest rooms on the same floor which are served by electric heat – A single CO detection unit can be installed on the lobby ceiling or in a location between the lobby fire place and the guest rooms. No other CO detection is needed unless there are other sources of potential CO in the building.
- (3) Apartment building, with gas-fired pool heater for the indoor swimming pool, all electric heat and water heating in the dwelling units – A single CO detection unit can be installed in the pool equipment room.

Forced air, fuel burning furnace in the building – Consider this example.

- (1) Patient rooms served by a forced air, fuel burning furnace – In this case providing CO detection on the furnace room ceiling does not necessarily provide protection for the patient rooms served by the furnace if, for example, the furnace has a cracked heat exchanger between the combustion chamber and the ducts serving the patient rooms, and it is pumping CO into those rooms. Protection can be provided by either (a) providing CO detection in all patient rooms served by the furnace (worst case condition) or (b) providing CO detection in the first room or area served by each main duct leaving the furnace, and a CO alarm signal that is automatically transmitted to an approved location, such as a nurses station or engineering office.

Private garage attached to a building – Consider these examples:

- (1) Hotel with an attached private garage with entrances onto the first and second floor, no gas appliances – Provide CO detection in each corridor leading from the garage entrances, prior to the first guest room on each floor.
- (2) Garden apartment with a breezeway attached to a private garage, no gas appliances – No CO detection is required to protect against CO emanating from the private garage.

Final Hearing Results

F360-13

AMPC

Code Change No: **G1-12**

Original Proposal

Section(s): 202

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care, Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee

Revise as follows:

24-HOUR CARE BASIS. The actual time that a person is an occupant within a facility for the purpose of receiving care. It shall not include a facility that is open for 24 hours and is capable of providing care to someone visiting the facility during any segment of the 24 hours.

Reason: This code change is intended to clarify the code. In the last code cycle a change was made attempting to clarify the phrase "24 hour basis". This term is used when determining the appropriate occupancy classification for facilities that provide custodial, medical or supervised care, including Group I-1, I-2 and R-4 (IBC 308.3, 308.4, 310.6). The committee accepted the clarification that in this context 24 hour care was intended to refer to the actual time that a patient is receiving care. Unfortunately, the code change used a phrase that was descriptive of the concept not the actual phrase used in the code. This code change corrects the term to the one used in code.

This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

Cost Impact: The proposed changes will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved to better align with CMS requirements and it better describes the time patients are actually provided with care.

Assembly Action:

None

Final Hearing Results

G1-12

AS

Code Change No: **G4-13**

Original Proposal

Section(s): IBC [F] 403.3.2 (IFC 914.3.1.2)

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration
(jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

IBC [F] 403.3.2 (IFC 914.3.1.2) Water supply to required fire pumps. In buildings that are more than 420 feet (128 m) in building height, required fire pumps shall be supplied by connections to no fewer than two water mains located in different streets. Separate supply piping shall be provided between each connection to the water main and the pumps. Each connection and the supply piping between the connection and the pumps shall be sized to supply the flow and pressure required for the pumps to operate.

Exception: Two connections to the same main shall be permitted provided the main is valved such that an interruption can be isolated so that the water supply will continue without interruption through no fewer than one of the connections.

Reason: The text in this section originated with Proposal G46-07/08. That proposal was accepted based on a public comment that had a reason statement that began with "*The purpose of this public comment is to increase the reliability of fire sprinkler systems in very tall buildings, those that exceed 420 feet in height, by requiring a minimum of two risers for each sprinkler zone and pumps to be supplied by a minimum of two connections to the municipal distribution system.*" Although Section 403.3.1, which was also created by the same public comment included the 420 foot threshold, the threshold was clearly overlooked in the text of 403.3.2. The text as written technically applies to any high-rise building, which comes at very significant cost, yet there is no documented justification as a basis for applying the code in that manner. The proposed revision resolves the apparent oversight in the current code text.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee approved the code change based on the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

G4-13

AS

Code Change No: **G7-12**

Original Proposal

Section(s): 202

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Proponent: Gregg Achman, Hearth & Home Technologies (achmang@hearthnhome.com)

Revise as follows:

[M] CHIMNEY. A primarily vertical enclosure structure containing one or more passageways flues, for conveying flue gases to the outside the purpose of carrying gaseous products of combustion and air from a fuel burning appliance to the outdoor atmosphere.

Factory-built chimney. A listed and labeled chimney composed of factory-made components, assembled in the field in accordance with manufacturer's instructions and the conditions of the listing.

Masonry chimney. A field-constructed chimney composed of solid masonry units, bricks, stones, or concrete.

Metal chimney. A field-constructed chimney of metal.

Reason: This provides common language for the definition of a CHIMNEY in the IBC with both the IMC and IFGC.

Cost Impact: The code change proposal will not increase cost of the construction.

Public Hearing Results

This code change was heard by the IMC code development committee.

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved as submitted based upon the proponent's reason.

Assembly Action:

None

Final Hearing Results

G7-12

AS

Code Change No: **G9-12**

Original Proposal

Section(s): 202

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Proponent: Gregory R. Keith, Professional heuristic Development, representing The Boeing Company (grkeith@mac.com)

Delete and Substitute as follows:

SECTION 202 DEFINITIONS

~~**EXIT, HORIZONTAL.** A path of egress travel from one building to an area in another building on approximately the same level, or a path of egress travel through or around a wall or partition to an area on approximately the same level in the same building, which affords safety from fire and smoke from the area of incidence and areas communicating therewith.~~

HORIZONTAL EXIT. An exit component consisting of fire-resistance rated construction and opening protectives intended to compartmentalize portions of a building thereby creating refuge areas that afford safety from the fire and smoke from the area of fire origin.

Reason: This proposed definition clarifies what a horizontal exit actually is. Clearly, it is not a path of egress travel as is currently stated. Contained within the definition of "EXIT," a horizontal exit is classified as an "exit component." Section 1025 provides for the physical construction requirements intended to segregate portions of the building and intended to create refuge areas. The proposed definition more accurately describes the general nature of the horizontal exit and leaves the specifics of the various building configuration and fire-resistance rating options to Section 1025.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

This code change was heard by the IBC Means of Egress code development committee.

Committee Action:

Approved as Submitted

Committee Reason: The revised definition for 'horizontal exit' will provide clarity to the code. The phrases "travel through or around" and "approximately the same level" in the current definition is difficult to understand.

Assembly Action:

None

Final Hearing Results

G9-12

AS

Code Change No: G14-13

Original Proposal

Section(s): IBC [F] 421, Table 509.1, 202; IFC 5808 (New); 5802.1, 202

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

IBC SECTION 421 HYDROGEN CUTOFF GAS ROOMS

[F] 421.1 General. Where required by the International Fire Code, hydrogen ~~cutoff~~ gas rooms shall be designed and constructed in accordance with Sections 421.1 through 421.8.

[F] 421.2 Definitions. The following terms are defined in Chapter 2:

GASEOUS HYDROGEN SYSTEM.

HYDROGEN CUTOFF GAS ROOM.

[F] 421.3 Location. Hydrogen ~~cutoff~~ gas rooms shall not be located below grade.

[F] 421.4 Design and construction. Hydrogen ~~cutoff~~ gas rooms not classified as Group H shall be classified with respect to occupancy in accordance with Section 302.1 and separated from other areas of the building in accordance with Section 509.1 by not less than 1-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both; or as required by Section 508.2, 508.3 or 508.4, as applicable .

[F] 421.4.1 Opening protectives Pressure control. ~~Doors within the fire barriers, including doors to corridors, shall be self-closing in accordance with Section 716. Interior door openings shall be electronically interlocked to prevent operation of the hydrogen system when doors are opened or ajar or the room shall be provided with a mechanical exhaust ventilation system designed in accordance with Section 421.4.1.1.~~ Hydrogen gas rooms shall be provided with a ventilation system designed to maintain the room at a negative pressure in relation to surrounding rooms and spaces.

[F] 421.4.1.1 Ventilation alternative. ~~Where an exhaust system is used in lieu of the interlock system required by Section 421.4.1, exhaust ventilation systems shall operate continuously and shall be designed to operate at a negative pressure in relation to the surrounding area. The average velocity of ventilation at the face of the door opening with the door in the fully open position shall not be less than 60 feet per minute (0.3048 m/s) and not less than 45 feet per minute (0.2287 m/s) at any point in the door opening.~~

[F] 421.4.2 Windows. Operable windows in interior walls shall not be permitted. Fixed windows shall be permitted where in accordance with Section 716.

[F] 421.5 Exhaust Ventilation. ~~Cutoff Gas~~ Gas rooms shall be provided with mechanical exhaust ventilation in accordance with the applicable provisions for repair garages in Chapter 5 of Section 502.16.1 of the *International Mechanical Code*.

[F] 421.6 Gas detection system. Hydrogen ~~cutoff~~ gas rooms shall be provided with an approved flammable gas detection system in accordance with Sections 421.6.1 through ~~421.6.3~~ 421.6.4.

[F] 421.6.1 System design. The flammable gas detection system shall be listed for use with hydrogen and any other flammable gases used in the room. The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammability limit (LFL) for the gas or mixtures present at their anticipated temperature and pressure.

[F] 421.6.2 Gas detection system components. Gas detection system control units shall be listed and labeled in accordance with UL 864 or UL 2017. Gas detectors shall be listed and labeled in accordance with UL 2075 for use with the gases and vapors being detected.

[F] ~~421.6.3~~ 421.6.2 Operation. Activation of the gas detection system shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals both inside and outside of the ~~cutoff~~ gas room.
2. Activation of the mechanical exhaust ventilation system.

[F] ~~421.6.4~~ 421.6.3 Failure of the gas detection system. Failure of the gas detection system shall result in activation of the mechanical exhaust ventilation system, cessation of hydrogen generation and the sounding of a trouble signal in an approved location.

[F] 421.7 Explosion control. Explosion control shall be provided ~~in accordance with Chapter 9 of the International Fire Code where required by Section [F] 414.5.1.~~ Mechanical ventilation and gas detection systems shall be connected to a standby power system in accordance with Chapter 27.

**IBC TABLE 509.1
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Hydrogen cutoff <u>gas</u> rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.

(Portions of table not shown remain unchanged)

**IBC SECTION 202
DEFINITIONS**

[F] HYDROGEN CUTOFF GAS ROOM. A room or space that is intended exclusively to house a gaseous hydrogen system.

Add new IFC text as follows:

**SECTION 5808
HYDROGEN GAS ROOMS**

5808.1 General. Where required by the International Fire Code, hydrogen gas rooms shall be designed and constructed in accordance with Sections 5808.1 through 5808.7 and the *International Building Code*.

5808.2 Location. Hydrogen gas rooms shall not be located below grade.

5808.3 Design and construction. Hydrogen gas rooms not exceeding the maximum allowable quantities in Table 5003.1.1(1) shall be separated from other areas of the building in accordance with Section 509.1 of the *International Building Code*.

5808.3.1 Pressure control. Hydrogen gas rooms shall be provided with a ventilation system designed to maintain the room at a negative pressure in relation to surrounding rooms and spaces.

5808.3.2 Windows. Operable windows in interior walls shall not be permitted. Fixed windows shall be permitted where in accordance with Section 716 of the *International Building Code*.

5808.4 Exhaust Ventilation. Gas rooms shall be provided with mechanical exhaust ventilation in accordance with the applicable provisions of Section 502.16.1 of the *International Mechanical Code*.

5808.5 Gas detection system. Hydrogen gas rooms shall be provided with an approved flammable gas detection system in accordance with Sections 5808.5.1 through 5808.5.4.

5808.5.1 System design. The flammable gas detection system shall be listed for use with hydrogen and any other flammable gases used in the room. The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammability limit (LFL) for the gas or mixtures present at their anticipated temperature and pressure.

5808.5.2 Gas detection system components. Gas detection system control units shall be listed and labeled in accordance with UL 864 or UL 2017. Gas detectors shall be listed and labeled in accordance with UL 2075 for use with the gases and vapors being detected.

5808.5.3 Operation. Activation of the gas detection system shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals both inside and outside of the gas room.
2. Activation of the mechanical exhaust ventilation system.

5808.5.4 Failure of the gas detection system. Failure of the gas detection system shall result in activation of the mechanical exhaust ventilation system, cessation of hydrogen generation and the sounding of a trouble signal in an approved location.

5808.6 Explosion control. Explosion control shall be provided where required by Section 911.

5808.7 Standby power. Mechanical ventilation and gas detection systems shall be connected to a standby power system in accordance with Chapter 6.

Add new IFC definition as follows:

IFC SECTION 202 DEFINITIONS

GASEOUS HYDROGEN SYSTEM. An assembly of piping, devices and apparatus designed to generate, store, contain, distribute or transport a nontoxic, gaseous hydrogen containing mixture having at least 95-percent hydrogen gas by volume and not more than 1-percent oxygen by volume. Gaseous hydrogen systems consist of items such as *compressed gas* containers, reactors and appurtenances, including pressure regulators, pressure relief devices, manifolds, pumps, compressors and interconnecting piping and tubing and controls.

HYDROGEN GAS ROOM. A room or space that is intended exclusively to house a *gaseous hydrogen system*.

Revise as follows:

5802.1 Definitions. The following terms are defined in Chapter 2:

FLAMMABLE GAS.

FLAMMABLE LIQUEFIED GAS.

GASEOUS HYDROGEN SYSTEM.

HYDROGEN GAS ROOM.

**METAL HYDRIDE.
METAL HYDRIDE STORAGE SYSTEM.**

Reason:

IBC Changes: The purpose of this submittal is cleanup of language, correlation with NFPA 2 "Hydrogen Technologies Code", and correlation with other portions of the IBC. NFPA 2 has been formed to provide a source document for the storage, use and handling of hydrogen and much work has gone into refining terms and requirements. For consistency the concepts and terms within the IFC, the IBC and NFPA should correlate for effective and efficient application of hydrogen technologies.

From the 2011 edition of NFPA 2:

Origin and Development of NFPA 2

"With the increased interest in hydrogen being used as a fuel source, the National Fire Protection Association was petitioned to develop an all-encompassing document that establishes the necessary requirements for hydrogen technologies. In 2006, the Technical Committee on Hydrogen Technology was formed and tasked to develop a document that addresses all aspects of hydrogen storage, use, and handling, that draws from existing NFPA codes and standards, and that identifies and fills technical gaps for a complete functional set of requirements for code users and enforcers. This document is also structured so that it works seamlessly with building and fire codes."

The term "Hydrogen Cutoff Room" is proposed to be changed to "Hydrogen Gas Room" which is the phrase used by NFPA 2 for consistency. The change would be reflected in the definition, titles and technical language found within the code.

Section [F]421.4 is modified to improved correlation of this section with Section 509 Incidental Uses. Hydrogen cutoff rooms not classified as a Group H are in Table 509 as an Incidental use. The specifications for separation are covered by 509.4.1. The "hydrogen cutoff room" was not intended to be an H Group, so the language referring to Group separated or non-separated uses is not necessary. That language will apply if a Group H classification is determined to apply. The change provides a cleaner, easier to understand application of these requirements

Section [F] 421.4.1 is modified to be consistent with the newer requirements found within NFPA 2 for hydrogen gas rooms.

Section [F]421.5 is modified to clarify that it is an "exhaust" ventilation system that is required and a pointer to the specific section in the IMC has been added instead of the generic Chapter 5 reference for clarity.

A new Section [F] 421.6.2 has been added to provide standards for the required gas detection system. This language and the referenced standards already exists in the IFC,IBC and IMC for when gas detection systems are required to be installed.

Section [F]421.6.2, Item 2 and Section [F]421.6.3 are proposed to be modified by adding the word "exhaust" to add clarity that it is a "mechanical exhaust system" that is be required.

Section [F]421.7 has been modified to point to the explosion control requirements located within Chapter 4 of the IBC, they are a match for the requirements of the IFC.

IBC Changes: This is duplication of language that is currently in the building code. Because most of the requirements for hydrogen are in the Fire Code, there is a tendency to only use the IFC along with the IFGC and IMC for detailed requirements. The existence of the allowance for use of a hydrogen gas room is not always recognized. By copying the existing language to this new section in the fire code officials will not only provide for increase awareness on the application of hydrogen gas rooms, but will also highlight the systems that must be maintained.

The only modifications made were to fit the language to application out of this code as compared to the IBC as has been done with similar language duplication on other topics.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

**IBC SECTION 421
HYDROGEN FUEL GAS ROOMS**

[F] 421.1 General. Where required by the *International Fire Code*, hydrogen fuel gas rooms shall be designed and constructed in accordance with Sections 421.1 through 421.8.

[F] 421.2 Definitions. The following terms are defined in Chapter 2:

GASEOUS HYDROGEN SYSTEM.

HYDROGEN FUEL GAS ROOM.

[F] **421.3 Location.** Hydrogen fuel gas rooms shall not be located below grade.

[F] **421.4 Design and construction.** Hydrogen fuel gas rooms not classified as Group H shall be separated from other areas of the building in accordance with Section 509.1.

[F] **421.4.1 Pressure control.** Hydrogen fuel gas rooms shall be provided with a ventilation system designed to maintain the room at a negative pressure in relation to surrounding rooms and spaces.

[F] **421.4.2 Windows.** Operable windows in interior walls shall not be permitted. Fixed windows shall be permitted where in accordance with Section 716.

[F] **421.5 Exhaust Ventilation.** Hydrogen fuel gas rooms shall be provided with mechanical exhaust ventilation in accordance with the applicable provisions of Section 502.16.1 of the *International Mechanical Code*.

[F] **421.6 Gas detection system.** Hydrogen fuel gas rooms shall be provided with an approved flammable gas detection system in accordance with Sections 421.6.1 through 421.6.4.

[F] **421.6.1 System design.** The flammable gas detection system shall be listed for use with hydrogen and any other flammable gases used in the hydrogen fuel gas room. The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammability limit (LFL) for the gas or mixtures present at their anticipated temperature and pressure.

[F] **421.6.2 Gas detection system components.** Gas detection system control units shall be listed and labeled in accordance with UL 864 or UL 2017. Gas detectors shall be listed and labeled in accordance with UL 2075 for use with the gases and vapors being detected.

[F] **421.6.3 Operation.** Activation of the gas detection system shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals both inside and outside of the hydrogen fuel gas room.
2. Activation of the mechanical exhaust ventilation system.

[F] **421.6.4 Failure of the gas detection system.** Failure of the gas detection system shall result in activation of the mechanical exhaust ventilation system, cessation of hydrogen generation and the sounding of a trouble signal in an approved location.

[F] **421.7 Explosion control.** Explosion control shall be provided where required by Section [F] 414.5.1. Mechanical ventilation and gas detection systems shall be connected to a standby power system in accordance with Chapter 27.

**IBC TABLE 509.1
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Hydrogen <u>fuel</u> gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.

(Portions of table not shown remain unchanged)

**IBC SECTION 202
DEFINITIONS**

[F] **HYDROGEN FUEL GAS ROOM.** A room or space that is intended exclusively to house a gaseous hydrogen system.

Add new IFC text as follows:

**SECTION 5808
HYDROGEN FUEL GAS ROOMS**

5808.1 General. Where required by this code, hydrogen fuel gas rooms shall be designed and constructed in accordance with Sections 5808.1 through 5808.7 and the *International Building Code*.

5808.2 Location. Hydrogen fuel gas rooms shall not be located below grade.

5808.3 Design and construction. Hydrogen fuel gas rooms not exceeding the maximum allowable quantities in Table 5003.1.1(1) shall be separated from other areas of the building in accordance with Section 509.1 of the *International Building Code*.

5808.3.1 Pressure control. Hydrogen fuel gas rooms shall be provided with a ventilation system designed to maintain the room at a negative pressure in relation to surrounding rooms and spaces.

5808.3.2 Windows. Operable windows in interior walls shall not be permitted. Fixed windows shall be permitted where in accordance with Section 716 of the *International Building Code*.

5808.4 Exhaust Ventilation. Hydrogen fuel gas rooms shall be provided with mechanical exhaust ventilation in accordance with the applicable provisions of Section 502.16.1 of the *International Mechanical Code*.

5808.5 Gas detection system. Hydrogen fuel gas rooms shall be provided with an approved flammable gas detection system in accordance with Sections 5808.5.1 through 5808.5.4.

5808.5.1 System design. The flammable gas detection system shall be listed for use with hydrogen and any other flammable gases used in the hydrogen fuel gas room. The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammability limit (LFL) for the gas or mixtures present at their anticipated temperature and pressure.

5808.5.2 Gas detection system components. Gas detection system control units shall be listed and labeled in accordance with UL 864 or UL 2017. Gas detectors shall be listed and labeled in accordance with UL 2075 for use with the gases and vapors being detected.

5808.5.3 Operation. Activation of the gas detection system shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals both inside and outside of the hydrogen fuel gas room.
2. Activation of the mechanical exhaust ventilation system.

5808.5.4 Failure of the gas detection system. Failure of the gas detection system shall result in activation of the mechanical exhaust ventilation system, cessation of hydrogen generation and the sounding of a trouble signal in an approved location.

5808.6 Explosion control. Explosion control shall be provided where required by Section 911.

5808.7 Standby power. Mechanical ventilation and gas detection systems shall be connected to a standby power system in accordance with Chapter 6.

Add new IFC definition as follows:

IFC SECTION 202 DEFINITIONS

GASEOUS HYDROGEN SYSTEM. An assembly of piping, devices and apparatus designed to generate, store, contain, distribute or transport a nontoxic, gaseous hydrogen containing mixture having at least 95-percent hydrogen gas by volume and not more than 1-percent oxygen by volume. Gaseous hydrogen systems consist of items such as *compressed gas* containers, reactors and appurtenances, including pressure regulators, pressure relief devices, manifolds, pumps, compressors and interconnecting piping and tubing and controls.

HYDROGEN FUEL GAS ROOM. A room or space that is intended exclusively to house a *gaseous hydrogen system*.

Revise as follows:

5802.1 Definitions. The following terms are defined in Chapter 2:

FLAMMABLE GAS.

FLAMMABLE LIQUEFIED GAS.

GASEOUS HYDROGEN SYSTEM.

HYDROGEN FUEL GAS ROOM.

METAL HYDRIDE.

METAL HYDRIDE STORAGE SYSTEM.

Committee Reason: The committee agreed with the proponent's reason statement that the code change provides needed revisions to the IBC and the addition of requirements in the IFC on emergent hydrogen fuel technology. Approval is also consistent with committee action on related code changes F254-13, F256-13 and F303-13. The modification sets hydrogen fuel gas rooms apart from the currently defined gas room. It was pointed out by the committee that new IFC Section 5808.5.3 should be reviewed for possible violation of the Americans with Disabilities Act (ADA).

Assembly Action:

None

Public Comments

Public Comment:

Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

604.2.19 (IBC [F] 2702.2.19) Hydrogen fuel gas rooms. Standby power shall be provided for hydrogen fuel gas rooms as required in Section 5808.7.

5808.7 Standby power. Mechanical ventilation and gas detection systems shall be connected to a standby power system in accordance with Section 604 Chapter 6.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

Section 5808.7 introduced new requirements for standby power systems for hydrogen fuel gas rooms. This proposal correlates the standby power requirements for these facilities with the [proposal F59, which reformatted all references to emergency and standby power. No substantive changes were made a result of this public comment.

Final Hearing Results

G14-13

AMPC

Code Change No: **G27-12**

Original Proposal

Section(s): 303.1.4, 305.1.1 (IFC [B] 202)

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee

Revise as follows:

303.1.4 Accessory to places of religious worship. Accessory religious educational rooms and religious auditoriums with *occupant loads* of less than 100 per room or space are not considered separate occupancies.

305.1.1 Accessory to places of religious worship. Religious educational rooms and religious auditoriums, which are accessory to *places of religious worship* in accordance with Section 303.1.4 and have *occupant loads* of less than 100 per room or space, shall be classified as Group A-3 occupancies.

Reason: This proposal is intended to clarify the application of Sections 303.1.4 and 305.1.1. As currently written it is not clear if the occupant load is intended to be all inclusive, or per room or space. When it is recognized that the language includes "auditoriums" as one of the spaces to consider, an accumulative occupant load would not provide the intended benefit of the language.

The proposed language clarifies that the occupant load of 100 is per room or space, a reasonable number when considering religious educational rooms and auditoriums.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: This proposal will lower the cost of construction by clarifying the intent and application of the language.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This revision was felt appropriate as this is how previous editions of the IBC were applied. This revision allows each room or space to be evaluated independently.

Assembly Action:

None

Final Hearing Results

G27-12

AS

Code Change No: **G28-12**

Original Proposal

Section(s): 304.1 (IFC [B] 202)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering (al.godwin@aon.com)

Revise as follows:

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

- Airport traffic control towers
- Ambulatory care facilities*
- Animal hospitals, kennels and pounds
- Banks
- Barber and beauty shops
- Car wash
- Civic administration
- Clinic, outpatient*
- Dry cleaning and laundries: pick-up and delivery stations and self-service
- Educational occupancies for students above the 12th grade
- Electronic data processing
- Food processing establishments and commercial kitchens with an occupant load less than 25 and not associated with restaurants, cafeterias and similar dining facilities.
- Laboratories: testing and research
- Motor vehicle showrooms
- Post offices
- Print shops
- Professional services (architects, attorneys, dentists, physicians, engineers, etc.)
- Radio and television stations
- Telephone exchanges
- Training and skill development not within a school or academic program

Reason: It is not uncommon to have catering services, bakeries, takeout pizza, and other food prep establishments in retail strip centers. Calling such uses an F-1 actually invokes change of use provisions that are not necessary. To avoid this, many jurisdictions will just call them "retail sales". However, they actually are more closely related to a small café and should be considered as such. Or, they should be listed under Group M.

With 200 sq. ft. per person occupant load calculation, 25 occupants equates to 5,000 sq. ft.

Cost Impact: This code change proposal will not increase the cost of construction but could reduce the cost of unnecessary change of use.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: This proposal was disapproved for several reasons. First it was considered too high of an occupant load which would basically allow a 5000 square foot kitchen. It was suggested that it might be better to simply limit the square footage instead of basing upon an occupant load. A square footage of 2500 square feet was offered as a suggestion. Additionally, the committee noted that correlation with Group F occupancies was necessary.

Assembly Action:

None

Public Comments

Public Comment:

Al Godwin, CBO, CPM, Aon Fire Protection Engineering Corporation, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

- Airport traffic control towers
- Ambulatory care facilities*
- Animal hospitals, kennels and pounds
- Banks
- Barber and beauty shops
- Car wash
- Civic administration
- Clinic, outpatient*
- Dry cleaning and laundries: pick-up and delivery stations and self-service
- Educational occupancies for students above the 12th grade
- Electronic data processing
- Food processing establishments and commercial kitchens ~~with an occupant load less than 25 and~~ not associated with restaurants, cafeterias and similar dining facilities not more than 2500 square feet in area.
- Laboratories: testing and research
- Motor vehicle showrooms
- Post offices
- Print shops
- Professional services (architects, attorneys, dentists, physicians, engineers, etc.)
- Radio and television stations
- Telephone exchanges
- Training and skill development not within a school or academic program

306.2 Moderate-hazard factory industrial, Group F-1. Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

- Aircraft (manufacturing, not to include repair)
- Appliances
- Athletic equipment
- Automobiles and other motor vehicles
- Bakeries
- Beverages: over 16-percent alcohol content
- Bicycles
- Boats
- Brooms or brushes
- Business machines
- Cameras and photo equipment
- Canvas or similar fabric
- Carpets and rugs (includes cleaning)
- Clothing
- Construction and agricultural machinery
- Disinfectants
- Dry cleaning and dyeing
- Electric generation plants
- Electronics
- Engines (including rebuilding)
- Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities over 2500 square feet in area.
- Furniture
- Hemp products
- Jute products
- Laundries
- Leather products
- Machinery
- Metals
- Millwork (sash and door)

Motion pictures and television filming (without spectators)
Musical instruments
Optical goods
Paper mills or products
Photographic film
Plastic products
Printing or publishing
Recreational vehicles
Refuse incineration
Shoes
Soaps and detergents
Textiles
Tobacco
Trailers
Upholstering
Wood; distillation
Woodworking (cabinet)

Commenter Reason: In its review, the Committee felt that the amendment was appropriate but too large. Also, a correlation amendment should be proposed for F-1 occupancies. Therefore, these amendments would seem to be within the recommendations of the committee.

Although worded differently, these uses will receive a form of recognition under P35-12 which passed committee as follows:

P35 – 12

403.3 (IBC [P] 2902.3)

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C., representing Little Caesar Enterprises (JBEngineer@aol.com)

Revise as follows:

403.3 (IBC [P] 2902.3) Required public toilet facilities. Customers, patrons and visitors shall be provided with *public* toilet facilities in structures and tenant spaces intended for public utilization. The number of plumbing fixtures located within the required toilet facilities shall be provided in accordance with Section 403 for all users. Employees shall be provided with toilet facilities in all *occupancies*. Employee toilet facilities shall be either separate or combined employee and *public* toilet facilities.

Exceptions: Public toilet facilities shall not be required in:

1. Open or enclosed parking garages. Toilet facilities shall not be required in parking garages where there are no parking attendants.
2. Structures and tenant spaces intended for quick transactions, including take out, pick up and drop off, having a public access area less than or equal to 300 square feet.

Tenant spaces that are only intended for quick transactions do not need to provide public facilities for customers, patrons, and visitors. The public does not rely on such spaces to provide public toilet rooms. Patrons spend a short period of time completing a transaction, then they depart.

Examples of these types of spaces include: takeout food locations, such as Chinese food take outs; pizza take outs; and carry out ribs. Similar quick transaction facilities include: dry cleaners, atm facilities, florists, shoe repair shops, and newspaper stands.

It is recognized that the text of the second exception could be shortened to read: Structures and tenant spaces having a public access area less than or equal to 300 square feet. The added text is provided for clarity.

The purpose of this section has always been to provide comfort facilities for anyone spending a period of time in the public space. Quick transaction spaces are unique, in that people are not in the space for any length of time. Furthermore, the space open to the public is limited to 300 square feet.

It would be a safety and/or health hazard to have the public travel to the working areas of the tenant space to use toilet facilities. Hence, if a public toilet room is added, the space for the toilet room would have to be located in the front space where the small public area is located. This creates a security concern where the public toilet room would block openings in the front tenant space.

The 300 square foot dimension is based on the standard large spaces used by these types of facilities. Most tenant spaces of this type have an area less than 300 square feet for the public.

P35-12 Committee Action:

Approved as Submitted

Committee Reason: Small spaces intended for momentary occupancy by the public do not require toilet facilities.

Assembly Action:

None

Final Hearing Results

G28-12

AMPC

Code Change No: G31-12 Part I

Original Proposal

Section(s): 202, 308.3, 308.3.1, 308.3.2, 308.4.1, 310.6, 310.6.1 (NEW), 310.6.2 (NEW), 420, 420.1, 420.4 (NEW), 420.4.1 (NEW), 504.2, 709.5, 1018.1; (IFC [B] 202, 1018.1)

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee

THIS IS A 2 PART CODE CHANGES. BOTH PARTS WILL BE HEARD BY HEARD BY THE IBC GENERAL CODE COMMITTEE AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL COMMITTEE.

PART I – INTERNATIONAL BUILDING CODE

Revise as follows:

SECTION 202 DEFINITIONS

24-HOUR CARE BASIS. The actual time that a person is an occupant within a facility for the purpose of receiving care. It shall not include a facility that is open for 24 hours and is capable of providing care to someone visiting the facility during any segment of the 24 hours.

CUSTODIAL CARE. Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. Custodial care ~~include~~ includes occupants ~~who~~ that have the ability to respond to emergency situations and evacuate at a slower rate and/or who have mental and psychiatric complications.

GROUP HOME. A facility for social rehabilitation, substance abuse or mental health problems that contains a group housing arrangement that provides *custodial care* but does not provide ~~acute~~ medical care.

SECTION 308 INSTITUTIONAL GROUP I

308.3 Institutional Group I-1. This occupancy shall include buildings, structures or portions thereof for more than 16 persons, excluding staff, who reside on a 24 hour basis in a supervised environment and receive *custodial care*. ~~The persons receiving care are capable of self preservation.~~ Buildings of Group I-1 shall be classified as one of the occupancy conditions indicated in Sections 308.3.1 or 308.3.2. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities
- Group homes*
- Halfway houses
- Residential board and ~~custodial~~ *care* facilities
- Social rehabilitation facilities

308.3.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care who, without any assistance, are capable of responding to an emergency situation to complete building evacuation.

308.3.2 Condition 2. This occupancy condition shall include buildings in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation.

~~308.3.2~~ **308.3.3 Six to sixteen persons receiving custodial care.** A facility ~~such as above,~~ housing not fewer than six and not more than 16 persons receiving such custodial care, shall be classified as Group R-4.

~~308.3.4~~ **308.3.4 Five or fewer persons receiving custodial care.** A facility ~~such as the above~~ with five or fewer persons receiving such custodial care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.

308.4 Institutional Group I-2. This occupancy shall include buildings and structures used for *medical care* on a 24-hour basis for more than five persons who are *incapable of selfpreservation*. This group shall include, but not be limited to, the following:

Foster care facilities
Detoxification facilities
Hospitals
Nursing homes
Psychiatric hospitals

308.4.1 Five or fewer persons receiving medical care. A facility ~~such as the above~~ with five or fewer persons receiving such medical care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.

SECTION 310 RESIDENTIAL GROUP R

310.6 Residential Group R-4. This occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive *custodial care*. ~~The persons receiving care are capable of self-preservation.~~ Buildings of Group R-4 shall be classified as one of the occupancy conditions indicated in Sections 310.6.1 or 310.6.2 This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living facilities
Congregate care facilities
Convalescent facilities
Group homes
Halfway houses
Residential board and ~~custodial~~ care facilities
Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code.

310.6.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care, who without any assistance, are capable of responding to an emergency situation to complete building evacuation.

310.6.2 Condition 2. This occupancy condition shall include buildings in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation.

SECTION 420 GROUPS I-1, R-1, R-2, R-3, R-4

420.1 General. Occupancies in Groups I-1, R-1, R-2 and R-3 and R-4 shall comply with the provisions of Sections 420.1 through ~~420.5~~ 420.6 and other applicable provisions of this code.

420.4 Smoke barriers in Group I-1 Condition 2. Smoke barriers shall be provided in Group I-1 Condition 2 to subdivide every story used by persons receiving care, treatment or sleeping and to provide other stories with an occupant load of 50 or more persons, into no fewer than two smoke compartments. Such stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m²) and the travel distance from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be in accordance with Section 709.

420.4.1 Refuge area. Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments. The size of the refuge area shall provide the following:

1. Not less than 15 net square feet (1.4 m²) for each care recipient.
2. Not less than 6 net square feet (0.56 m²) for other occupants.

Areas or spaces permitted to be included in the calculation of the refuge area are corridors, lounge or dining areas and other low hazard areas.

[F] 420.4 420.5 Automatic sprinkler system. *(No change)*

[F] 420.5 420.6 Smoke detection and fire alarm system. *(see Part II)*

SECTION 504 BUILDING HEIGHT

504.2 Automatic sprinkler system increase. Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one. These increases are permitted in addition to the *building area* increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one, but shall not exceed 60 feet (18 288 mm) or four *stories*, respectively.

Exception: The use of an *automatic sprinkler system* to increase *building heights* shall not be permitted for the following conditions:

1. Buildings, or portions of buildings, classified as a Group I-1 Condition 2, of Type IIB, III, IV or V construction or Group I-2 occupancy occupancies of Type IIB, III, IV or V construction.
2. Buildings, or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.
3. Buildings where an *automatic sprinkler system* is substituted for fire-resistance rated construction in accordance with Table 601, Note d.

SECTION 709 SMOKE BARRIERS

709.5 Openings. Openings in a *smoke barrier* shall be protected in accordance with Section 716.

Exceptions:

1. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, where doors are installed across *corridors*, a pair of opposite- swinging doors without a center mullion shall be installed having vision panels with fire-protection- rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested. The doors shall be close fitting within operational tolerances, and shall not have undercuts in excess of 3/4-inch, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges and shall be automatic-closing by smoke detection in accordance with Section 716.5.9.3. Where permitted by the door manufacturer's listing, positive-latching devices are not required.
2. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, horizontal sliding doors installed in accordance with Section 1008.1.4.3 and protected in accordance with Section 716.

SECTION 1018 (IFC [B] 1018) CORRIDORS

1018.1 (IFC [B] 1018.1) Construction. *Corridors* shall be fire-resistance rated in accordance with Table 1018.1. The *corridor* walls required to be fire-resistance rated shall comply with Section 708 for *fire partitions*.

Exceptions:

1. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group E where each room that is used for instruction has at least one door opening directly to the exterior and rooms for assembly purposes have at least one-half of the required *means of egress* doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. A *fire-resistance rating* is not required for *corridors* contained within a dwelling or sleeping unit in an occupancy in Group I-1 and Group R.
3. A *fire-resistance rating* is not required for *corridors* in *open parking garages*.
4. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group B which is a space requiring only a single *means of egress* complying with Section 1015.1.
5. *Corridors* adjacent to the *exterior walls* of buildings shall be permitted to have unprotected openings on unrated *exterior walls* where unrated walls are permitted by Table 602 and unprotected openings are permitted by Table 705.8.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

GENERAL PURPOSE

The current IBC requires all occupants receiving Custodial Care to be able to evacuate on their own without any assistance from others. Most state Custodial Care (assisted living/ residential care/ group homes) licensing agencies allow occupants who require limited assistance with evacuation.¹ The lack of consistency between what the states allow and the IBC Custodial Care provisions causes inconsistent application of the IBC.² This proposal resolves that conflict and will result in better consistency. The proposal integrates allowing both residents who require limited assistance with evacuation and those that do not in Custodial Care occupancies. It accomplishes this while maintaining current residential occupancy safeguards along with adding appropriate Group I-2 safeguards, for those requiring assistance with evacuation.

The proposed Group I-1 and R-4 custodial care revisions accomplish the following:

- It provides “condition classifications” for both Groups I-1 and R-4. It makes Condition 1 for the buildings, as currently allowed, with residents capable of responding on their own during emergencies. It adds a Condition 2 for buildings residents who may require some assistance with evacuation.
- The added “condition” classification is already utilized in Group I-3 and is also proposed to be included in Group I-2, under a separate proposal by the ICC Ad Hoc Committee on Healthcare.
- It adds to the new Group I-1 Condition 2, four more stringent requirements due to the new resident type allowed, in addition to the existing current Group I-1 Condition 1 requirements: story limitations, smoke barriers, increased sprinkler protection, and additional smoke detection.
- It adds to the new Group R-4 Condition 2, due to the new resident type allowed, two more stringent requirements in addition to the capable Group R-4 Condition 1 requirements: story limitations, and additional attic detection or protection, considering the smaller facilities.
- It clarifies in the revised Custodial Care definition and in Group I-1 and R-4 Condition 2 occupancies that they are not Group I-2, which provides Medical Care. Group I-1 Custodial Care has persons with some physical or mental limitations, who may require limited assistance in emergency evacuation, but who are still capable enough to participate in complete building evacuation during emergencies. This limit of the level of care or resident type in Group I-1 and R-4 does not include Group I-2 higher acuity occupants who require full nursing care or Medical Care as defined. Those receiving Medical Care in Group I-2 may be bedridden during emergencies, may be on life support systems, or may be semiconscious or unconscious, all in which evacuation concepts allows for defend in place strategies.
- It leaves the other current IBC base I-1/ R-4 requirements, and the capable Group I-1 and R-4 Condition 1 requirements unchanged from the current code, except for minor clerical revisions.
- The substantiation for both the IBC and correlating IFC changes relating to this Group I-1/R4 proposal are integrated below in IBC section order, to provide a comprehensive correlation of both sets of changes for both codes.

GENERAL REASONS AND SUBSTANTIATION

The new Group I-1 Condition 2 requirements add appropriate Group I-2 protection features. It also maintains more restrictive Group I-1 residential protection features than current Group I-2 requirements. Other differences between Group I-1 and Group I-2 are also maintained. The numerous differences between Group I-1/ R-4 Custodial Care and Group I-2 Medical Care occupancies in relation to resident types, care levels, and functional facility design concepts relating to protection noted below, substantiate why it is appropriate to regulate them differently in separate occupancy groups.

- **Group I-1 Condition 2 & Group I-2 similarity:** Group I-1 Condition 2 adds NFPA 13 full sprinkler coverage system requirements, like Group I-2 Medical Care.
- **Group I-1 Condition 2 & Group I-2 similarity & difference:** Group I-1 Condition 2 adds smoke barriers like Group I-2 medical care occupancies. Smoke barriers provide temporary protection for custodial care residents that require assistance from others in an emergency. These Group I-1 facilities still eventually complete building evacuation and residents still participate in fire drills as in the current IFC, versus the “defend in place” and non fire drill participation in Group I-2 Medical Care facilities. The proponent is also proposing minor Group I-1 Condition 2 changes in the IFC, still requiring fire drill participation, and full evacuation, while utilizing smoke compartments to allow for staged building evacuation.
- **Group I-1 Condition 2 & Group I-2 differences:** Group I-1 Condition 2 still has appropriate corridor protections, dwelling and sleeping unit separation, smoke detection, and unit smoke alarms, which Group I-2 Medical Care does not require. This is due to small apartments generally occurring in Custodial Care that may have some domestic cooking appliances, while Group I-2 Medical Care has sleeping rooms where cooking is prohibited in the rooms. It is also due to resident to staff ratios that are generally less in Custodial Care than Group I-2 Medical Care during night time.
- **Group I-1/R-4 Condition 2 & Group I-2 difference:** Group I-1 and R-4 Condition 2 occupancies through state licensing agencies, do not allow residents that must remain in bed during emergency evacuation, so Group I-2 increased means of egress width requirements in Chapter 10 for bed movement are not applied.
- **Group I-1/R-4 Condition 2 & Group I-2 differences:** Other differences between traditional Group I-2 occupancies and new Group I-1 and R-4 Condition 2 occupancies are maintained due to differences between the types of care provided (Medical Care versus Custodial Care), and other characteristics of the two occupancy groups. One example is that Medical Care may have semiconscious or unconscious persons who are totally dependent on others for their safety during emergencies. Custodial Care has persons who are conscious but may not be as functional or responsive to emergencies as compared to the general population. These persons still have sufficient functional ability to participate in evacuation with or without assistance. This aspect of the revised Group I-1 is also consistent with all state assisted living regulations.

These Custodial Care occupancies are also often controlled by individual state licensing agency requirements, which can vary greatly between different states by use, name, and occupant capabilities². This proposal concept clarifies that irrelevant of state licensing regulations, the determining factors for IBC occupancy classification and related safeguards are based on three aspects characterizing the care occupancies:

- **The type of IBC defined care that is provided (Medical or Custodial).** The care level limits Group I-1 to provide Custodial Care and does not allow the higher resident acuity levels allowed in nursing facilities or hospitals (Medical Care).
- **The type of evacuation process and evacuation capability that is allowed in Custodial Care versus Medical Care.** It limits Custodial Care to residents that may require limited assistance in evacuation but who are capable of actively participating in complete building evacuation versus the defend in place concept for Medical Care
- **That they receive care on a 24 hour basis as defined.**

Finally, these concepts proposed herein are already being applied by a majority of the state licensing agencies for custodial care uses, especially in the largest use assisted living/ residential care. State licensing agencies also do control their types of licensed care. All states have nursing licensure and create a line in the sand differentiating nursing licensure from their custodial care

licensures. The IBC specifically lists the two uses (nursing and custodial care uses) in separate occupancies, so these proposed changes will not allow for nursing to be in the new Group I-1 Condition 2 occupancy.

ITEMIZED IBC/ IFC SECTION SUBSTANTIATION/ REASONS

The relating substantiation for both the IBC and IFC proposed code changes includes all of the substantiation, in IBC section order, to provide a comprehensive correlation of both sets of changes for both codes.

Section 202 - 24 Hour Basis. The term “24 Hour Basis” revises the old “24 Hour Care” term to reflect the actual term words used throughout the code.

Section 202 - Group Home. The Group Home definition is revised to reflect current defined term of “medical care.”

Section 202 - Custodial Care. The revision to the custodial care definition clarifies the difference between custodial care and medical care. Medical care allows for defend in place as is proposed by the ICC Ad Hoc Committee on Healthcare. The revised text clarifies that custodial care includes persons that can still respond to emergencies at a slower rate than the general population for complete building evacuation, due to mental, psychiatric or physical complications.

Section 308.3 Group I-1 is revised to allow persons who can respond to an emergency situation with or without assistance from others. Assisted living is the largest use group of the custodial care uses with over 32,000 facilities. Currently nearly all state licensing agencies allow a majority of their assisted living classifications to have residents that may require limited assistance from others during emergency evacuation. There are also numerous other uses in Group I-1 that have all persons that can evacuation on their own with assistance from others. The “Condition” concept is utilized from the Group I-3 detention occupancy to differentiate Group I-1 occupancies between needing assistance and not needing assistance in evacuation. The “condition” classification is also proposed to be included in Group I-2, under a separate proposal by the ICC Ad Hoc Committee on Healthcare.

The revised section implements language from the existing correlating section in Group I-3, stating that a building shall also be classified with one of the conditions. This clarifies that Group I-1 buildings shall classified on their building permit application and occupancy permit with either a “Group I-1 Condition 1” or “Group I-1 Condition 2” occupancy classification. Most assisted living facilities should be classified as Group I-1 Condition 2 unless the permit application drawings quote licensing regulations limiting the resident type to Condition 1.

The proposed custodial care Condition 2 occupancies include those who may need limited assistance in evacuation. The key aspect of the wording is to differentiate Group I-1 from Group I-2. Group I-1 is limited to custodial care and Group I-2 is for medical care.

The intent of using the words “limited verbal or physical assistance” in Group I-1/R-4 Condition 2 is to clarify the difference of capability levels of emergency evacuation between custodial and medical care. Group I-1 Custodial care is limited to those persons needing limited assistance in evacuation but who can still participate in emergency evacuation response and who can still evacuate with or without assistance. Custodial care evacuation assistance is limited versus medical care which includes those who cannot get out of bed during emergencies, or someone completely incapable of helping themselves by being unconscious or semiconscious, or on life support systems.

Many assisted living, residential care, and some group home facilities have some residents that may fall under the following limited assistance with evacuation condition as paraphrased from the NFPA 101A Guide on Alternative Approaches to Life Safety. This guide has been utilized by many states licensing agencies, starting since the early 1990’s, to determine the relative emergency evacuation capability of residents of custodial care types of residents, with or without assistance from others. It is used here to show the relative nuances of evacuation assistance that will be included in custodial care in the IBC. The concepts are similar as proposed herein, that the occupants still actively participate in fire drills and are trained to complete building evacuation during emergencies, with or without assistance from others:

- A person who has mild to more resistance or confusion to respond to an alarm, or needing someone to help them with instructions as found with persons with dementia or persons with Alzheimer’s.
- A person needing extra intermediate or continuous help during their emergency evacuation.
- A person who has some physical impairment needing physical assistance to help them evacuate.
- A person who needs some assistance getting out of bed or is considered not self starting, but can continue with or without assistance in building evacuation.
- A person with seconds or even a few minutes of impaired consciousness intermittently a few times over a few months due to medications or illness.
- A person requiring minor or constant supervision or attention to help them receive, comprehend, and follow through instructions during emergencies.
- A person who is on medications, or even exceptionally sound sleepers, making them have some chance of not having a waking response to an alarm.
- All persons still have the capability level to participate in emergency evacuation with or without assistance from others.

308.4 Group I-2 is revised with the clerical change clarifying that Group I-2 provides medical care as defined.

Section 310.6 Group R-4 is revised like the Group I-1 to allow persons who can respond to an emergency situation with or without assistance from others for the same reasons cited in the Section 308.3 Group I-1 Reason section.

Section 420.1 Group R-4 is added to the scoping language clarifying that Group R-4 shall conform to Section 420 requirements. The 2012 IBC did not list R-4 in this section even though it was implied that it also had to comply with section 420, because Group R-4 also had to comply with Group R-3 requirements.

Section 420.4 Smoke barriers are added as a requirement in the Group I-1 Condition 2. Smoke barriers are added due to new proposed resident type allowed and to create similar requirements as Group I-2. Compartmentalization is a key aspect of occupancies with occupants who may need assistance with evacuation. There are also state licensing regulations in a majority of states requiring smoke barriers in their assisted living facilities. The smoke barrier sections utilize and match technical requirements, language and format from the current I-2 Section 407 for smoke barriers. The smoke compartment area matches the current area limit.

Section 420.4.1 Matches the format and requirements of the smoke barrier requirements from Section 407. The 15 square feet refuge area is smaller than the Group I-2 refuge area requirements due to no bedridden residents being allowed in custodial care

uses by all state regulatory agencies. The 15 square feet matches over the one third of states that have similar state assisted living refuge areas in their licensing life safety regulations compared to this custodial care proposal. The “sleeping rooms” are also removed as a refuge area space as compared to Group I-2. This is appropriate because custodial care often includes apartments or sleeping rooms that have domestic cooking facilities with the associated room and corridor smoke and fire separation requirements included in Group I-1 and R. This is also another difference between custodial care and medical care.

(IFC) Section 420.5 and 420.6 The current Section “420.4 Automatic sprinkler system” is moved to Section 420.5 as a clerical change due to the new proposed added sections prior. The current Section “420.5 Smoke detection and fire alarm system” is moved to section 420.6 as a clerical change due to the new proposed added sections prior. There are proposed clerical changes to the new section 420.6 that add all of the actual occupancies cross-referenced in the sections referenced in the section.

Section 504.2 requires that the new Group I-1 and R-4 Condition 2 not be allowed to use sprinklers for story increases in Type IIB, III, IV, or V construction, matching the current exception for Group I-2. The limitation is proposed due to the new resident type. It is also because about 30 states licensing agencies already limit their custodial care facilities with residents needing assistance with evacuation to less than the four stories that are currently allowed in Group I-1 in the combustible construction types. This proposal also essentially matches Oregon’s State building code, based on the IBC but with amendments in Groups I-1 and R-4. Oregon’s state building code has utilized the specific concepts proposed here in this proposal since 1991. It has the longest history of implementing hybrid Group I and R occupancy requirements by allowing residents needing assistance with evacuation in custodial care, with NFPA 13 sprinklers, smoke barriers, 3 story wood frame limits along with Group R corridor and apartment separation and protections. Oregon has had no multiple fire death fires in over 100 buildings using these concepts and requirements, and all fires were contained.

Section 709.5 includes adding cross corridor doors in the new required smoke barriers in Group I-1 Condition 2, matching the same exceptions allowed for I-2. Adding compartmentalization is a key provision in dealing with occupants that move as individuals or as a group at slower pace, with or without assistance, than the general population during emergency evacuation.

(IFC) Section 903.2.6 requires full NFPA 13 sprinkler coverage in the Group I-1 Condition 2 facility fire areas. The NFPA 13 requirement is added due to the new proposed resident type allowed. Full sprinkler coverage provided by a NFPA 13 system is a key aspect of larger occupancies with residents needing some assistance with evacuation. Currently over half the states licensing agencies already require NFPA 13 sprinklers in their large assisted living facilities with residents needing assistance with evacuation. The exception is revised to allow NFPA 13R in other Group I-1 Condition 1 facilities, maintaining the current exception for the current capable Group I-1 uses.

The exception number 2 is deleted since a NFPA 13D system for single family residential or other small facilities was never intended to be allowed in and Group I-1 facility serving more than 16 residents, irrelevant of whether they require assistance with evacuation.

(IFC) Section 903.2.8.1 is revised to separate the Group R-3 and Group R-4 provisions.

(IFC) Section 903.2.8.2 is added as a clerical revision maintaining the current requirement of sprinklers in accordance with Section 903.3.1.3 in capable Group R-4 which is the new Group R-4 Condition 1.

(IFC) Section 903.2.8.3 is revised to allow for the new R-4 Condition 2 occupancy. The R-4 Condition 2 occupancy would have both an NFPA13R sprinkler system required as well as added attic protection. In attics not used for living purposes, storage or fuel fired equipment, there are four options offered. Either the smoke detection system will provide early warning of an attic fire, or the chance of a fire in the attic is reduced by construction or sprinklers. Automatic sprinklers in the unheated attic space would have a freezing issue in group homes in northern climates, so additional options are necessary.

(IFC) Section 903.3.1.3 Automatic sprinkler system requirement is revised to reflect the proposed changes to the Group R-4 occupancy.

(IFC) Section 907.2.6.1 is revised to eliminate the smoke detection exception only in buildings housing Group I-1 Condition 2 occupancies. This proposal still allows the exception to be applied to other buildings with Group I-1 Condition 1 as defined by fire walls or exterior walls.

Section 1018.1 Corridor Construction is revised to allow halls within dwelling units in Group I-1 be non-rated just like R occupancies as a missed oversight from previous editions of the code.

Footnotes

1. The substantiation of residents needing some assistance with evacuation occurring in assisted living and other custodial care uses was cited in the original G21 proposal for IBC changes during the 2009/10 code change cycle. It substantiated findings from a national analysis on assisted living performed for the State of Hawaii in 2007 titled “Assisted Living Analysis of All State Regulations Relative to Building Codes and Life Safety Codes.” It showed that virtually all states allow residents needing limited assistance with evacuation in at least one of their categories of assisted living/ residential care facilities and that about two-thirds of all categories allow this occupant type. The analysis confirmed that assisted living/ residential care facilities receive custodial care (older IBC term personal care) and not medical care, and also confirmed the division of size of facilities in Groups I-1 and R-4, so it is appropriately categorized in the IBC relative to care type and sizes. It substantiated that assisted living/ residential care is the largest and fastest growing use in Groups I-1 and R-4. The analysis also confirmed other various aspects of a custodial care program, uses, and protection features differentiating it from medical (health) care. It presented findings and conclusions that a combination of both Group I and R protection features for custodial care with residents needing some assistance with evacuation as is proposed here, is the consistent to what the largest number of various state licensing agencies have implemented in regulating life safety protection for this use by individual states. It showed that the concepts proposed herein are also consistent or similar to what at least three states have already incorporated into their statewide amendments for the IBC (California, Oregon, and Washington.)
2. Industry representatives confirmed in information provided to the CTC that custodial care and especially assisted living/ residential care IBC occupancy classification varies greatly across the country. Industry substantiated that it is mostly due to the IBC stating that only occupants who can evacuate on their own occur in IBC custodial care occupancies versus what actually occurs nationally. This conflict then causes some custodial care to be classified as a hybrid of Group I-1 and I-2 in states amending the IBC, some classified as Group I-2, some classified as general I-

1 or I-2 hybrids in states enforcing other varying standards (NFPA 101), some individual projects applying alternative means creating a hybrid occupancy, and some miss-applying the capability standard. The industry representatives were associated with the American Health Care Association, Assisted Living Federation of America, and Leading Age as the three industry trade associations representing almost all assisted living/ residential care in the country.

Cost Impact: The proposed changes will not increase the cost of construction. Reduction

Public Hearing Results

Both parts of this proposal were heard by the IBC General code development committee.

PART I – IBC GENERAL

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved as submitted as it was felt overdue. Also it differentiates between facilities that need higher levels of protection due to condition of the residents. Often without this proposal it will push many I-1 occupancies to be Group I-2. This division provides for more rigorous requirements such as smoke compartments for I-1 condition 2 while still providing flexibility for those facilities that do not require that level of protection. The division into two conditions was felt to be the best solution to this problem with differing levels of care required in I-1 occupancies.

Assembly Action:

None

Final Hearing Results

G31-12 Part I

AS

Code Change No: G31-12 Part II

Original Proposal

Section(s): 202, 308.3, 308.3.1, 308.3.2, 308.4.1, 310.6, 310.6.1 (NEW), 310.6.2 (NEW), 420, 420.1, 420.4 (NEW), 420.4.1 (NEW), 504.2, 709.5, 1018.1; (IFC [B] 202, 1018.1)

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee

THIS IS A 2 PART CODE CHANGES. BOTH PARTS WILL BE HEARD BY HEARD BY THE IBC GENERAL CODE COMMITTEE AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL COMMITTEE.

PART II – INTERNATIONAL FIRE CODE

Revise as follows:

IBC [F] 420.5 ~~420.6~~ Smoke detection and fire alarm systems and smoke alarms. Fire alarm systems and smoke alarms shall be provided in Group I-1, R-1, and R-2 and Group R-4 occupancies in accordance with Sections 907.2.6, 907.2.8, and 907.2.9 and 907.2.10, respectively. Single- or multiple-station smoke alarms shall be provided in Groups I-1, R-2, R-3 and R-4 in accordance with Section 907.2.11.

SECTION 903 (IBC [F] 903) AUTOMATIC SPRINKLER SYSTEMS

903.2.6 (IBC [F] 903.2.6) Group I. An automatic sprinkler system shall be provided throughout buildings with a Group I fire area.

Exceptions:

1. An automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1 Condition 1 facilities.
- ~~2. An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be allowed in Group I-1 facilities when in compliance with all of the following:~~
 - ~~2.1. A hydraulic design information sign is located on the system riser~~
 - ~~2.2. Exception 1 of Section 903.4 is not applied, and~~
 - ~~2.3. Systems shall be maintained in accordance with the requirements of Section 903.3.1.2.~~
- 2.3. An automatic sprinkler system is not required where Group I-4 day care facilities are at the level of exit discharge and where every room where care is provided has at least one exterior exit door.
- 3.4. In buildings where Group I-4 day care is provided on levels other than the level of exit discharge, an automatic sprinkler system in accordance with 903.3.1.1 shall be installed on the entire floor where care is provided and all floors between the level of care and the level of exit discharge, all floors below the level of exit discharge, other than areas classified as an open parking garage.

903.2.8 (IBC [F] 903.2.8) Group R. An *automatic sprinkler system* installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R *fire area*.

903.2.8.1 (IBC [F] 903.2.8.1) Group R-3 or R-4 ~~congregate residence~~. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in Group R-3. ~~or R-4 congregate residence with 16 or fewer residents.~~

903.2.8.2 (IBC [F] 903.2.8.2) Group R-4 Condition 1. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in Group R-4 Condition 1.

903.2.8.3 (IBC [F] 903.2.8.3) Group R-4 Condition 2. An automatic sprinkler system installed in accordance with 903.3.1.2 shall be permitted in Group R-4 Condition 2. Attics shall be protected in accordance with Sections 903.2.8.3.1 or 903.2.8.3.2.

903.2.8.3.1 (IBC [F] 903.2.8.3.1) Attics used for living purposes, storage or fuel fired equipment. Attics used for living purposes, storage or fuel fired equipment shall be protected throughout with automatic sprinkler system installed in accordance with 903.3.1.2.

903.2.8.3.2 (IBC [F] 903.2.8.3.2) Attics not used for living purposes, storage or fuel fired equipment . Attics not used for living purposes, storage or fuel fired equipment shall be protected in accordance with one of the following:

1. Attics protected throughout by a heat detector system arranged to activate the building fire alarm system in accordance with Section 907.2.10.
2. Attics constructed of non-combustible materials.
3. Attics constructed of fire-retardant-treated wood framing complying with Section 2303.2.
4. The automatic fire sprinkler system shall be extended to provide protection throughout the attic space.

903.2.8.2 903.2.8.4 (IBC [F] 903.2.8.2 903.2.8.4) Care facilities. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in care facilities with 5 or fewer individuals in a single family dwelling.

903.3.1.3 (IBC [F] 903.3.1.3) NFPA 13D sprinkler systems. Automatic sprinkler systems installed in one and two-family dwellings, Group R-3, and R-4 ~~congregate residences~~ Condition 1 and townhouses shall be permitted to be installed throughout in accordance with NFPA 13D.

SECTION 907 (IBC [F] 907) FIRE ALARM AND DETECTION SYSTEMS

907.2.6.1 (IBC [F] 907.2.6.1) Group I-1. In Group I-1 occupancies, an automatic smoke detection system shall be installed in corridors, waiting areas open to corridors and habitable spaces other than sleeping units and kitchens. The system shall be activated in accordance with Section 907.5.

Exceptions:

1. For Group I-1 Condition 1 smoke ~~Smoke~~ detection in habitable spaces is not required where the facility is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Smoke detection is not required for exterior balconies.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

GENERAL PURPOSE

The current IBC requires all occupants receiving Custodial Care to be able to evacuate on their own without any assistance from others. Most state Custodial Care (assisted living/ residential care/ group homes) licensing agencies allow occupants who require limited assistance with evacuation.¹ The lack of consistency between what the states allow and the IBC Custodial Care provisions causes inconsistent application of the IBC.² This proposal resolves that conflict and will result in better consistency. The proposal integrates allowing both residents who require limited assistance with evacuation and those that do not in Custodial Care

occupancies. It accomplishes this while maintaining current residential occupancy safeguards along with adding appropriate Group I-2 safeguards, for those requiring assistance with evacuation.

The proposed Group I-1 and R-4 custodial care revisions accomplish the following:

- It provides “condition classifications” for both Groups I-1 and R-4. It makes Condition 1 for the buildings, as currently allowed, with residents capable of responding on their own during emergencies. It adds a Condition 2 for buildings residents who may require some assistance with evacuation.
- The added “condition” classification is already utilized in Group I-3 and is also proposed to be included in Group I-2, under a separate proposal by the ICC Ad Hoc Committee on Healthcare.
- It adds to the new Group I-1 Condition 2, four more stringent requirements due to the new resident type allowed, in addition to the existing current Group I-1 Condition 1 requirements: story limitations, smoke barriers, increased sprinkler protection, and additional smoke detection.
- It adds to the new Group R-4 Condition 2, due to the new resident type allowed, two more stringent requirements in addition to the capable Group R-4 Condition 1 requirements: story limitations, and additional attic detection or protection, considering the smaller facilities.
- It clarifies in the revised Custodial Care definition and in Group I-1 and R-4 Condition 2 occupancies that they are not Group I-2, which provides Medical Care. Group I-1 Custodial Care has persons with some physical or mental limitations, who may require limited assistance in emergency evacuation, but who are still capable enough to participate in complete building evacuation during emergencies. This limit of the level of care or resident type in Group I-1 and R-4 does not include Group I-2 higher acuity occupants who require full nursing care or Medical Care as defined. Those receiving Medical Care in Group I-2 may be bedridden during emergencies, may be on life support systems, or may be semiconscious or unconscious, all in which evacuation concepts allow for defend in place strategies.
- It leaves the other current IBC base I-1/ R-4 requirements, and the capable Group I-1 and R-4 Condition 1 requirements unchanged from the current code, except for minor clerical revisions.
- The substantiation for both the IBC and correlating IFC changes relating to this Group I-1/R4 proposal are integrated below in IBC section order, to provide a comprehensive correlation of both sets of changes for both codes.

GENERAL REASONS AND SUBSTANTIATION

The new Group I-1 Condition 2 requirements add appropriate Group I-2 protection features. It also maintains more restrictive Group I-1 residential protection features than current Group I-2 requirements. Other differences between Group I-1 and Group I-2 are also maintained. The numerous differences between Group I-1/ R-4 Custodial Care and Group I-2 Medical Care occupancies in relation to resident types, care levels, and functional facility design concepts relating to protection noted below, substantiate why it is appropriate to regulate them differently in separate occupancy groups.

- **Group I-1 Condition 2 & Group I-2 similarity:** Group I-1 Condition 2 adds NFPA 13 full sprinkler coverage system requirements, like Group I-2 Medical Care.
- **Group I-1 Condition 2 & Group I-2 similarity & difference:** Group I-1 Condition 2 adds smoke barriers like Group I-2 medical care occupancies. Smoke barriers provide temporary protection for custodial care residents that require assistance from others in an emergency. These Group I-1 facilities still eventually complete building evacuation and residents still participate in fire drills as in the current IFC, versus the “defend in place” and non fire drill participation in Group I-2 Medical Care facilities. The proponent is also proposing minor Group I-1 Condition 2 changes in the IFC, still requiring fire drill participation, and full evacuation, while utilizing smoke compartments to allow for staged building evacuation.
- **Group I-1 Condition 2 & Group I-2 differences:** Group I-1 Condition 2 still has appropriate corridor protections, dwelling and sleeping unit separation, smoke detection, and unit smoke alarms, which Group I-2 Medical Care does not require. This is due to small apartments generally occurring in Custodial Care that may have some domestic cooking appliances, while Group I-2 Medical Care has sleeping rooms where cooking is prohibited in the rooms. It is also due to resident to staff ratios that are generally less in Custodial Care than Group I-2 Medical Care during night time.
- **Group I-1/R-4 Condition 2 & Group I-2 difference:** Group I-1 and R-4 Condition 2 occupancies through state licensing agencies, do not allow residents that must remain in bed during emergency evacuation, so Group I-2 increased means of egress width requirements in Chapter 10 for bed movement are not applied.
- **Group I-1/R-4 Condition 2 & Group I-2 differences:** Other differences between traditional Group I-2 occupancies and new Group I-1 and R-4 Condition 2 occupancies are maintained due to differences between the types of care provided (Medical Care versus Custodial Care), and other characteristics of the two occupancy groups. One example is that Medical Care may have semiconscious or unconscious persons who are totally dependent on others for their safety during emergencies. Custodial Care has persons who are conscious but may not be as functional or responsive to emergencies as compared to the general population. These persons still have sufficient functional ability to participate in evacuation with or without assistance. This aspect of the revised Group I-1 is also consistent with all state assisted living regulations.

These Custodial Care occupancies are also often controlled by individual state licensing agency requirements, which can vary greatly between different states by use, name, and occupant capabilities². This proposal concept clarifies that irrelevant of state licensing regulations, the determining factors for IBC occupancy classification and related safeguards are based on three aspects characterizing the care occupancies:

- **The type of IBC defined care that is provided (Medical or Custodial).** The care level limits Group I-1 to provide Custodial Care and does not allow the higher resident acuity levels allowed in nursing facilities or hospitals (Medical Care).
- **The type of evacuation process and evacuation capability that is allowed in Custodial Care versus Medical Care.** It limits Custodial Care to residents that may require limited assistance in evacuation but who are capable of actively participating in complete building evacuation versus the defend in place concept for Medical Care
- **That they receive care on a 24 hour basis as defined.**

Finally, these concepts proposed herein are already being applied by a majority of the state licensing agencies for custodial care uses, especially in the largest use assisted living/ residential care. State licensing agencies also do control their types of licensed care. All states have nursing licensure and create a line in the sand differentiating nursing licensure from their custodial care licensures. The IBC specifically lists the two uses (nursing and custodial care uses) in separate occupancies, so these proposed changes will not allow for nursing to be in the new Group I-1 Condition 2 occupancy.

ITEMIZED IBC/ IFC SECTION SUBSTANTIATION/ REASONS

The relating substantiation for both the IBC and IFC proposed code changes includes all of the substantiation, in IBC section order, to provide a comprehensive correlation of both sets of changes for both codes.

Section 202 - 24 Hour Basis. The term “24 Hour Basis” revises the old “24 Hour Care” term to reflect the actual term words used throughout the code.

Section 202 - Group Home. The Group Home definition is revised to reflect current defined term of “medical care.”

Section 202 - Custodial Care. The revision to the custodial care definition clarifies the difference between custodial care and medical care. Medical care allows for defend in place as is proposed by the ICC Ad Hoc Committee on Healthcare. The revised text clarifies that custodial care includes persons that can still respond to emergencies at a slower rate than the general population for complete building evacuation, due to mental, psychiatric or physical complications.

Section 308.3 Group I-1 is revised to allow persons who can respond to an emergency situation with or without assistance from others. Assisted living is the largest use group of the custodial care uses with over 32,000 facilities. Currently nearly all state licensing agencies allow a majority of their assisted living classifications to have residents that may require limited assistance from others during emergency evacuation. There are also numerous other uses in Group I-1 that have all persons that can evacuation on their own with assistance from others. The “Condition” concept is utilized from the Group I-3 detention occupancy to differentiate Group I-1 occupancies between needing assistance and not needing assistance in evacuation. The “condition” classification is also proposed to be included in Group I-2, under a separate proposal by the ICC Ad Hoc Committee on Healthcare.

The revised section implements language from the existing correlating section in Group I-3, stating that a building shall also be classified with one of the conditions. This clarifies that Group I-1 buildings shall classified on their building permit application and occupancy permit with either a “Group I-1 Condition 1” or “Group I-1 Condition 2” occupancy classification. Most assisted living facilities should be classified as Group I-1 Condition 2 unless the permit application drawings quote licensing regulations limiting the resident type to Condition 1.

The proposed custodial care Condition 2 occupancies include those who may need limited assistance in evacuation. The key aspect of the wording is to differentiate Group I-1 from Group I-2. Group I-1 is limited to custodial care and Group I-2 is for medical care.

The intent of using the words “limited verbal or physical assistance” in Group I-1/R-4 Condition 2 is to clarify the difference of capability levels of emergency evacuation between custodial and medical care. Group I-1 Custodial care is limited to those persons needing limited assistance in evacuation but who can still participate in emergency evacuation response and who can still evacuate with or without assistance. Custodial care evacuation assistance is limited versus medical care which includes those who cannot get out of bed during emergencies, or someone completely incapable of helping themselves by being unconscious or semiconscious, or on life support systems.

Many assisted living, residential care, and some group home facilities have some residents that may fall under the following limited assistance with evacuation condition as paraphrased from the NFPA 101A Guide on Alternative Approaches to Life Safety. This guide has been utilized by many states licensing agencies, starting since the early 1990’s, to determine the relative emergency evacuation capability of residents of custodial care types of residents, with or without assistance from others. It is used here to show the relative nuances of evacuation assistance that will be included in custodial care in the IBC. The concepts are similar as proposed herein, that the occupants still actively participate in fire drills and are trained to complete building evacuation during emergencies, with or without assistance from others:

- A person who has mild to more resistance or confusion to respond to an alarm, or needing someone to help them with instructions as found with persons with dementia or persons with Alzheimer’s.
- A person needing extra intermediate or continuous help during their emergency evacuation.
- A person who has some physical impairment needing physical assistance to help them evacuate.
- A person who needs some assistance getting out of bed or is considered not self starting, but can continue with or without assistance in building evacuation.
- A person with seconds or even a few minutes of impaired consciousness intermittently a few times over a few months due to medications or illness.
- A person requiring minor or constant supervision or attention to help them receive, comprehend, and follow through instructions during emergencies.
- A person who is on medications, or even exceptionally sound sleepers, making them have some chance of not having a waking response to an alarm.
- All persons still have the capability level to participate in emergency evacuation with or without assistance from others.

308.4 Group I-2 is revised with the clerical change clarifying that Group I-2 provides medical care as defined.

Section 310.6 Group R-4 is revised like the Group I-1 to allow persons who can respond to an emergency situation with or without assistance from others for the same reasons cited in the Section 308.3 Group I-1 Reason section.

Section 420.1 Group R-4 is added to the scoping language clarifying that Group R-4 shall conform to Section 420 requirements. The 2012 IBC did not list R-4 in this section even though it was implied that it also had to comply with section 420, because Group R-4 also had to comply with Group R-3 requirements.

Section 420.4 Smoke barriers are added as a requirement in the Group I-1 Condition 2. Smoke barriers are added due to new proposed resident type allowed and to create similar requirements as Group I-2. Compartmentalization is a key aspect of occupancies with occupants who may need assistance with evacuation. There are also state licensing regulations in a majority of states requiring smoke barriers in their assisted living facilities. The smoke barrier sections utilize and match technical requirements,

language and format from the current I-2 Section 407 for smoke barriers. The smoke compartment area matches the current area limit.

Section 420.4.1 Matches the format and requirements of the smoke barrier requirements from Section 407. The 15 square feet refuge area is smaller than the Group I-2 refuge area requirements due to no bedridden residents being allowed in custodial care uses by all state regulatory agencies. The 15 square feet matches over the one third of states that have similar state assisted living refuge areas in their licensing life safety regulations compared to this custodial care proposal.

The “sleeping rooms” are also removed as a refuge area space as compared to Group I-2. This is appropriate because custodial care often includes apartments or sleeping rooms that have domestic cooking facilities with the associated room and corridor smoke and fire separation requirements included in Group I-1 and R. This is also another difference between custodial care and medical care.

(IFC) Section 420.5 and 420.6 The current Section “420.4 Automatic sprinkler system” is moved to Section 420.5 as a clerical change due to the new proposed added sections prior. The current Section “420.5 Smoke detection and fire alarm system” is moved to section 420.6 as a clerical change due to the new proposed added sections prior. There are proposed clerical changes to the new section 420.6 that add all of the actual occupancies cross-referenced in the sections referenced in the section.

Section 504.2 requires that the new Group I-1 and R-4 Condition 2 not be allowed to use sprinklers for story increases in Type IIB, III, IV, or V construction, matching the current exception for Group I-2. The limitation is proposed due to the new resident type. It is also because about 30 states licensing agencies already limit their custodial care facilities with residents needing assistance with evacuation to less than the four stories that are currently allowed in Group I-1 in the combustible construction types.

This proposal also essentially matches Oregon’s State building code, based on the IBC but with amendments in Groups I-1 and R-4. Oregon’s state building code has utilized the specific concepts proposed here in this proposal since 1991. It has the longest history of implementing hybrid Group I and R occupancy requirements by allowing residents needing assistance with evacuation in custodial care, with NFPA 13 sprinklers, smoke barriers, 3 story wood frame limits along with Group R corridor and apartment separation and protections. Oregon has had no multiple fire death fires in over 100 buildings using these concepts and requirements, and all fires were contained.

Section 709.5 includes adding cross corridor doors in the new required smoke barriers in Group I-1 Condition 2, matching the same exceptions allowed for I-2. Adding compartmentalization is a key provision in dealing with occupants that move as individuals or as a group at slower pace, with or without assistance, than the general population during emergency evacuation.

(IFC) Section 903.2.6 requires full NFPA 13 sprinkler coverage in the Group I-1 Condition 2 facility fire areas. The NFPA 13 requirement is added due to the new proposed resident type allowed. Full sprinkler coverage provided by a NFPA 13 system is a key aspect of larger occupancies with residents needing some assistance with evacuation. Currently over half the states licensing agencies already require NFPA 13 sprinklers in their large assisted living facilities with residents needing assistance with evacuation. The exception is revised to allow NFPA 13R in other Group I-1 Condition 1 facilities, maintaining the current exception for the current capable Group I-1 uses.

The exception number 2 is deleted since a NFPA 13D system for single family residential or other small facilities was never intended to be allowed in and Group I-1 facility serving more than 16 residents, irrelevant of whether they require assistance with evacuation.

(IFC) Section 903.2.8.1 is revised to separate the Group R-3 and Group R-4 provisions.

(IFC) Section 903.2.8.2 is added as a clerical revision maintaining the current requirement of sprinklers in accordance with Section 903.3.1.3 in capable Group R-4 which is the new Group R-4 Condition 1.

(IFC) Section 903.2.8.3 is revised to allow for the new R-4 Condition 2 occupancy. The R-4 Condition 2 occupancy would have both an NFPA13R sprinkler system required as well as added attic protection. In attics not used for living purposes, storage or fuel fired equipment, there are four options offered. Either the smoke detection system will provide early warning of an attic fire, or the chance of a fire in the attic is reduced by construction or sprinklers. Automatic sprinklers in the unheated attic space would have a freezing issue in group homes in northern climates, so additional options are necessary.

(IFC) Section 903.3.1.3 Automatic sprinkler system requirement is revised to reflect the proposed changes to the Group R-4 occupancy.

(IFC) Section 907.2.6.1 is revised to eliminate the smoke detection exception only in buildings housing Group I-1 Condition 2 occupancies. This proposal still allows the exception to be applied to other buildings with Group I-1 Condition 1 as defined by fire walls or exterior walls.

Section 1018.1 Corridor Construction is revised to allow halls within dwelling units in Group I-1 be non-rated just like R occupancies as a missed oversight from previous editions of the code.

Footnotes

1. The substantiation of residents needing some assistance with evacuation occurring in assisted living and other custodial care uses was cited in the original G21 proposal for IBC changes during the 2009/10 code change cycle. It substantiated findings from a national analysis on assisted living performed for the State of Hawaii in 2007 titled “Assisted Living Analysis of All State Regulations Relative to Building Codes and Life Safety Codes.” It showed that virtually all states allow residents needing limited assistance with evacuation in at least one of their categories of assisted living/ residential care facilities and that about two-thirds of all categories allow this occupant type. The analysis confirmed that assisted living/ residential care facilities receive custodial care (older IBC term personal care) and not medical care, and also confirmed the division of size of facilities in Groups I-1 and R-4, so it is appropriately categorized in the IBC relative to care type and sizes. It substantiated that assisted living/ residential care is the largest and fastest growing use in Groups I-1 and R-4. The analysis also confirmed other various aspects of a custodial care program, uses, and protection features differentiating it from medical (health) care. It presented findings and conclusions that a combination of both Group I and R protection features for custodial care with residents needing some assistance with evacuation as is proposed here, is the consistent to what the largest number of various state licensing agencies have implemented in regulating life safety protection for this use by individual states. It showed that the concepts proposed herein are also consistent or similar to what at least three states have already incorporated into their statewide amendments for the IBC (California, Oregon, and Washington.)

2. Industry representatives confirmed in information provided to the CTC that custodial care and especially assisted living/ residential care IBC occupancy classification varies greatly across the country. Industry substantiated that it is mostly due to the IBC stating that only occupants who can evacuate on their own occur in IBC custodial care occupancies versus what actually occurs nationally. This conflict then causes some custodial care to be classified as a hybrid of Group I-1 and I-2 in states amending the IBC, some classified as Group I-2, some classified as general I-1 or I-2 hybrids in states enforcing other varying standards (NFPA 101), some individual projects applying alternative means creating a hybrid occupancy, and some miss-applying the capability standard. The industry representatives were associated with the American Health Care Association, Assisted Living Federation of America, and Leading Age as the three industry trade associations representing almost all assisted living/ residential care in the country.

Cost Impact: The proposed changes will not increase the cost of construction. Reduction

Public Hearing Results

Both parts of this proposal were heard by the IBC General code development committee.

PART II – IFC

Committee Action:

Approved as Submitted

Committee Reason: Part II of G31 was approved as submitted to be consistent with the action on G31-12 Part I. This proposal also addresses the more specific need for NFPA 13R systems in Group R-4 Occupancies, condition 2 versus allowing NFPA 13D in Condition 1 Group R-4 Occupancies.

Assembly Action:

None

Final Hearing Results

G31-12 Part II

AS

Code Change No: **G34-12**

Original Proposal

Section(s): 308.3, 310.6

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee

Revise as follows:

308.3 Institutional Group I-1. This occupancy shall include buildings, structures or portions thereof for more than 16 persons who reside on a 24 hour basis in a supervised environment and receive *custodial care*. The persons receiving care are capable of self preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- ~~Convalescent facilities~~
- Group homes
- Halfway houses
- Residential board and *custodial care* facilities
- Social rehabilitation facilities

310.6 Residential Group R-4. This occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive *custodial care*. The persons receiving care are capable of self-preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- ~~Convalescent facilities~~
- Group homes
- Halfway houses
- Residential board and *custodial care* facilities
- Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code.

Reason: This term is outdated and should be deleted from Group I-1. The term 'convalescent home' is being currently being incorrectly used in IMC Table 403.3 as a Group I-2 facility. There is a correlative proposal to delete the term from IMC Table 403.3. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

Cost Impact: The proposed changes will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved to be consistent with current terminology. The term "convalescent" is no longer used.

Assembly Action:

None

Final Hearing Results

G34-12

AS

Code Change No: **G40-12**

Original Proposal

Section(s): 202, 310.5, 310.5.2 (NEW), IPC Table 403.1 (IBC [P] Table 2902.1)

Proponent: Tim Nogler, Washington State Building Code Council, representing Washington Association of Building Officials Technical Code Development Committee (tim.nogler@des.wa.gov)

Revise as follows:

310.5 Residential Group R-3. Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

- Buildings that do not contain more than two *dwelling units*
- Boarding houses* (nontransient) with 16 or fewer occupants
- Boarding houses* (transient) with 10 or fewer occupants
- Care facilities that provide accommodations for five or fewer persons receiving care
- Congregate living facilities* (nontransient) with 16 or fewer occupants
- Congregate living facilities* (transient) with 10 or fewer occupants
- Lodging houses* with five or fewer *quest rooms*

310.5.2 Lodging houses. Owner occupied *lodging houses* with five or fewer *quest rooms* shall be permitted to be constructed in accordance with the *International Residential Code*.

Add new definitions as follows:

SECTION 202 DEFINITIONS

GUEST ROOM. A room used or intended to be used by one or more guests for living or sleeping purposes.

LODGING HOUSE. A one family dwelling where one or more occupants are primarily permanent in nature, and rent is paid for guestrooms.

Revise as follows:

**IPC TABLE 403.1 (IBC [P] TABLE 2902.1)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a
(See IPC Sections 403.2 and 403.3)
(See IBC Sections 2902.2 and 2902.3)**

No.	Classification	Occupancy	Description	WATER CLOSETS (Urinals see section 419.2 of the IPC)		LAVATORIES		BATHTUBS/SHOWERS	Drinking Fountains ^{s,f} (See Section 410.1 of the IPC)	OTHER
				MAL E	FEMALE	MAL E	FEMALE			
7	Residential	R-3	One-and two-family dwellings and <u>lodging houses</u>	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	--	1 kitchen sink per dwelling unit; 1 automatic clothes

			<u>with 5 or fewer guest rooms</u>					washer connecti on per dwelling unit
--	--	--	------------------------------------	--	--	--	--	--------------------------------------

(Portions of table not shown remain unchanged)

Reason: The purpose of this code change is to allow a small bed and breakfast or similar lodging to be classified as single family. The proposed definitions are from the 2012 IRC. This proposal makes the IBC consistent with the IRC in regulating “lodging houses”. The 2012 IRC scope covers lodging house occupancies with five or fewer guestrooms, when equipped with a fire sprinkler system. In the previous cycle, the IBC General committee had concerns that adding the IRC definitions to the IBC would create conflict with chapter 29 required plumbing fixtures. The committee had concerns that a new Group R-3 occupancy would create confusion with how to determine minimum number of plumbing fixtures per chapter 29. To address that concern, this proposal adds “lodging house” to IPC Table 403.1 (IBC Table 2902.1) to be consistent with one-family dwellings.

Cost Impact: This code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The concept addressed is similar to G41-12 but based upon number of rooms versus occupants. This does not work with the IBC construct of occupant load but is consistent with the IRC approach. A possible solution is using total number of occupants similar to G41-12. It was encouraged to coordinate with G41-12 and evaluate how this proposal works with the accessibility requirements.

Assembly Action:

None

Public Comment

Public Comment:

Clare Ray Allshouse AIA, CBO, City of Shoreline, WA, representing Washington Association of Building Officials Technical Code Development Committee, requests Approval as Submitted.

Commenter’s Reason: The Committee disapproved the original proposal in part due to a failure to work within the IBC construct of occupant load (number of occupants versus rooms) even though it was acknowledged that it is consistent with the IRC approach. The terms used in this proposal are identical to the terms currently used in the IRC. Since the expressed purpose of this proposal is to coordinate the IBC with the IRC, it would seem most appropriate to define it in IRC terms to reduce the potential for confusion in its proper application. Furthermore, by making this scope clarification in the IBC that these occupancies are subject to the provisions of the IRC, the accessibility question raised by the Committee is resolved by definition.

Final Hearing Results

G40-12

AS

Code Change No: **G42-12**

Original Proposal

Section(s): 311.1.2 (NEW) (IFC [B] 202)

Proponent: Tod Connors, Arlington County (VA) Department of Community Planning, Housing, and Development/Division of Inspection Services, representing self

Revise as follows:

311.1.2 Accessory storage spaces. A room or space used for storage purposes that is less than 100 square feet (9.3m²) in area and accessory to another occupancy will be classified as part of that occupancy. The aggregate area of such rooms or spaces shall not exceed the allowable area limits of Section 508.2.

Reason: Storage rooms were removed from Incidental Uses, Table 509. Storage is now treated as a mixed use condition and must meet either the requirements of 508.2 Accessory occupancies, 508.3 Nonseparated occupancies, or 508.4 Separated occupancies. When applying these mixed use sections in B occupancy buildings of IIB or IIA construction, an S-I storage room cannot be placed on the highest floor allowed by Table 503 Allowable Building Heights and Areas and Section 504 Building Height. The 100 square foot lower limit would allow small storage rooms on upper floors. This area is the same lower limit used in the Incidental Use Table when storage rooms were last included. The statement limiting area to the limits under current Accessory occupancy requirements is to preclude a large number of small storage rooms in excess of what other code sections limit.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Editorial revision

Modify proposal as follow:

311.1.2 Accessory storage spaces. A room or space used for storage purposes that is less than 100 square feet (9.3m²) in area and accessory to another occupancy ~~will~~ shall be classified as part of that occupancy. The aggregate area of such rooms or spaces shall not exceed the allowable area limits of Section 508.2.

Committee Action:

Approved as Submitted

Committee Reason: This proposal was approved based upon the proponent's reason. This is another way of gaining small storage areas on upper floors although G126-12 is the preferred approach. Editorial revision makes consistent with current code language.

Assembly Action:

None

Final Hearing Results

G42-12

AS

Code Change No: G70-12

Original Proposal

Section(s): 202, 407.4.2, 407.4.3.3, 407.4.3.4, 407.4.3.5, 407.4.3.5.1, 407.4.3.5.3

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Revise as follows:

CARE SUITE. In Group I-2 occupancies, a group of treatment rooms, care recipient sleeping rooms and ~~the associated~~ the support rooms or spaces and circulation space within the suite ~~Group I-2 occupancies~~ where staff are in attendance for supervision of all care recipients within the suite, and the suite is in compliance with the requirements of Section 407.4.3.

Revise as follows:

407.4.2 Travel distance. The travel distance between any point in a Group I-2 occupancy sleeping room, not located in a care suite, and an *exit access* door in that room shall be not greater than 50 feet (15 240 mm).

407.4.3 Group I-2 care suites. *Care suites* in Group I-2 shall comply with Section 407.4.3.1 through 407.4.3.4 and either Section 407.4.3.5 or 407.4.3.6.

407.4.3.1 Exit access through care suites. *Exit access* from all other portions of a building not classified as a *care suite* shall not pass through a *care suite*. In a *care suite* required to have more than one *exit*, one *exit access* is permitted to pass through an adjacent *care suite* provided all of the other requirements of Sections 407.4 and 1014.2 are satisfied.

407.4.3.2 Separation. *Care suites* shall be separated from other portions of the building by a smoke partition complying with Section 710.

~~**407.4.3.3 One intervening room.** For rooms other than sleeping rooms located within a *care suite*, *exit access* travel from the *care suite* shall be permitted through one intervening room where the travel distance to the *exit access* door from the *care suite* is not greater than 100 feet (30 480 mm).~~

407.4.3.3 Access to Corridor. Movement from habitable rooms shall not require passage through no more than 3 doors and 100 feet (30 480 mm) travel distance within the suite.

Exception: The travel distance shall be permitted to be increased to 125 feet (38 100 mm) where an automatic smoke detection system is provided throughout the *care suite* and installed in accordance with NFPA 72.

~~**407.4.3.4 Two intervening rooms.** For rooms other than sleeping rooms located within a *care suite*, *exit access* travel within the *care suite* shall be permitted through two intervening rooms where the travel distance to the *exit access* door from the *care suite* is not greater than 50 feet (15 240 mm).~~

407.4.3.5 ~~407.4.3.4~~ Care suites containing sleeping room areas. Sleeping rooms shall be permitted to be grouped into *care suites* ~~with one intervening room~~ if one of the following conditions is met:

1. The ~~intervening room within~~ the *care suite* is not used as an *exit access* for more than eight care recipient beds.
2. The arrangement of the *care suite* allows for direct and constant visual supervision into the sleeping rooms by care providers.
3. An automatic smoke detection system is provided in the sleeping rooms and installed in accordance with NFPA 72.

407.4.3.5.1 407.4.3.4.1 Area. *Care suites* containing sleeping rooms shall be not greater than ~~5,000~~ 7,500 square feet (~~465~~ 696 m²) in area.

Exception: *Care suites* containing sleeping rooms shall be permitted to be not greater than 10,000 sq feet (929 m²) in area where automatic smoke detection system is provided throughout the *care suite* and installed in accordance with NFPA 72.

407.4.3.5.2 407.4.3.4.2 Exit access. Any sleeping room, or any *care suite* that contains sleeping rooms, of more than 1,000 square feet (93 m²) shall have no fewer than two *exit access* doors from the *care suite* located in accordance with Section 1015.2.

407.4.3.5.3 Travel distance. ~~The travel distance between any point in a *care suite* containing sleeping rooms and an *exit access* door from that *care suite* shall be not greater than 100 feet (30 480 mm).~~

Reason: This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>. In relation to the code change proposal dealing with size and configuration of care suites, the definition is being proposed with changes to address the scope of which the suites are used. Suites are recognized to be an effective tool to provide some flexibility in reaching an exit access, due to functional considerations. Use of suites is a particularly useful tool at Intensive Care Units and Emergency Departments in patient treatment areas. The ability to have full visual wall systems that have a breakaway function is extremely beneficial during any type of emergency situation, including defend-in-place, evacuation as well as day-to-day care. These systems allow for observation while providing a level of privacy for the patient. These systems are also flexible enough to handle multiple levels of acuity in the same space.

It is not the intent to broaden the definition so widely as to effectively eliminate the use of corridors as exit access. This change attempts to clarify that associated support spaces of care suites, such as pharmacies, laboratories, linen rooms and storage rooms which are not located within the care suite are not required to be classified as care suites.

The proposal relaxes several requirements due to providing additional fire protection features and clarifies code intent on requirements. The 5,000 square ft limitation for care suites was in legacy building codes before sprinkler protection was required in Group I-2 occupancies. Sprinkler protection provides additional life safety to building occupants which justifies the care suite containing sleeping rooms area increase to 7,500 square ft. Providing an automatic smoke detection system throughout a care suite containing sleeping rooms or constant staff supervision into the sleeping rooms further justifies increasing the area to 10,000 square ft.

The proposal also removes the intervening room from the travel distance requirements as an intervening room is difficult to define and conflicts with industry practice for design of certain units. For example does a pair of "cross corridor" doors within a suite constitute an intervening room? A provision was added to limit the number of doors required for a patient sleeping bed to reach the exit access corridor which addresses concerns regarding patient evacuation of the suite. Current requirements make it difficult to plan the sleeping portion of the suite in under 5,000 square feet, primarily because of the required size of the patient sleeping room. In the past, a sixteen bed area could get under the space requirement, with support spaces such as clean and soiled utilities falling outside that portion of the suite. However, the Intensive Care Unit programming data supports the need for the basic patient room / staff space elements of the program can be accommodated in under 7,500 square feet, but not less than 5,000 square feet. In order to properly staff a unit, the need for unobstructed view from a nurses station to a patient room is needed. This cannot be done with the barrier to form a suite down the middle of the unit, and therefore the staff area. The proposed change enables removal of that barrier while optimizing operational efficiency of the unit, including the fire safety watch of the unit by staff.

To achieve a 7,500 square foot suite, the program becomes very limited to the spaces that are involved in the direct care of the patient, as demonstrated on the Intensive care Suite program developed for this proposal (see the "IntensiveCareUnit-7500" tab in the noted programming file). Key spaces such as the break room and utility spaces are outside of the suite, which is workable from an operational standpoint, but not ideal. Key spaces such as staff support and utility spaces are outside of the suite. Increasing to 10,000 square feet allows inclusion of staff more staff and support spaces within the suite. Operationally, this is a key

factor because the staff will not need to leave the suite on their break time, when retrieving supplies, or to access the staff toilet because it improves the response time of the staff during a medical emergency, or a fire / safety situation.

The proposal clarifies the 50 ft travel distance limitation from a patient sleeping room to an exit access door does not apply in care suites. The provision of crossing through three doors is also being introduced to help clarify what is now called out as 'intervening spaces.' Use of three doors is much clearer to a reviewer and designer, rather than defining what is an intervening space on a project-by-project basis.

The proposal also permits smoke detection to be provided in sleeping rooms of care suites where direct supervision of patients by staff is not possible. Smoke detection in the patient room provides equivalent early detection of a fire. The proposal attempts to maintain the level of life safety in care suites while providing more options to health care design professionals to facilitate excellent patient experience and treatment.

The travel distance provisions in care suites with sleeping rooms was increased to 125 ft to reach an exit access corridor based on the additional level of protection provided by direct and constant supervision into sleeping rooms by care providers or complete smoke detection throughout the suite as well as limiting the number of doors permitted for a patient sleeping bed to reach the exit access corridor.

This committee also has a correlative change to IFC with proposed language in IBC 407.8 and 907.2.6.2 coordinates with the proposed language automatic smoke detection system requirements in IBC 407.4.3.

Refer to attached "ICC_AHCHC Programming_10-10-2011.xlsx" for programming data as it relates to Intensive Care Units. This program is based on the noted version of the AIA or FGI Guidelines for Planning of Healthcare Facilities, for the support of the 7,500 square foot increases as noted above. A copy of the programming document can be found at www.iccsafe.org.

Cost Impact: The proposed changes will not increase the cost of construction.

Public Hearing Results

This code change was heard by the IBC Means of Egress code development committee.

The following errata were not posted to the ICC website.

Modify proposal as follows:

407.4.3.3 Access to Corridor. Movement from habitable rooms shall not require passage through ~~no~~ more than 3 doors and 100 feet (30 480 mm) travel distance within the suite.

Exception: The travel distance shall be permitted to be increased to 125 feet (38 100 mm) where an automatic smoke detection system is provided throughout the *care suite* and installed in accordance with NFPA 72.

Committee Action:

Approved as Submitted

Committee Reason: The erratum is editorial to remove a double negative. The use of 'doors' instead of 'intervening rooms' provides for a more uniform enforcement when determining egress from a suite. Intervening rooms are inconsistently interpreted when dealing with anti-rooms, patient bathrooms or corridors/vestibules within the suite. The proposal will provide appropriate separation requirements for suites. The increased suite size will coordinate with what is permitted by 2012 NFPA 101.

Assembly Action:

None

Final Hearing Results

G70-12

AS

Code Change No: G71-12 Part II

Original Proposal

Section(s): 906.2, Table 906.3(1), Table 906.3(2), 907.2.6, 907.2.10.1 (IBC [F] 906.2, Table 906.3(1), Table 906.3(2), 907.2.6, 907.2.10.1)

Proponent: Philip Brazil, PE, Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development (pbrazil@reidmiddleton.com)

THIS IS A 3 PART PROPOSAL AND ALL THREE PARTS ARE ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

PART II – IFC

Revise as follows:

IFC 906.2 (IBC [F] 906.2) General requirements. Portable fire extinguishers shall be selected and installed in accordance with this section and NFPA 10.

Exceptions:

1. The ~~travel~~ distance of travel to reach an extinguisher shall not apply to the spectator seating portions of Group A-5 occupancies.
2. In Group I-3, portable fire extinguishers shall be permitted to be located at staff locations.

**TABLE 906.3(1) [IBC [F] TABLE 906.3(1)]
FIRE EXTINGUISHERS FOR CLASS A FIRE HAZARDS**

	LIGHT (low) HAZARD OCCUPANCY	ORDINARY (moderate) HAZARD OCCUPANCY	EXTRA (high) HAZARD OCCUPANCY
Minimum Rated Single Extinguisher	2-A ^c	2-A	4-A ^a
Maximum Floor Area per Unit of A	3,000 square feet	1,500 square feet	1,000 square feet
Maximum Floor Area for Extinguisher ^b	11,250 square feet	11,250 square feet	11,250 square feet
Maximum Travel Distance <u>of Travel</u> to Extinguisher	75 feet	75 feet	75 feet

(Portions to table not shown remain unchanged)

**TABLE 906.3(2) [IBC [F] TABLE 906.3(2)]
FIRE EXTINGUISHERS FOR FLAMMABLE OR COMBUSTIBLE LIQUIDS
WITH DEPTHS LESS THAN OR EQUAL TO 0.25 INCH**

TYPE OF HAZARD	BASIC MINIMUM EXTINGUISHER RATING	MAXIMUM TRAVEL DISTANCE OF TRAVEL TO EXTINGUISHERS (feet)
Light (Low)	5-B	30
	10-B	50
Ordinary (Moderate)	10-B	30
	20-B	50
Extra (High)	40-B	30
	80-B	50

(Portions to table not shown remain unchanged)

907.2.6 (IBC [F] 907.2.6) Group I. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group I occupancies. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in accordance with Sections 907.2.6.1, 907.2.6.2 and 907.2.6.3.3.

Exceptions:

1. Manual fire alarm boxes in sleeping units of Group I-1 and I-2 occupancies shall not be required at *exits* if located at all care providers' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that ~~travel~~ the distances of travel required in Section 907.4.2.1 are not exceeded.
2. Occupant notification systems are not required to be activated where private mode signaling installed in accordance with NFPA 72 is *approved* by the fire code official.

907.2.10.1 (IBC [F] 907.2.10.1) Manual fire alarm system. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group R-4 occupancies.

Exceptions:

1. A manual fire alarm system is not required in buildings not more than two *stories* in height where all individual *sleeping units* and contiguous *attic* and crawl spaces to those units are separated from each other and public or common areas by at least 1-hour *fire partitions* and each individual *sleeping unit* has an *exit* directly to a *public way, egress court* or *yard*.
2. Manual fire alarm boxes are not required throughout the building when the following conditions are met:
 - 2.1. The building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2;
 - 2.2. The notification appliances will activate upon sprinkler waterflow; and
 - 2.3. At least one manual fire alarm box is installed at an *approved* location.
3. Manual fire alarm boxes in resident or patient sleeping areas shall not be required at *exits* where located at all nurses' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that ~~travel~~ the distances of travel required in Section 907.4.2.1 are not exceeded.

Reason: The change from "travel distance" to "distance of travel" more clearly distinguishes between "exit access travel distance" as specified in Section 1016 and a travel distance that is other than an exit access travel distance for which the provisions of Section 1016 do not apply. Note that Section 1016.3 specifies the measurement of exit access travel distance as being from "the most remote point within a story along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an exit," except for open parking garages and outdoor facilities with open access components where it is measured as specified therein. The sections in this proposal, however, specify the measurement of travel distance between points within the exit access (i.e., to an exit access door in Sections 407.4.2, 407.4.3.3, 407.4.3.4 and 407.4.3.5.3; to a smoke barrier door in Sections 407.5, 408.6.1 and 422.3; to an extinguisher in Section 906.2 and Tables 906.3(1) and 906.3(2); etc.).

Changing from "travel distance" to "distance of travel" in these cases is considered to be clarifying and does not change the meaning or the intent of the language. The changes will also be consistent with "distance of travel" in 2012 IBC Sections 402.8.3, 402.8.5 and 415.10.3.3. The other change in Section 2902.5 is grammatical. Based on our analysis of the 2012 IBC, all instances of "travel distance" in the 2012 IBC where a change to "distance of travel" is warranted are included in this proposal.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

All three parts of this code change was heard by the IBC Means of Egress code development committee.

PART II – IFC

Committee Action:

Approved as Submitted

Committee Reason: The proposal clarifies where a distance is not 'exit access travel distance' as the term is used in Section 1016, but is a distance utilized for other types of elements. The IFC deals with distance of travel to items such as fire extinguishers and fire alarm pulls.

Assembly Action:

None

Final Hearing Results

G71-12 Part II

AS

Code Change No: **G80-12**

Original Proposal

Section(s): 407.11(New), IFC 604.2.15 (New) [IBC [F] 2702.2.16 (New)]

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Add new text as follows:

407.11 Electrical systems. In Group I-2 occupancies, the essential electrical power for electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of Chapter 27 and NFPA 99.

Add new text as follows:

IFC 604.2.15 (IBC [F] 2702.2.16) Group I-2 Occupancies. Essential electrical power for Group I-2 occupancies shall be in accordance with Section 407.11.

Reason: Currently emergency power systems are required to comply with NFPA 99 by the Center for Medicare/Medicaid Services (CMS) in order for a facility to receive federal reimbursement funds. Providing the code language requiring compliance with NFPA 99 will ensure the required power system is provided in Group I-2 occupancies. While there is a reference to NFPA 99 in NFPA 70, there is no direct reference. This closes up a gap in the requirements. A reference to Chapter 27 will comprehensively address electrical systems including references to NFPA 70, 110 and 111.

This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

Cost Impact: The proposed changes will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This proposal was consistent with G77-12 which was Approved as Submitted. This proposal references NFPA 99 which provides a method of understanding the particular risks of a facility. This proposal adds additional clarification as to what is required for Group I-2 occupancies. G77-12 should be coordinated with G80-12.

Assembly Action:

None

Public Comments

Public Comment:

John Williams, Adhoc Health Care – MOE study group, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

407.11 Electrical systems. In Group I-2 occupancies, the essential electrical ~~power~~ power system for electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of Chapter 27 and NFPA 99.

IFC 604.2.15 (IBC [F] 2702.2.16) Group I -2 Occupancies. Essential electrical power systems for Group I-2 occupancies shall be in accordance with Section 407.11.

Commenter's Reason: The intent of the modification would be to revise the term "essential electrical power" to use the NFPA defined term as defined by NFPA 99-2012, as follows:

3.3.48 Essential Electrical System. A system comprised of alternate sources of power and all connected distribution systems and ancillary equipment, designed to ensure continuity of electrical power to designated areas and functions of a health care facility during disruption of normal power sources, and also to minimize disruption within the internal wiring system.

Appendix commentary: A.3.3.48 Essential Electrical System. The essential electrical system can be comprised of three branches: life safety branch, critical branch, and equipment branch.

In addition, the intent is to coordinate this proposal with G77. Chapter 27 has a reference to NFPA 110 for the review of the system. NFPA 99 allows the use of the risk based approach for analysis of the fuel and water supply needs. The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 7 open meetings and over 100 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Final Hearing Results

G80-12

AMPC1

Code Change No: **G257-12**

Original Proposal

Section(s): 308.4, 308.4.1, 308.4.1.1(new), 308.4.1.2(new)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Revise as follows:

308.4 Institutional Group I-2. This occupancy shall include buildings and structures used for *medical care* on a 24-hour basis for more than five persons who are *incapable of self preservation*. This group shall include, but not be limited to, the following:

Foster care facilities
Detoxification facilities
Hospitals
Nursing homes
Psychiatric hospitals

308.4.1 Occupancy Conditions. Buildings of Group I-2 shall be classified as one of the occupancy conditions indicated in Sections 308.4.1.1 through 308.4.1.2.

308.4.1.1 Condition 1. This occupancy condition shall include facilities that provides nursing and medical care and could also provide emergency care, surgery, obstetrics, or in-patient stabilization units for psychiatric or detoxification, including, but not limited to hospitals.

308.4.1.2 Condition 2. This occupancy condition shall include facilities that provides nursing and medical care but does not provide emergency care, surgery, obstetrics, or in-patient stabilization units for psychiatric or detoxification, including, but not limited to nursing homes and foster care facilities.

308.4.1-308.4.2 Five or fewer persons receiving care. A facility such as the above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.

Reason: This proposal is to provide a subset of occupancy uses amongst those healthcare uses that have been regulated together as one unit for many years.

Due to the diversification of how medical care is provided in the 5 characteristic occupancies given currently in the IBC for Group I-2 occupancies, this proposal splits the I-2 into two basic conditions; short-term care (hospitals) and long-term care (nursing homes). Whereas both of these subsets are based on medical treatment and are an occupancy group that the occupants are provided with a defend-in-place method of safety, changes in the delivery of care in the two different subgroups has changed in the past 10-20 years. Some examples of the changes include:

- Within Hospitals, there has been a general increase in the floor area per patient due to the increase in diagnostic equipment and the movement towards single occupant patient rooms.
- Within Nursing Homes, there has been a trend to provide more residential-type accommodations, such as group/suite living, fuel-fired appliances, and cooking facilities in residential areas.

The 'condition' concept is based on Group I-3 occupancies and the split this occupancy needs to effectively regulate amongst several levels of restraint. The benefit to the 'condition' concept, when compared to new use groups (i.e. I-5 or I-6) is that a majority of code requirements will still apply to all Group I-2 occupancies; such as mechanical systems, property maintenance, and rehabilitation. Furthermore, it removes potentially confusing code language from requirements when 'building specific' language is placed into code sections; such as the case with the current fire alarm section pertaining to Group I-2.

Detoxification facilities and facilities where patients receive psychiatric treatment can vary from hospitals where patients are at the beginning stages or detoxification or at psychiatric extremes that require medical care. These would be classified as Occupancy Condition 1. If the facilities were more along the line of counseling and rehabilitation in a care environment, the facility could be classified as Condition 2, or even as a Group I-1.

This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

Cost Impact: None

Public Hearing Results

Errata as shown below are contained in the Updates to the 2012 Proposed Changes posted on the ICC website. Please go to <http://www.iccsafe.org/cs/codes/Pages/12-13-ProposedChanges-A.aspx> for more information.

Revise as follows:

308.4 Institutional Group I-2. This occupancy shall include buildings and structures used for *medical care* on a 24-hour basis for more than five persons who are *incapable of self preservation*. This group shall include, but not be limited to, the following:

Foster care facilities
Detoxification facilities
Hospitals
Nursing homes
Psychiatric hospitals

308.4.1 Occupancy Conditions. Buildings of Group I-2 shall be classified as one of the occupancy conditions indicated in Sections 308.4.1.1 through 308.4.1.2.

308.4.1.1 Condition 1. This occupancy condition shall include facilities that provides nursing and medical care and could also provide emergency care, surgery, obstetrics, or in-patient stabilization units for psychiatric or detoxification, including, but not limited to hospitals.

308.4.1.2 Condition 2. This occupancy condition shall include facilities that provides nursing and medical care but does not provide emergency care, surgery, obstetrics, or in-patient stabilization units for psychiatric or detoxification, including, but not limited to nursing homes and foster care facilities.

308.4-308.4.2 Five or fewer persons receiving care. A facility such as the above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.

Committee Action:

Approved as Modified

Modify proposal as follows:

~~308.4.1.1-308.4.1.2~~ **Condition 2 Condition 1.** This occupancy condition shall include facilities that provides nursing and medical care but does not provide emergency care, surgery, obstetrics, or in-patient stabilization units for psychiatric or detoxification, including, but not limited to nursing homes and foster care facilities.

~~308.4.1.2-308.4.1.1~~ **Condition 1 Condition 2.** This occupancy condition shall include facilities that provides nursing and medical care and could also provide emergency care, surgery, obstetrics, or in-patient stabilization units for psychiatric or detoxification, including, but not limited to hospitals.

(Portions not shown remain unchanged)

Committee Reason: This proposal was approved as submitted as it recognizes the differences between hospitals and nursing homes in terms of the type of functions in such facilities. Note that the modification clarifies that the committee felt that the categories should be reversed as it was felt that the conditions should match the level of risk as addressed in G31-12 introducing Categories I and II for Group I-1 occupancies.

Assembly Action:

None

Final Hearing Results

G257-12

AM

Code Change No: E1-12

Original Proposal

Section(s): 202, 1006 (New), 1007 (New), 1014.3, 1015, 1020.1, 1021 (IFC [B] 1006 (New), 1007 (New), 1014.3, 1015, 1020.1, 1021)

Proponent: Charles S. Bajnai, Chesterfield County, VA, ICC Building Code Action Committee

Revise as follows:

SECTION 202 DEFINITIONS

COMMON PATH OF EGRESS TRAVEL. That portion of the exit access travel distance measured from the most remote point within a story to that point where ~~which~~ the occupants are required to traverse before two have separate and distinct paths of egress travel access to two exits or exit access doorways are available. Paths that merge are common paths of travel. Common paths of egress travel shall be included within the permitted travel distance.

Revise as follows:

1014.3 (IFC [B] 1014.3) Common path of egress travel. The common path of egress travel shall not exceed the common path of egress travel distances in Table 1014.3.

**TABLE 1014.3 (TABLE [B] 1014.3)
COMMON PATH OF EGRESS TRAVEL**

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)		WITH SPRINKLER SYSTEM (feet)
	Occupant Load		
	OL ≤ 30	OL > 30	
B, S ^a	100	75	100 ^a
U	100	75	75 ^a
F	75	75	100 ^a
H-1, H-2, H-3	Not Permitted	Not Permitted	25 ^a
R-2	75	75	125 ^b
R-3 ^e	75	75	125 ^b
I-3	100	100	100 ^a
All others ^e	75	75	75 ^{a,b}

For SI: 1 foot = 304.8 mm.

- a. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
- b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.
- c. For a room or space used for assembly purposes having fixed seating, see Section 1028.8.
- d. The length of a common path of egress travel in a Group S-2 open parking garage shall not be more than 100 feet (30 480 mm).
- e. The length of a common path of egress travel in a Group R-3 occupancy located in a mixed-occupancy building.
- f. For the distance limitations in Group I-2, see Section 407.4.

SECTION 1015 1006 (IFC [B] 1015 1006) NUMBERS OF EXITS AND EXIT ACCESS DOORWAYS

1015.4 1006.1 (IFC [B] 1015.4 1006.1) General Exits or exit access doorways from spaces. The number of exits or exit access doorways required within the means of egress system shall comply with

the provisions of Section 1006.2 for spaces and Section 1006.3 for stories. Two exits or exit access doorways from any space shall be provided where one of the following conditions exists:

1. The *occupant load* of the space exceeds one of the values in Table 1015.1.

Exceptions:

1. In Group R-2 and R-3 occupancies, one *means of egress* is permitted within and from individual dwelling units with a maximum *occupant load* of 20 where the dwelling unit is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Care suites in Group I-2 occupancies complying with Section 407.4.3.
2. The *common path of egress travel* exceeds one of the limitations of Section 1014.3.
3. Where required by Section 1015.3, 1015.4, 1015.5, or 1015.6.

Where a building contains mixed occupancies, each individual occupancy shall comply with the applicable requirements for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1.

**TABLE 1015.1 (IFC [B] TABLE 1015.1)
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY**

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E, F, M, U	49
H 1, H 2, H 3	3
H 4, H 5, I 1, I 2, I 3, I 4, R	10
S	29

1006.2 (IFC [B] 1006.2) Egress from spaces. Rooms, areas or spaces, including mezzanines, within a story or basement shall be provided with the number of exits or access to exits in accordance with this section.

1006.2.1 (IFC [B] 1006.2.1) Egress based on occupant load and common path of egress travel distance. Two exits or exit access doorways from any space shall be provided where the design occupant load or the common path of egress travel distance exceeds the values listed in Table 1006.2.1.

Exceptions:

1. In Group R-2 and R-3 occupancies, one *means of egress* is permitted within and from individual dwelling units with a maximum *occupant load* of 20 where the dwelling unit is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 and the common path of egress travel does not exceed 125 feet (38 100 mm).
2. Care suites in Group I-2 occupancies complying with Section 407.4.

**TABLE 1006.2.1 (IFC [B] 1006.2.1)
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY**

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)		
		WITHOUT SPRINKLER SYSTEM		WITH SPRINKLER SYSTEM
		Occupant Load		
		OL ≤ 30	OL > 30	
A ^a , E, M, U	49	75	75	75 ^b
B	49	100	75	100 ^b

<u>OCCUPANCY</u>	<u>MAXIMUM OCCUPANT LOAD OF SPACE</u>	<u>MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)</u>		
		<u>WITHOUT SPRINKLER SYSTEM</u>		<u>WITH SPRINKLER SYSTEM</u>
		<u>Occupant Load</u>		
		<u>OL ≤ 30</u>	<u>OL > 30</u>	
<u>E</u>	<u>49</u>	<u>75</u>	<u>75</u>	<u>100^b</u>
<u>H-1, H-2, H-3</u>	<u>3</u>	<u>NP</u>	<u>NP</u>	<u>25^b</u>
<u>H-4, H-5, I-1, I-2, I-4, R-1, R-3, R-4</u>	<u>10</u>	<u>NP</u>	<u>NP</u>	<u>75^b</u>
<u>I-3</u>	<u>10</u>	<u>NP</u>	<u>NP</u>	<u>100^b</u>
<u>R-2</u>	<u>10</u>	<u>NP</u>	<u>NP</u>	<u>125^c</u>
<u>R-3</u>	<u>10</u>	<u>NP</u>	<u>NP</u>	<u>125^d</u>
<u>S</u>	<u>29</u>	<u>100</u>	<u>75^e</u>	<u>100^b</u>
<u>U</u>	<u>49</u>	<u>100</u>	<u>75</u>	<u>75^b</u>

For SI: 1 foot = 304.8 mm.

NP – Not Permitted

- a. For a room or space used for assembly purposes having fixed seating, see Section 1028.8.
- b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
- c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.
- d. The length of common path of egress travel distance in a Group R-3 occupancy located in a mixed occupancy building shall be not more than 125 feet (38 100 mm).
- e. The length of common path of egress travel distance in a Group S-2 open parking garage shall be not more than 100 feet (30 480 mm).

1015.1.1 1006.2.1.1 (IFC [B] 1015.1.1 1006.2.1.1) Three or more exits or exit access doorways.

Three exits or exit access doorways shall be provided from any space with an occupant load of 501-1,000. Four exits or exit access doorways shall be provided from any space with an occupant load greater than 1,000.

1015.2 (IFC [B] 1015.2) Exit or exit access doorway arrangement. (relocated to new Section 1007)

1015.2.1 (IFC [B] 1015.2.1) Two exits or exit access doorways. (relocated to new Section 1007)

1015.2.2 (IFC [B] 1015.2.2) Three or more exits or exit access doorways. (relocated to new Section 1007)

1006.2.2 (IFC [B] 1006.2.2) Egress based on use. The numbers of exits or access to exits shall be in accordance with this section.

1015.3 1006.2.2.1 (IFC [B] 1015.3 1006.2.2.1) Boiler, incinerator and furnace rooms. Two *exit access doorways* are required in boiler, incinerator and furnace rooms where the area is over 500 square feet (46 m²) and any fuel-fired equipment exceeds 400,000 British thermal units (Btu) (422 000 KJ) input capacity. Where two *exit access doorways* are required, one is permitted to be a fixed ladder or an *alternating tread device*. *Exit access doorways* shall be separated by a horizontal distance equal to one-half the length of the maximum overall diagonal dimension of the room.

1015.4 1006.2.2.2 (IFC [B] 1015.4 1006.2.2.2) Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m²) shall have not less than two *exits* or *exit access doors*. Where two *exit access doorways* are required, one such doorway is permitted to be served by a fixed ladder or an *alternating tread device*. *Exit access doorways* shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of room.

All portions of machinery rooms shall be within 150 feet (45 720 mm) of an *exit* or *exit access doorway*. An increase in travel distance is permitted in accordance with Section 1016.1.

Doors shall swing in the direction of egress travel, regardless of the *occupant load* served. Doors shall be tight fitting and self-closing.

1015.5 1006.2.2.3 (IFC [B] 1015.5 1006.2.2.3) Refrigerated rooms or spaces. Rooms or spaces having a floor area larger than 1,000 square feet (93 m²), containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two *exits* or *exit access doors*.

Travel distance shall be determined as specified in Section 1016.1, but all portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an *exit* or *exit access door* where such rooms are not protected by an *approved automatic sprinkler system*. Egress is allowed through adjoining refrigerated rooms or spaces.

Exception: Where using refrigerants in quantities limited to the amounts based on the volume set forth in the *International Mechanical Code*.

1015.6 1006.2.2.4 (IFC [B] 1015.6 1006.2.2.4) Day care facilities. Day care facilities, rooms or spaces where care is provided for more than 10 children that are 2-1/2 years of age or less, shall have access to not less than two exits or exit access doorways.

SECTION 1021 (IFC [B] 1021) NUMBER OF EXITS AND EXIT CONFIGURATION

1021.3.1 (IFC [B] 1021.3.1) 1006.3 (IFC [B] 1006.3) Access to exits at adjacent levels. Egress from stories or occupied roofs The means of egress system serving any story or occupied roof shall be provided with the number of exits or access to exits based on the aggregate occupant load served in accordance with this section. Access to exits at other levels shall be by stairways or ramps. Where access to exits occurs from adjacent building levels, the horizontal and vertical exit access travel distance to the closest exit shall not exceed that specified in Section 1016.1. Access to exits at other levels shall be from an adjacent story.

Each story above the second story of a building shall have a minimum of one interior or exterior exit stairway, or interior or exterior exit ramp. Where a minimum of three or more exits, or access to exits are required, a minimum of 50 percent of the required exits shall be interior or exterior exit stairways or ramps.

Exception: Landing platforms or roof areas for helistops that are less than 60 feet (18 288 mm) long, or less than 2,000 square feet (186 m²) in area, shall be permitted to access the second exit by a fire escape, alternating tread device or ladder leading to the story or level below.

Exceptions:

1. Interior exit stairways and interior exit ramps are not required in open parking garages where the means of egress serves only the open parking garage.
2. Interior exit stairways and interior exit ramps are not required in outdoor facilities where all portions of the means of egress are essentially open to the outside.

1021.1 (IFC [B] 1021.10) 1006.3.1 (IFC [B] 1006.3.1) General Egress based on occupant load. Each story and occupied roof shall have the minimum number of exits, or access to exits, as specified in Table 1006.3.1 this section. A single exit or access to a single exit shall be permitted in accordance with Section 1006.3.3. The required number of exits, or exit access stairways or ramps providing access to exits, from any story shall be maintained until arrival at the exit discharge grade or a public way. Exits or access to exits from any story shall be configured in accordance with this section. Each story above the second story of a building shall have a minimum of one interior or exterior exit stairway, or interior or exterior exit

ramp. At each story above the second story that requires a minimum of three or more exits, or access to exits, a minimum of 50 percent of the required exits shall be interior or exterior exit stairways, or interior or exterior exit ramps.

Exceptions:

1. Interior exit stairways and interior exit ramps are not required in open parking garages where the means of egress serves only the open parking garage.
2. Interior exit stairways and interior exit ramps are not required in outdoor facilities where all portions of the means of egress are essentially open to the outside.

**TABLE 1006.3.1 (IFC [B] TABLE 1006.9.3.1)
MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY**

<u>OCCUPANT LOAD PER STORY</u>	<u>MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS FROM STORY</u>
1-500	<u>2</u>
501-1,000	<u>3</u>
More than 1,000	<u>4</u>

~~1021.2.4 (IFC [B] 1021.2.4) Three or more exits.~~ Three exits, or exit access stairways or ramps providing access to exits at other stories, shall be provided from any story or occupied roof with an occupant load from 501 to and including 1,000. Four exits, or exit access stairways or ramps providing access to exits at other stories, shall be provided from any story or occupied roof with an occupant load greater than 1,000.

~~1021.2.5 1006.3.2 (IFC [B] 1021.2.5 1006.3.2) Additional exits.~~ In buildings over 420 feet in height, additional exits shall be provided in accordance with Section 403.5.2.

~~1021.2 1006.3.3 (IFC [B] 1021.2 1006.3.3) Single exits Exits from stories.~~ Two exits, or exit access stairways or ramps providing access to exits, from any story or occupied roof shall be provided. A single exit or access to a single exit shall be permitted from any story or occupied roof, where one of the following conditions exists:

1. The occupant load or number of dwelling units ~~exceeds one of~~ and common path of egress travel distance does not exceed the values in Table 1006.3.3(1) or 1006.3.3(2) ~~1021.2(1) or 1021.2(2).~~
2. ~~The exit access travel distance exceeds that specified in Table 1021.2(1) or 1021.2(2) as determined in accordance with the provisions of Section 1016.1.~~
3. ~~Helistop landing areas located on buildings or structures shall be provided with two exits, or exit access stairways or ramps providing access to exits.~~

Exceptions:

- ~~42.~~ Rooms, areas and spaces complying with Table 1006.2.1 ~~Section 1015.4~~ with exits that discharge directly to the exterior at the level of exit discharge, are permitted to have one exit.
- ~~23.~~ Group R-3 occupancy buildings shall be permitted to have one exit.
- ~~34.~~ Parking garages where vehicles are mechanically parked shall be permitted to have one exit or access to a single exit.
- ~~45.~~ Air traffic control towers shall be provided with the minimum number of exits specified in Section 412.3.
- ~~5.~~ ~~Individual dwelling units in compliance with Section 1021.2.3.~~
- ~~6.~~ Group R-3 and R-4 congregate residences shall be permitted to have one exit.
- ~~7.~~ ~~Exits serving specific spaces or areas need not be accessed by the remainder of the story when all of the following are met:~~
- ~~7.1~~ The number of exits from the entire story complies with ~~Section 1021.2.4;~~

7.2 The access to exits from each individual space in the story complies with Section 1015.1, and

7.3 All spaces within each portion of a story shall have access to the minimum number of approved independent exits based on the occupant load of that portion of the story, but not less than two exits.

1021.2.3 (IFC [B] 1021.2.3) Single-story or multi-story dwelling units.

7. Individual single-story or multi-story dwelling units shall be permitted to have a single exit or access to a single exit from the dwelling unit provided that all of the following criteria are met:

7.1.4- The dwelling unit complies with Section 1015.4 1006.2.1 as a space with one means of egress and

7.2.2- Either the exit from the dwelling unit discharges directly to the exterior at the level of exit discharge, or the exit access outside the dwelling unit's entrance door provides access to not less than two approved independent exits.

**TABLE 1021.2(1) TABLE 1006.3.3(1) (IFC [B] TABLE 1021.2(1) TABLE 1006.3.3(1))
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES**

STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM COMMON PATH OF EGRESS EXIT ACCESS TRAVEL DISTANCE (feet)
Basement, first, second or third story <u>above grade plane</u>	R-2 ^{a, b}	4 dwelling units	125 feet
Fourth story <u>and above grade plane and higher</u>	NP	NA	NA

For SI: 1 foot = 3048 mm.

NP – Not Permitted

NA – Not Applicable

a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.

b. This table is used for Group R-2 occupancies consisting of dwelling units. For Group R-2 occupancies consisting of sleeping units, use Table 1006.3.3(2) 1021.2(2)..

**TABLE 1021.2(2) TABLE 1006.3.3(2) (IFC [B] TABLE 1021.2(2) TABLE 1006.3.3(2))
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES**

STORY	OCCUPANCY	MAXIMUM OCCUPANTS LOAD PER STORY	MAXIMUM COMMON PATH OF EGRESS EXIT ACCESS TRAVEL DISTANCE (feet)
First story <u>above or basement below grade plane</u>	A, B ^a , E F ^a , M, U, S ^a	49 occupants	75 feet
	H-2, H-3	3 occupants	25 feet
	H-4, H-5, I, R-1, R-2 ^{b, c} , R-4	10 occupants	75 feet
	S	29 occupants	100 feet
Second story <u>above grade plane</u>	B, F, M, S	29 occupants	75 feet
Third story <u>and above grade plane and higher</u>	NP	NA	NA

For SI: 1 foot = 304.8 mm.

NP – Not Permitted

NA – Not Applicable

- a. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
- b. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
- c. This table is used for Group R-2 occupancies consisting of sleeping units. For Group R-2 occupancies consisting of dwelling units, use Table 1006.3.3(1) ~~4024.2(4)~~.

4024.2.4 1006.3.3.1 (IFC [B] 4024.2.4 1006.3.3.1) Mixed occupancies. Where one exit, or exit access stairway or ramp providing access to exits at other stories, is permitted to serve individual stories, mixed occupancies shall be permitted to be served by single exits provided each individual occupancy complies with the applicable requirements of Table 1006.3.3(1) ~~4024.2(4)~~ or Table 1006.3.3(2) ~~4024.2(2)~~ for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1. In each story of a mixed occupancy building, the maximum number of occupants served by a single exit shall be such that the sum of the ratios of the calculated number of occupants of the space divided by the allowable number of occupants for each occupancy does not exceed one.

4024.2.2 1006.3.4 (IFC [B] 4024.2.2 1006.3.4) Basements. A basement provided with one exit shall not be located more than one story below grade plane.

4024.3 (IFC [B] 4024.3) Exit configuration. ~~Exits, or exit access stairways or ramps providing access to exits at other stories, shall be arranged in accordance with the provisions of Section 1015.2 through 1015.2.2. Exits shall be continuous from the point of entry into the exit to the exit discharge.~~

4024.4 1006.3.5 (IFC [B] 4024.4 1006.3.5) Vehicular ramps. Vehicular ramps shall not be considered as an exit access ramp unless pedestrian facilities are provided.

1006.3.6 (IFC [B] 1006.3.6) Helistop Platforms. Helistop landing areas located on buildings or structures shall be provided with two exits, or exit access stairways or ramps providing access to exits.

Exception: Landing platforms or roof areas for helistops that are less than 60 feet (18 288 mm) long, or less than 2,000 square feet (186 m²) in area, shall be permitted to access the second exit by a fire escape, alternating tread device or ladder leading to the story or level below.

SECTION 1007(IFC [B] 1007) **EXIT AND EXIT ACCESS DOORWAY CONFIGURATION**

4015.2 1007.1 (IFC [B] 4015.2 1007.1) General Exit or exit access doorway arrangement. ~~Exits and exit access doorways serving spaces, including individual building stories, shall be separated in accordance with the provisions of this section. Required exits shall be located in a manner that makes their availability obvious. Exits shall be unobstructed at all times. Exit and exit access doorways shall be arranged in accordance with Sections 1015.2.1 and 1015.2.2.~~

4015.2.4 1007.1.1 (IFC [B] 4015.2.4 1007.1.1) Two exits or exit access doorways. Where two exits or exit access doorways are required from any portion of the exit access, the exit doors or exit access doorways shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the story or area to be served measured in a straight line between exit doors or exit access doorways. Interlocking or scissor stairs shall be counted as one exit stairway.

Exceptions:

- 1 ~~2~~. Where a building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the exit doors or exit access doorways shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.
- 2 ~~4~~. Where interior exit stairways are interconnected by a 1-hour fire-resistance-rated corridor

conforming to the requirements of Section 1018, the required exit separation shall be measured along the shortest direct line of travel within the corridor.

1015.2.2 1007.1.2 (IFC [B] 1015.2.2 1007.1.2) Three or more exits or exit access doorways. Where access to three or more *exits* is required, at least two *exit doors* or *exit access doorways* shall be arranged in accordance with the provisions of Section 1007.1.1. Additional required exits, or access to exits shall be located a reasonable distance apart such that if one becomes involved, the others will be available.

1007.2 (IFC [B] 1007.2) Measurement. The required separation distance between exits or exit access doorways shall be measured in accordance with the following:

1. The separation distance to exit or exit access doorways shall be measured to the nearest point along the width of the doorway.
2. The separation distance to exit access stairways shall be measured to the closest riser.
3. The separation distance to exit access ramps shall be measured to the start of the ramp run.

(Renumber remaining sections.)

SECTION 1020 (IFC [B] 1020) EXITS

1020.1 (IFC [B] 1020.1) General. Exits shall comply with Sections 1020 through 1026 and the applicable requirements of Sections 1003 through 1013. An exit shall not be used for any purpose that interferes with its function as a means of egress. Once a given level of exit protection is achieved, such level of protection shall not be reduced until arrival at the exit discharge. Exits shall be continuous from the point of entry into the exit to the exit discharge.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

This proposal is a continuation of Item E5-09/10 that was approved for inclusion in the 2012 IBC. That is, the proposal intends to clarify current IBC means of egress requirements resulting in greater user friendliness and increased uniformity in the application of these important provisions.

Currently, both Sections 1015 and 1021 contain provisions for the determination of the number of exits and exit access doorways. The relationship between the two sections is not particularly obvious to many code practitioners. This proposal combines the two sections and places their various provisions in technical context. This is partially achieved through formatting. Section 1015.2 prescribes the provisions for the determination of the number of required exits or exit access to exits from any individual space. Section 1015.3 provides the provisions for the determination of the number of required exits or access to exits from stories or occupied roofs.

Recognizing the importance of tables during the design/review process, improvements were made to improve understanding and consistency. Fundamental to the proper determination of the number of required exits is the consideration of design occupant loads and occupant remoteness. Currently, only Table 1021.2(2) includes both variables (number of occupants per story and exit access travel distance). Section 1015.1 currently addresses the occupant load in Table 1015.1; however, it requires the user to determine occupant remoteness requirements at Section 1014.3 that are indicated as "common path of egress travel." For the 2012 Edition of the IBC, common path of egress travel provisions have been consolidated into a tabular format. The only remaining text of Section 1014.3 states, "The common path of egress travel shall not exceed the common path of egress travel distances in Table 1014.3," without contextual reference to Section 1015.1 that requires that two exits or exit access doorways from any space shall be provided where the common path of egress travel exceeds one of the limitations of Section 1014.3. This technical disconnect is repaired through the consolidation of Tables 1015.1 and 1014.3 in a format already contained in Table 1021.1(2). The current difference in occupant remoteness terminology (exit access travel distance vs. common path of egress travel) was resolved in favor of common path of egress travel distance.

To increase consistency in interpretations and application, the definition of "COMMON PATH OF EGRESS TRAVEL" has been modified. The proposed language emphasizes that the common path of egress travel is initially measured identically to exit access travel distance; however, technically terminates at an earlier point (that point where an occupant has separate and distinct access to two exits or exit access doorways vs. to an entrance to an exit). The somewhat vague wording in the current definition results in inconsistent applications of this important provision. It should be noted that the *NFPA 101 Handbook* states that common path of egress travel is a portion of the exit access travel distance. Many rely on that document to interpret IBC requirements. Additionally, the merging provision has been deleted. This is a moot point because once a second exit or exit access doorway (to include any point where an occupant enters an intervening room, corridor, exit access stairway or exit access ramp) is required, it must be

separated in accordance with Section 1015.2. In recent code development cycles, many definitions have been edited to more accurately describe means of egress design requirements in context with the IBC system philosophy. This is another example of more accurately describing what is intended.

The establishment of a single method and term for the determination of occupant remoteness will greatly benefit code practitioners. The resultant Table 1006.2.1 is consistent in format, terminology and application to Table 1006.3.3(2) and will result in more accurate and consistent determination of the required number of exits and access to exits.

This proposal deletes current Section 1021.2, Exception 7. This provision was new to the 2009 Edition of the IBC and, according to the proponent's reason statement, was intended to coordinate the fragmented requirements of Sections 1015 and 1021. The consolidation of the two sections eliminates the need for the provision. The exception can be considered moot because it represents an exception to a non-requirement. There is no requirement for specific spaces to be accessed by the remainder of the story. The performance nature of number of exits/exit access provisions allows each space to be designed based on its own technical merit on an individual and collective basis. The conditions of the exception simply restate fundamental means of egress provisions. Based on the stated requirements of this proposal, the deleted exception is unnecessary.

Formerly, both Sections 1015 and 1021 contained provisions for the determination of exit/exit access configuration/arrangement/separation. Inasmuch as this issue is a major means of egress design requirement, the provisions have been consolidated into a new stand-alone section, Section 1007. Additionally, separation measurement provisions have been clarified. Currently, there are no specific measurement points for the determination of exit/exit access separation. New Section 1007.2 provides guidance for measuring to doors, exit access stairways and exit access ramps. This will reduce subjectivity in the determination of exit/exit access configuration.

Numbers of exits/exit access doorways and exit/exit access doorway configuration provisions have been located in Sections 1006 and 1007 respectively. This creates a sectional sequence for occupant load based means of egress provisions. Section 1004 covers design occupant load determination. Means of egress sizing requirements based on occupant load are contained in Section 1005. Now, occupant load based numbers requirements are placed in Section 1006 with multiple exit/exit access doorway arrangement provisions following in Section 1007. This logical format should assist designers and enforcement officials alike.

It was also determined that a general exit provision addressing exit continuity is incorrectly located in current Section 1021.3. It has been properly located in Section 1020.1.

In summary, this proposal represents a continuing effort to improve means of egress provisions for the purposes of philosophical functionality, technical consistency and user friendliness. Approval of this proposal will simplify the interpretation and application of IBC means of egress provisions while maintaining the highest traditions of fire and life safety.

Cost Impact: This code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: Consolidation of information for number of exits from a space and floor (Section 1015 and 1022) reduces duplication of language and should simplify the code for the users. The understanding on the common path of travel requirements should be enhanced. In the definition for 'common path of travel', by the addition of 'exit access doorways', there is concern that where two exit access doorways are available, that this could be interpreted as ending the common path of travel. Adding back into the definition, "paths that merge are common path of travel" would address the issue. There may also be a problem with proposed travel distance measurements in new Section 1007.2.

Assembly Action:

None

Final Hearing Results

E1-12

AS

Code Change No: E2-12 Part I

Original Proposal

Section(s): IMC 306.5.1, 1107.2; (IFGC [M] 306.5.1)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee

THIS IS A 4 PART CODE CHANGE. ALL PARTS WILL BE HEARD BY THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE AS 4 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

PART I – INTERNATIONAL BUILDING CODE

Revise as follows:

CHAPTER 2 DEFINITIONS

SECTION 202 DEFINITIONS

EQUIPMENT PLATFORM. An unoccupied, elevated platform used exclusively for mechanical systems or industrial process equipment, including the associated elevated walkways, ~~stairs~~ stairways, *alternating tread devices* and ladders necessary to access the platform (see Section 505.3).

EXIT. That portion of a *means of egress* system between the *exit access* and the *exit discharge* or *public way*. Exit components include exterior exit doors at the *level of exit discharge*, *interior exit stairways*, ~~interior-exit~~ and ramps, *exit passageways*, *exterior exit stairways* and ~~exterior-exit ramps and horizontal exits~~.

EXIT ACCESS DOORWAY. A door or access point along the path of egress travel from an occupied room, area or space where the path of egress enters an intervening room, *corridor*, *exit access stair* stairway or ~~exit-access ramp~~.

FLOOR AREA, GROSS. The floor area within the inside perimeter of the *exterior walls* of the building under consideration, exclusive of vent *shafts* and *courts*, without deduction for *corridors*, *stairways*, ramps, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding *exterior walls* shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include *shafts* with no openings or interior *courts*.

FLOOR AREA, NET. The actual occupied area not including unoccupied accessory areas such as *corridors*, *stairways*, ramps, toilet rooms, mechanical rooms and closets.

SCISSOR STAIR STAIRWAY. Two interlocking *stairways* providing two separate paths of egress located within one ~~stairwell~~ exit enclosure.

STAIR STAIRWAY, SCISSOR. See “Scissor ~~stair~~ stairway.”

Revise as follows:

**CHAPTER 4
SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY**

**SECTION 403
HIGHRISE BUILDINGS**

403.5.1 Remoteness of interior exit stairways. Required *interior exit stairways* shall be separated by a distance not less than 30 feet (9144 mm) or not less than one-fourth of the length of the maximum overall diagonal dimension of the building or area to be served, whichever is less. The distance shall be measured in a straight line between the nearest points of the *interior exit stairways*. In buildings with three or more *interior exit stairways*, no fewer than two of the *interior exit stairways* shall comply with this section. Interlocking or ~~scissor stairs~~ stairways shall be counted as one *interior exit stairway*.

403.5.2 Additional exit stairway. For buildings other than Group R-2 that are more than 420 feet (128 000 mm) in *building height*, one additional *exit stairway* meeting the requirements of Sections 1009 and 1022 shall be provided in addition to the minimum number of *exits* required by Section 1021.1. The total width of any combination of remaining *exit stairways* with one *exit stairway* removed shall be not less than the total width required by Section 1005.1. ~~Scissor stairs~~ stairways shall not be considered the additional *exit stairway* required by this section.

Exception: An additional *exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.

Revise as follows:

**CHAPTER 5
GENERAL BUILDING HEIGHTS AND AREAS**

**SECTION 505
MEZZANINES AND EQUIPMENT PLATFORMS**

IBC 505.3 Equipment platforms. *Equipment platforms* in buildings shall not be considered as a portion of the floor below. Such *equipment platforms* shall not contribute to either the *building area* or the number of *stories* as regulated by Section 503.1. The area of the *equipment platform* shall not be included in determining the *fire area* in accordance with Section 903. *Equipment platforms* shall not be a part of any *mezzanine* and such platforms and the walkways, ~~stairs~~ stairways, *alternating tread devices* and ladders providing access to an *equipment platform* shall not serve as a part of the *means of egress* from the building.

Revise as follows:

**CHAPTER 7
FIRE AND SMOKE PROTECTION FEATURES**

**SECTION 707
FIRE BARRIERS**

707.6 Openings. Openings in a fire barrier shall be protected in accordance with Section 716. Openings shall be limited to a maximum aggregate width of 25 percent of the length of the wall, and the maximum area of any single opening shall not exceed 156 square feet (15 m²). Openings in enclosures for exit access stairways and ramps, interior exit stairways and ramps and exit passageways shall also comply with Sections 1022.3 and 1023.5, respectively.

Exceptions:

1. Openings shall not be limited to 156 square feet (15 m²) where adjoining floor areas are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a fire door serving enclosures for exit access stairways, ~~exit access~~ and ramps, and interior exit stairways and ~~interior exit~~ ramps.
3. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective has been tested in accordance with ASTM E 119 or UL263 and has a minimum fire-resistance rating not less than the fire-resistance rating of the wall.
4. Fire window assemblies permitted in atrium separation walls shall not be limited to a maximum aggregate width of 25 percent of the length of the wall.
5. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a fire door assembly in a fire barrier separating an enclosures for exit access stairways, ~~exit access~~ and ramps, and interior exit stairways and ~~interior exit~~ ramps from an exit passageway in accordance with Section 1022.2.1.

707.7.1 Prohibited penetrations. Penetrations into enclosures for exit access stairways, ~~exit access~~ and ramps, interior exit stairways, ~~interior exit~~ and ramps or an exit passageway shall be allowed only when permitted by Section 1009.3.1.5, 1022.5 or 1023.6, respectively.

**SECTION 713
SHAFT ENCLOSURES**

713.1 General. The provisions of this section shall apply to shafts required to protect openings and penetrations through floor/ceiling and roof/ceiling assemblies. Exit access stairways and ~~exit access~~ ramps shall be protected in accordance with the applicable provisions of Section 1009. Interior exit stairways and ~~interior exit~~ ramps shall be protected in accordance with the requirements of Section 1022.

Revise as follows:

**SECTION 716
OPENING PROTECTIVES**

**TABLE 716.5
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS**

Type of Assembly
Fire barriers having a required fireresistance rating of 1 hour: Enclosures for shafts, exit access stairways, exit access <u>and</u> ramps, interior exit stairways, interior exit <u>and</u> ramps and exit passageway walls

(Portions of table not shown remain unchanged.)

**SECTION 718
CONCEALED SPACES**

718.2.4 Stairways. Fireblocking shall be provided in concealed spaces between *stair* stringers at the top and bottom of the run. Enclosed spaces under ~~stairs~~ stairways shall also comply with Section 1009.9.3.

Revise as follows:

**CHAPTER 8
INTERIOR FINISHES**

**SECTION 803
WALL AND CEILING FINISHES**

**TABLE 803.9
INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY^k**

Group	SPRINKLERED			NONSPRINKLERED		
		Interior exit stairways, ⁷ interior exit and ramps and exit passageways ^{a, b}	Corridors and enclosure for exit access stairways and exit access ramps	Rooms and enclosed spaces ^c	Interior exit stairways, ⁷ interior exit and ramps and exit passageways ^{a, b}	Corridors and enclosure for exit access stairways and exit access ramps

- b. In other than Group I-2 occupancies in buildings less than three stories above grade plane of other than Group I-3, Class B interior finish for nonsprinklered buildings and Class C interior finish for sprinklered buildings shall be permitted in interior exit stairways and ramps.
- j. Class B materials shall be permitted as wainscoting extending not more than 48 inches above the finished floor in corridors and exit access stairways and ramps.

(Portions of table and notes not shown remain unchanged)

Revise as follows:

**CHAPTER 9
FIRE PROTECTION SYSTEMS**

**SECTION 909
SMOKE CONTROL SYSTEMS**

909.20.1 Access. Access to the ~~stair~~ stairway shall be by way of a vestibule or an open exterior balcony. The minimum dimension of the vestibule shall not be less than the required width of the *corridor* leading to the vestibule but shall not have a width of less than 44 inches (1118 mm) and shall not have a length of less than 72 inches (1829 mm) in the direction of egress travel.

909.20.4.4 Stair Stairway shaft air movement system. The ~~stair~~ stairway shaft shall be provided with a dampered relief opening and supplied with sufficient air to maintain a minimum positive pressure of 0.10 inch of water (25 Pa) in the shaft relative to the vestibule with all doors closed.

909.20.5 Stair Stairway pressurization alternative. Where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the vestibule is not required, provided that interior *exit stairways* are pressurized to a minimum of 0.10 inches of water (25 Pa) and a maximum of 0.35 inches of water (87 Pa) in the shaft relative to the building measured with all interior exit stairway doors closed under maximum anticipated conditions of stack effect and wind effect.

909.20.6 Ventilating equipment. The activation of ventilating equipment required by the alternatives in Sections 909.20.4 and 909.20.5 shall be by smoke detectors installed at each floor level at an *approved* location at the entrance to the smokeproof enclosure. When the closing device for the ~~stair~~ stairway shaft and vestibule doors is activated by smoke detection or power failure, the mechanical equipment shall activate and operate at the required performance levels. Smoke detectors shall be installed in accordance with Section 907.3.

909.20.6.2 Standby power. Mechanical vestibule and ~~stair~~ stairway shaft ventilation systems and automatic fire detection systems shall be powered by an *approved* standby power system conforming to Section 403.4.8 and Chapter 27.

Revise as follows:

CHAPTER 10 MEANS OF EGRESS

SECTION 1007 (IFC [B] 1007) ACCESSIBLE MEANS OF EGRESS

1007.7.2 (IFC [B] 1007.7.2) Outdoor facilities. Where *exit access* from the area serving outdoor facilities is essentially open to the outside, an exterior area of assisted rescue is permitted as an alternative to an *area of refuge*. Every required exterior area of assisted rescue shall have direct access to an *interior exit stairway*, exterior exit stairway, or elevator serving as an *accessible means of egress* component. The exterior area of assisted rescue shall comply with Section 1007.7.3 through 1007.7.6 and shall be provided with a two-way communication system complying with Sections 1007.8.1 and 1007.8.2.

SECTION 1008 (IFC [B] 1008) DOORS, GATES AND TURNSTILES

1008.1.4.1 (IFC [B] 1008.1.4.1) Revolving doors. Revolving doors shall comply with the following:

1. Each revolving door shall be capable of collapsing into a bookfold position with parallel egress paths providing an aggregate width of 36 inches (914 mm).
2. A revolving door shall not be located within 10 feet (3048 mm) of the foot of or top of ~~stairs~~ stairways or escalators. A dispersal area shall be provided between the ~~stairs~~ stairways or escalators and the revolving doors.
3. The revolutions per minute (rpm) for a revolving door shall not exceed those shown in Table 1008.1.4.1.
4. Each revolving door shall have a side-hinged swinging door which complies with Section 1008.1 in the same wall and within 10 feet (3048 mm) of the revolving door.
5. Revolving doors shall not be part of an *accessible route* required by Section 1007 and Chapter 11.

1008.1.9.11 (IFC [B] 1008.1.9.11) Stairway doors. Interior *stairway means of egress* doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1. *Stairway* discharge doors shall be openable from the egress side and shall only be locked from the opposite side.
2. This section shall not apply to doors arranged in accordance with Section 403.5.3.
3. In *stairways* serving not more than four stories, doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building.
4. *Stairway exit* doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single *exit stair* stairway where permitted in Section 1021.2.
5. *Stairway exit* doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the dwelling unit is from a single *exit stair* stairway where permitted in Section 1021.2.

SECTION 1009 (IFC [B] 1009) STAIRWAYS

1009.3 (IFC [B] 1009.3) Exit access stairways. Floor openings between stories created by *exit access stairways* shall be enclosed.

Exceptions:

1. In other than Group I-2 and I-3 occupancies, *exit access stairways* that serve, or atmospherically communicate between, only two stories are not required to be enclosed.
2. *Exit access stairways* serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.
3. In buildings with only Group B or M occupancies, *exit access stairway* openings are not required to be enclosed provided that the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the area of the floor opening between stories does not exceed twice the horizontal projected area of the *exit access stairway*, and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13.
4. In other than Groups B and M occupancies, *exit access stairway* openings are not required to be enclosed provided that the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the floor opening does not connect more than four stories, the area of the floor opening between stories does not exceed twice the horizontal projected area of the *exit access stairway*, and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13.
5. *Exit access stairways* within an *atrium* complying with the provisions of Section 404 are not required to be enclosed.
6. *Exit access stairways and ramps* in open parking garages that serve only the parking garage are not required to be enclosed.
7. *Exit access Stairways* serving outdoor facilities where all portions of the *means of egress* are essentially open to the outside are not required to be enclosed.
8. *Exit access stairways* serving stages, platforms and *technical production areas* in accordance with Sections 410.6.2 and 410.6.3 are not required to be enclosed.
9. *Exit access Stairways* are permitted to be open between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, *places of religious worship*, auditoriums and sports facilities.
10. In Group I-3 occupancies, *exit access stairways* constructed in accordance with Section 408.5 are not required to be enclosed.

1009.7.4 (IFC [B] 1009.7.4) Dimensional uniformity. *Stair* treads and risers shall be of uniform size and shape. The tolerance between the largest and smallest riser height or between the largest and smallest tread depth shall not exceed 3/8 inch (9.5 mm) in any *flight of stairs*. The greatest *winder* tread depth at the walkline within any *flight of stairs* shall not exceed the smallest by more than 3/8 inch (9.5 mm).

Exceptions:

1. Nonuniform riser dimensions of *aisle stairs* complying with Section 1028.11.2.
2. Consistently shaped *winders*, complying with Section 1009.7, differing from rectangular treads in the same ~~*stairway*~~ *flight of stairs*.

Where the bottom or top riser adjoins a sloping *public way*, walkway or driveway having an established grade and serving as a landing, the bottom or top riser is permitted to be reduced along the slope to less than 4 inches (102 mm) in height, with the variation in height of the bottom or top riser not to exceed one unit vertical in 12 units horizontal (8-percent slope) of ~~*stairway*~~ *stair* width. The *nosings* or leading edges of treads at such nonuniform height risers shall have a distinctive marking stripe, different from any other *nosing* marking provided on the *stair flight*. The distinctive marking stripe shall be visible in

descent of the *stair* and shall have a slip-resistant surface. Marking stripes shall have a width of at least 1 inch (25 mm) but not more than 2 inches (51 mm).

1009.9.3 (IFC [B] 1009.9.3) Enclosures under interior stairways. The walls and soffits within enclosed usable spaces under enclosed and unenclosed *stairways* shall be protected by 1-hour fire-resistance-rated construction or the *fire-resistance rating* of the *stairway* enclosure, whichever is greater. Access to the enclosed space shall not be directly from within the ~~*stair*~~ *stairway* enclosure.

Exception: Spaces under *stairways* serving and contained within a single residential dwelling unit in Group R-2 or R-3 shall be permitted to be protected on the enclosed side with 1/2-inch (12.7 mm) gypsum board.

SECTION 1010 (IFC [B] 1010) RAMPS

1010.2 (IFC [B] 1010.2) Enclosure. All *interior exit ramps* shall be enclosed in accordance with the applicable provisions of Section 1022. *Exit access ramps* shall be enclosed in accordance with the provisions of ~~Section~~ Sections 1009.2, 1009.3 and 1009.4 for enclosure of *stairways*.

SECTION 1011 (IFC [B] 1011) EXIT SIGNS

1011.4 (IFC [B] 1011.4) Raised character and Braille exit signs. A sign stating EXIT in raised characters and Braille and complying with ICC A117.1 shall be provided adjacent to each door to an *area of refuge*, an exterior area for assisted rescue, an *exit stairway*, ~~an exit~~ or ramp, an *exit passageway* and the *exit discharge*.

SECTION 1012 (IFC [B] 1012) HANDRAILS

1012.6 (IFC [B] 1012.6) Handrail extensions. *Handrails* shall return to a wall, *guard* or the walking surface or shall be continuous to the *handrail* of an adjacent ~~*stair*~~ *flight of stairs* or *ramp* run. Where *handrails* are not continuous between *flights*, the *handrails* shall extend horizontally at least 12 inches (305 mm) beyond the top riser and continue to slope for the depth of one tread beyond the bottom riser. At *ramps* where *handrails* are not continuous between runs, the *handrails* shall extend horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of *ramp* runs. The extensions of *handrails* shall be in the same direction of the ~~*stair*~~ *flights of stairs* at *stairways* and the *ramp* runs at *ramps*.

Exceptions:

1. *Handrails* within a *dwelling unit* that is not required to be *accessible* need extend only from the top riser to the bottom riser.
2. *Aisle handrails* in rooms or spaces used for assembly purposes in accordance with Section 1028.13.
3. *Handrails* for *alternating tread devices* and ship ladders are permitted to terminate at a location vertically above the top and bottom risers. *Handrails* for *alternating tread devices* and ship ladders are not required to be continuous between *flights* or to extend beyond the top or bottom risers.

SECTION 1013 (IFC [B] 1013) GUARDS

1013.2 (IFC [B] 1013.2) Where required. *Guards* shall be located along open-sided walking surfaces, including *mezzanines*, *equipment platforms*, *stairs*, *ramps* and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm)

horizontally to the edge of the open side. *Guards* shall be adequate in strength and attachment in accordance with Section 1607.8.

Exception: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of *stages* and raised *platforms*, including ~~steps~~ stairs leading up to the *stage* and raised *platforms*.
3. On raised *stage* and *platform* floor areas, such as runways, *ramps* and side *stages* used for entertainment or presentations.
4. At vertical openings in the performance area of *stages* and *platforms*.
5. At elevated walking surfaces appurtenant to *stages* and *platforms* for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating where *guards* in accordance with Section 1028.14 are permitted and provided.

SECTION 1015 (IFC [B] 1015) EXIT AND EXIT ACCESS DOORWAYS

1015.2.1 (IFC [B] 1015.2.1) Two exits or exit access doorways. Where two *exits* or *exit access doorways* are required from any portion of the *exit access*, the *exit* doors or *exit access doorways* shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between *exit* doors or *exit access doorways*. Interlocking or ~~scissor~~ stairs stairways shall be counted as one *exit stairway*.

Exceptions:

1. Where *interior exit stairways* are interconnected by a 1-hour fire-resistance-rated *corridor* conforming to the requirements of Section 1018, the required *exit* separation shall be measured along the shortest direct line of travel within the *corridor*.
2. Where a building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the *exit* doors or *exit access doorways* shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

SECTION 1019 (IFC [B] 1019) EGRESS BALCONIES

1019.2 (IFC [B] 1019.2) Wall separation. Exterior egress balconies shall be separated from the interior of the building by walls and opening protectives as required for *corridors*.

Exception: Separation is not required where the exterior egress balcony is served by at least two ~~stairs~~ stairways and a deadend travel condition does not require travel past an unprotected opening to reach a ~~stair~~ stairway.

SECTION 1021 (IFC [B] 1021) NUMBER OF EXITS AND EXIT CONFIGURATION

1021.1 (IFC [B] 1021.1.) General. Each story and occupied roof shall have the minimum number of *exits*, or access to exits, as specified in this section. The required number of *exits*, or *exit access stairways* or *ramps* providing access to exits, from any story shall be maintained until arrival at grade or a *public way*. *Exits* or access to exits from any story shall be configured in accordance with this section. Each story above the second story of a building shall have a minimum of one interior or exterior ~~exit stairway~~, or interior or exterior ~~exit ramp~~. At each story above the second story that requires a minimum of three or more *exits*, or access to *exits*, a minimum of 50 percent of the required *exits* shall be interior or exterior ~~exit stairways~~, or interior or exterior ~~exit ramps~~.

Exceptions:

1. *Interior exit stairways* and ~~*interior exit ramps*~~ are not required in *open parking garages* where the *means of egress* serves only the *open parking garage*.
2. *Interior exit stairways* and ~~*interior exit ramps*~~ are not required in outdoor facilities where all portions of the *means of egress* are essentially open to the outside.

**SECTION 1022 (IFC [B] 1022)
INTERIOR EXIT STAIRWAYS AND RAMPS**

1022.1 (IFC [B] 1022.1) General. *Interior exit stairways* and ~~*interior exit ramps*~~ serving as an *exit* component in a *means of egress* system shall comply with the requirements of this section. *Interior exit stairways* and *ramps* shall lead directly to the exterior of the building or shall be extended to the exterior of the building with an *exit passageway* conforming to the requirements of Section 1023, except as permitted in Section 1027.1. An *interior exit stairway* or *ramp* shall not be used for any purpose other than as a *means of egress*.

1022.7 (IFC [B] 1022.7) Interior exit stairway and ramp exterior walls. *Exterior walls* of the *interior exit stairway* and *ramp* shall comply with the requirements of Section 705 for exterior walls. Where nonrated walls or unprotected openings enclose the exterior of the *stairway or ramps* and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the building *exterior walls* within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a *fire-resistance rating* of not less than 1 hour. Openings within such *exterior walls* shall be protected by opening protectives having a *fire protection rating* of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the topmost landing of the *stairway, ramp* or to the roof line, whichever is lower.

1022.9 (IFC [B] 1022.9) Stairway identification signs. A sign shall be provided at each floor landing in an *interior exit stairway* and *ramp* connecting more than three stories designating the floor level, the terminus of the top and bottom of the *interior exit stairway* and *ramp* and the identification of the ~~*stair*~~ *stairway* or *ramp*. The signage shall also state the story of, and the direction to, the *exit discharge* and the availability of roof access from the *interior exit stairway* and *ramp* for the fire department. The sign shall be located 5 feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions. In addition to the *stairway* identification sign, a floor level sign in raised characters and braille complying with ICC A117.1 shall be located at each floor level landing adjacent to the door leading from the *interior exit stairway* and *ramp* into the *corridor* to identify the floor level.

**SECTION 1028 (IFC [B] 1028)
ASSEMBLY**

**TABLE 1028.6.2 (IFC [B] Table 1028.6.2)
WIDTH OF AISLES FOR SMOKE-PROTECTED ASSEMBLY**

TOTAL NUMBER OF SEATS IN THE SMOKEPROTECTED ASSEMBLY SEATING	INCHES OF CLEAR WIDTH PER SEAT SERVED			
	Stairs and aisle steps stairs with handrails within 30 inches	Stairs and aisle steps stairs without handrails within 30 inches	Passageways, doorways and Level and ramped aisles ramps not steeper than 1 in 10 in slope	Ramps Ramped aisles steeper than 1 in 10 in slope

(Portions of table not shown remain unchanged)

1028.7 (IFC [B] 1028.7) Travel distance. *Exits* and *aisles* shall be so located that the travel distance to an *exit* door shall not be greater than 200 feet (60 960 mm) measured along the line of travel in nonsprinklered buildings. Travel distance shall not be more than 250 feet (76 200 mm) in sprinklered

buildings. Where *aisles* are provided for seating, the distance shall be measured along the *aisles* and *aisle accessway* without travel over or on the seats.

Exceptions:

1. *Smoke-protected assembly seating*: The travel distance from each seat to the nearest entrance to a vomitory or concourse shall not exceed 200 feet (60 960 mm). The travel distance from the entrance to the vomitory or concourse to a ~~stair~~ stairway, *ramp* or walk on the exterior of the building shall not exceed 200 feet (60 960 mm).
2. Open-air seating: The travel distance from each seat to the building exterior shall not exceed 400 feet (122 m). The travel distance shall not be limited in facilities of Type I or II construction.

Revise as follows:

**CHAPTER 12
INTERIOR ENVIRONMENT**

**SECTION 1205
LIGHTING**

1205.4 Stairway illumination. *Stairways* within *dwelling units* and *exterior stairways* serving a *dwelling unit* shall have an illumination level on tread runs of not less than 1 foot-candle (11 lux). ~~Stairs~~ Stairways in other occupancies shall be governed by Chapter 10.

**SECTION 1207
SOUND TRANSMISSION**

1207.1 Scope. This section shall apply to common interior walls, partitions and floor/ceiling assemblies between adjacent *dwelling units* or between *dwelling units* and adjacent public areas such as halls, *corridors*, ~~stairs~~ stairways or service areas.

Revise as follows:

**CHAPTER 21
MASONRY**

**SECTION 2110
GLASS UNIT MASONRY**

2110.1.1 Limitations. Solid or hollow *approved* glass block shall not be used in fire walls, party walls, fire barriers, fire partitions or smoke barriers, or for load-bearing construction. Such blocks shall be erected with mortar and reinforcement in metal channel-type frames, structural frames, masonry or concrete recesses, embedded panel anchors as provided for both exterior and interior walls or other *approved* joint materials. Wood strip framing shall not be used in walls required to have a fire-resistance rating by other provisions of this code.

Exceptions:

1. Glass-block assemblies having a fire protection rating of not less than 3/4 hour shall be permitted as opening protectives in accordance with Section 716 in fire barriers, fire partitions and smoke barriers that have a required fire-resistance rating of 1 hour or less and do not enclose exit stairways, ~~exit and~~ ramps or exit passageways.
2. Glass-block assemblies as permitted in Section 404.6, Exception 2.

Revise as follows:

**CHAPTER 23
WOOD**

**SECTION 2308
CONVENTIONAL LIGHT-FRAMED CONSTRUCTION**

2308.12.7 Anchorage of exterior means of egress components. Exterior egress balconies, exterior exit stairways ~~or ramps~~ and similar *means of egress* components shall be positively anchored to the primary structure at not over 8 feet (2438 mm) o.c. or shall be designed for lateral forces. Such attachment shall not be accomplished by use of toenails or nails subject to withdrawal.

Revise as follows:

**CHAPTER 24
GLASS AND GLAZING**

**SECTION 2406
SAFETY GLAZING**

2406.4.6 Glazing adjacent to ~~stairs~~ stairways and ramps. Glazing where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the plane of the adjacent walking surface of stairways, landings between flights of stairs, and ramps shall be considered a hazardous location.

Exceptions:

1. The side of a stairway, landing or ramp that has a guard complying with the provisions of Sections 1013 and 1607.8, and the plane of the glass is greater than 18 inches (457 mm) from the railing.
2. Glazing 36 inches (914 mm) or more measured horizontally from the walking surface.

2406.4.7 Glazing adjacent to the bottom ~~stair~~ stairway landing. Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches (914 mm) above the landing and within 60 inches (1524 mm) horizontally of the bottom tread shall be considered a hazardous location.

Exception: Glazing that is protected by a guard complying with Sections 1013 and 1607.8 where the plane of the glass is greater than 18 inches (457 mm) from the guard.

Revise as follows:

**CHAPTER 34
EXISTING STRUCTURES**

**SECTION 3406 (IEBC [B] 405)
FIRE ESCAPES**

3406.1.3 (IEBC [B] 405.1.3) New fire escapes. New fire escapes for existing buildings shall be permitted only where exterior ~~stairs~~ stairways cannot be utilized due to lot lines limiting ~~stair~~ stairway size or due to the sidewalks, alleys or roads at grade level. New fire escapes shall not incorporate ladders or access by windows.

3406.4 (IEBC [B] 405.4) Dimensions. Stairs shall be at least 22 inches (559 mm) wide with risers not more than, and treads not less than, 8 inches (203 mm) and landings at the foot of ~~stairs~~ stairways not less than 40 inches (1016 mm) wide by 36 inches (914 mm) long, located not more than 8 inches (203 mm) below the door.

**SECTION 3411 (IEBC [B] 410)
ACCESSIBILITY FOR EXISTING BUILDINGS**

3411.8.4 (IEBC [B] 410.8.4) ~~Stairs~~ Stairways and escalators in existing buildings. In *alterations*, change of occupancy or *additions* where an escalator or ~~stair~~ stairway is added where none existed previously and major structural modifications are necessary for installation, an *accessible* route shall be provided between the levels served by the escalator or ~~stairs~~ stairways in accordance with Sections 1104.4 and 1104.5.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

The intent is for the consistent use of the defined terms for 'stair' and 'stairway' throughout the all the codes. Stair is used when talking about individual steps or stepped aisles. Stairway is used when the provisions are applicable to a series of steps, or flights and landings between stories. In addition, when terms such as 'exit access stairway' and 'exit access ramp' follow each other in a list, consistently eliminate a couple of words by saying 'exit access stairway and ramp.' When the provisions are equally appropriate for ramps and stairways, ramps is added.

Cost Impact: None

Public Hearing Results

PART I – IBC MEANS OF EGRESS

Committee Action:

Approved as Submitted

Committee Reason: The proposal revised the use of 'stair' and 'stairway' throughout the code so that the application matches the defined terms. This will clarify when requirements are intended for a change in elevation (i.e., stair) vs. a change in story (i.e., stairway). There was some concern about the style choice to say 'exit access stairway and ramp' vs. using the specific defined terms 'exit access stairways and exit access ramps'.

Assembly Action:

None

Final Hearing Results

E2-12 Part I

AS

Code Change No: E2-12 Part II

Original Proposal

Section(s): IMC 306.5.1, 1107.2; (IFGC [M] 306.5.1)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee

THIS IS A 4 PART CODE CHANGE. ALL PARTS WILL BE HEARD BY THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE AS 4 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

PART II - INTERNATIONAL MECHANICAL CODE

Revise as follows:

IMC CHAPTER 3 GENERAL REGULATIONS

IMC SECTION 306 ACCESS AND SERVICE SPACE

IMC 306.5.1 (IFGC [M] 306.5.1) Sloped roofs. Where appliances, *equipment*, fans or other components that require service are installed on a roof having a slope of three units vertical in 12 units horizontal (25-percent slope) or greater and having an edge more than 30 inches (762 mm) above grade at such edge, a level platform shall be provided on each side of the *appliance* or *equipment* to which access is required for service, repair or maintenance. The platform shall be not less than 30 inches (762 mm) in any dimension and shall be provided with guards. The guards shall extend not less than 42 inches (1067 mm) above the platform, shall be constructed so as to prevent the passage of a 21-inch diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the *International Building Code*. Access shall not require walking on roofs having a slope greater than four units vertical in 12 units horizontal (33-percent slope). Where access involves obstructions greater than 30 inches (762 mm) in height, such obstructions shall be provided with ladders installed in accordance with Section 306.5 or ~~stairs~~ stairways installed in accordance with the requirements specified in the *International Building Code* in the path of travel to and from appliances, fans or *equipment* requiring service.

IMC CHAPTER 11 REFRIGERATION

IMC SECTION 1107 REFRIGERANT PIPING

IMC 1107.2 Piping location. Refrigerant piping that crosses an open space that affords passageway in any building shall be not less than 7 feet 3 inches (2210 mm) above the floor unless the piping is located against the ceiling of such space. Refrigerant piping shall not be placed in any elevator, dumbwaiter or other shaft containing a moving object or in any shaft that has openings to living quarters or to means of egress. Refrigerant piping shall not be installed in an enclosed public stairway, ~~stair~~ stairway landing or means of egress.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC,

including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

The intent is for the consistent use of the defined terms for 'stair' and 'stairway' throughout the all the codes. Stair is used when talking about individual steps or stepped aisles. Stairway is used when the provisions are applicable to a series of steps, or flights and landings between stories. In addition, when terms such as 'exit access stairway' and 'exit access ramp' follow each other in a list, consistently eliminate a couple of words by saying 'exit access stairway and ramp.' When the provisions are equally appropriate for ramps and stairways, ramps is added.

Cost Impact: None

Public Hearing Results

PART II – IMC

Committee Action:

Approved as Submitted

Committee Reason: The proposal revised the use of 'stair' and 'stairway' throughout the code so that the application matches the defined terms. This will clarify when requirements are intended for a change in elevation (i.e., stair) vs. a change in story (i.e., stairway).

Assembly Action:

None

Final Hearing Results

E2-12 Part II

AS

Code Change No: E2-12 Part III

Original Proposal

Section(s): INTERNATIONAL FIRE CODE

IFC 508.1.5, 905.3.3, 905.4, 905.4.1, 907.2.13.2, 907.5.2.2, 1104.5, 1104.6.1, 1104.9, 1104.10, 1104.10.1, 1104.12, 1104.16, 1104.16.1, 1104.16.2, 1104.16.3, 1104.16.4, 1104.16.5, 1104.16.5.1, 1104.16.6, 1104.16.7, 1104.20, 1104.21, 1104.23, 3313.1, 5704.2.9.4, 5706.5.1.12; (IBC [F] 911.1.5, 905.3.3, 905.4, 905.4.1, 907.2.13.2, 907.5.2.2, 3311.1; IEBC [F] 1506.1)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee

THIS IS A 4 PART CODE CHANGE. ALL PARTS WILL BE HEARD BY THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE AS 4 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

PART III – INTERNATIONAL FIRE CODE

Revise as follows:

IFC CHAPTER 5 FIRE SERVICE FEATURES

IFC SECTION 508 (IBC [F] 911) FIRE COMMAND CENTER

IFC 508.1.5 (IBC [F] 911.1.5) Required features. The fire command center shall comply with NFPA 72 and shall contain the following features:

1. The emergency voice/alarm communication system control unit.
2. The fire department communications system.
3. Fire detection and alarm system annunciator.
4. Annunciator unit visually indicating the location of the elevators and whether they are operational.
5. Status indicators and controls for air distribution systems.
6. The fire-fighter's control panel required by Section 909.16 for smoke control systems installed in the building.
7. Controls for unlocking interior exit stairway doors simultaneously.
8. Sprinkler valve and waterflow detector display panels.
9. Emergency and standby power status indicators.
10. A telephone for fire department use with controlled access to the public telephone system.
11. Fire pump status indicators.
12. Schematic building plans indicating the typical floor plan and detailing the building core, *means of egress*, fire protection systems, fire-fighting equipment and fire department access and the location of *fire walls*, *fire barriers*, *fire partitions*, *smoke barriers* and smoke partitions.
13. An approved Building Information Card that contains, but is not limited to, the following information:
 - 13.1 General building information that includes: property name, address, the number of floors in the building (above and below grade), use and occupancy classification (for mixed uses, identify the different types of occupancies on each floor), estimated building population (i.e., day, night, weekend);

- 13.2 Building emergency contact information that includes: a list of the building's emergency contacts (e.g., building manager, building engineer, etc.) and their respective work phone number, cell phone number, email address;
 - 13.3 Building construction information that includes: the type of building construction (e.g., floors, walls, columns, and roof assembly);
 - 13.4 Exit access and exit stair stairway information that includes: number of exit access and exit stair stairway in building, each exit access and exit stair stairway designation and floors served, location where each exit access and exit stair stairway discharges, interior exit stairs stairways that are pressurized, exit stairs stairways provided with emergency lighting, each exit stairs stairways that allows reentry, exit stairs stairways providing roof access; elevator information that includes: number of elevator banks, elevator bank designation, elevator car numbers and respective floors that they serve, location of elevator machine rooms, location of sky lobby, location of freight elevator banks;
 - 13.5 Building services and system information that includes: location of mechanical rooms, location of building management system, location and capacity of all fuel oil tanks, location of emergency generator, location of natural gas service;
 - 13.6 Fire protection system information that includes: locations of standpipes, location of fire pump room, location of fire department connections, floors protected by automatic sprinklers, location of different types of sprinkler systems installed (e.g., dry, wet, pre-action, etc.);
 - 13.7 Hazardous material information that includes: location of hazardous material, quantity of hazardous material.
- 14. Work table.
 - 15. Generator supervision devices, manual start and transfer features.
 - 16. Public address system, where specifically required by other sections of this code.
 - 17. Elevator fire recall switch in accordance with ASME A17.1.
 - 18. Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.

IFC CHAPTER 9 FIRE PROTECTION SYSTEMS

IFC SECTION 905 STANDPIPE SYSTEMS

IFC 905.3.3 (IBC [F] 905.3.3) Covered and open mall buildings. Covered mall and open mall buildings shall be equipped throughout with a standpipe system where required by Section 905.3.1. Mall buildings not required to be equipped with a standpipe system by Section 905.3.1 shall be equipped with Class I hose connections connected to the *automatic sprinkler system* sized to deliver water at 250 gallons per minute (946.4 L/min) at the most hydraulically remote hose connection while concurrently supplying the automatic sprinkler system demand. The standpipe system shall be designed to not exceed a 50 pounds per square inch (psi) (345 kPa) residual pressure loss with a flow of 250 gallons per minute (946.4 L/min) from the fire department connection to the hydraulically most remote hose connection. Hose connections shall be provided at each of the following locations:

1. Within the mall at the entrance to each *exit* passageway or *corridor*.
2. At each floor-level landing within ~~enclosed~~ interior exit stairways opening directly on the mall.
3. At exterior public entrances to the mall of a covered mall building.
4. At public entrances at the perimeter line of an open mall building.

IFC 905.4 (IBC [F] 905.4) Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required interior exit stairway, a hose connection shall be provided for each floor level above or below grade. Hose connections shall be located at an intermediate floor level landing between floors, unless otherwise *approved* by the fire code official.

2. On each side of the wall adjacent to the *exit* opening of a *horizontal exit*.

Exception: Where floor areas adjacent to a *horizontal exit* are reachable from an interior exit stairway hose connections by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose, a hose connection shall not be required at the *horizontal exit*.

3. In every *exit* passageway, at the entrance from the *exit* passageway to other areas of a building.

Exception: Where floor areas adjacent to an *exit* passageway are reachable from an interior exit stairway hose connections by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose, a hose connection shall not be required at the entrance from the *exit* passageway to other areas of the building.

4. In covered mall buildings, adjacent to each exterior public entrance to the mall and adjacent to each entrance from an *exit* passageway or *exit* corridor to the mall. In open mall buildings, adjacent to each public entrance to the mall at the perimeter line and adjacent to each entrance from an *exit* passageway or *exit* corridor to the mall.
5. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3-percent slope), a hose connection shall be located to serve the roof or at the highest landing of a an interior exit stairway with ~~stair~~ access to the roof provided in accordance with Section 1009.16.
6. Where the most remote portion of a nonsprinklered floor or *story* is more than 150 feet (45 720 mm) from a hose connection or the most remote portion of a sprinklered floor or *story* is more than 200 feet (60 960 mm) from a hose connection, the fire code official is authorized to require that additional hose connections be provided in *approved* locations.

IFC 905.4.1 (IBC [F] 905.4.1) Protection. Risers and laterals of Class I standpipe systems not located within an enclosed interior exit stairway or ~~pressurized enclosure~~ shall be protected by a degree of *fire resistance* equal to that required for vertical enclosures in the building in which they are located.

Exception: In buildings equipped throughout with an *approved automatic sprinkler system*, laterals that are not located within an enclosed interior exit stairway or ~~pressurized enclosure~~ are not required to be enclosed within fire-resistance- rated construction.

IFC SECTION 907 (IBC [F] 907) FIRE ALARM AND DETECTION SYSTEMS

IFC 907.2.13.2 (IBC [F] 907.2.13.2) Fire department communication system. Where a wired communication system is *approved* in lieu of an emergency responder radio coverage system in accordance with Section 510 of the *International Fire Code*, the wired fire department communication system shall be designed and installed in accordance with NFPA 72 and shall operate between a fire command center complying with Section 911, elevators, elevator lobbies, emergency and standby power rooms, fire pump rooms, *areas of refuge* and inside enclosed interior exit stairways. The fire department communication device shall be provided at each floor level within the enclosed interior exit stairway.

IFC 907.5.2.2 (IBC [F] 907.5.2.2) Emergency voice/alarm communication systems. Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler waterflow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving *approved* information and directions for a general or staged evacuation in accordance with the building's fire safety and evacuation plans required by Section 404 of the *International Fire Code*. In high-rise buildings, the system shall operate on a minimum of the alarming floor, the floor above and the floor below. Speakers shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. Interior Exit stairways.

3. Each floor.
4. *Areas of refuge* as defined in Section 1002.1.

Exception: In Group I-1 and I-2 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.

IFC CHAPTER 11 CONSTRUCTION REQUIREMENTS FOR EXISTING BUILDINGS

IFC SECTION 1104 MEANS OF EGRESS FOR EXISTING BUILDINGS

IFC 1104.5 Illumination emergency power. The power supply for *means of egress* illumination shall normally be provided by the premises' electrical supply. In the event of power supply failure, illumination shall be automatically provided from an emergency system for the following occupancies where such occupancies require two or more *means of egress*:

- 1 and 2 (*No change*)
3. Group E in interior ~~stairs~~ exit access and exit stairways and ramps, *corridors*, windowless areas with student occupancy, shops and laboratories.
- 4 through 9 (*No change*)

IFC 1104.6.1 Height of guards. Guards shall form a protective barrier not less than 42 inches (1067 mm) high.

Exceptions:

1. Existing guards on the open side of ~~stairs~~ stairways shall be not less than 30 inches (760 mm) high.
2. Existing guards within *dwelling units* shall be not less than 36 inches (910 mm) high.
3. Existing guards in assembly seating areas.

IFC 1104.9 Revolving doors. Revolving doors shall comply with the following:

1. A revolving door shall not be located within 10 feet (3048 mm) of the foot or top of ~~stairs~~ stairways or escalators. A dispersal area shall be provided between the ~~stairs~~ stairways or escalators and the revolving doors.
2. The revolutions per minute for a revolving door shall not exceed those shown in Table 1104.9.
3. Each revolving door shall have a conforming side hinged swinging door in the same wall as the revolving door and within 10 feet (3048 mm).

Exceptions:

1. A revolving door is permitted to be used without an adjacent swinging door for street-floor elevator lobbies provided a stairway, escalator or door from other parts of the building does not discharge through the lobby and the lobby does not have any occupancy or use other than as a means of travel between elevators and a street.
2. Existing revolving doors where the number of revolving doors does not exceed the number of swinging doors within 20 feet (6096 mm).

IFC 1104.10 Stair dimensions for existing ~~stairs~~ stairways. Existing ~~stairs~~ stairways in buildings shall be permitted to remain if the rise does not exceed 8 1/4 inches (210 mm) and the run is not less than 9 inches (229 mm). Existing ~~stairs~~ stairways can be rebuilt.

Exception: Other ~~stairs~~ stairways *approved by the fire code official.*

IFC 1104.10.1 Dimensions for replacement ~~stairs~~ stairways. The replacement of an existing *stairway* in a structure shall not be required to comply with the new *stairway* requirements of Section 1009 where the existing space and construction will not allow a reduction in pitch or slope.

IFC 1104.12 Circular Curved stairways. Existing ~~circular stairs~~ curved stairways shall be allowed to continue in use provided the minimum depth of tread is 10 inches (254 mm) and the smallest radius shall not be less than twice the width of the *stairway*.

IFC 1104.16 Fire escape ~~stairs~~ stairways. Fire escape ~~stairs~~ stairways shall comply with Sections 1104.16.1 through 1104.16.7.

IFC 1104.16.1 Existing means of egress. Fire escape ~~stairs~~ stairways shall be permitted in existing buildings but shall not constitute more than 50 percent of the required *exit* capacity.

IFC 1104.16.2 Protection of openings. Openings within 10 feet (3048 mm) of fire escape ~~stairs~~ stairways shall be protected by opening protectives having a minimum 3/4-hour *fire protection rating*.

Exception: In buildings equipped throughout with an *approved automatic sprinkler system*, opening protection is not required.

IFC 1104.16.3 Dimensions. Fire escape ~~stairs~~ stairways shall meet the minimum width, capacity, riser height and tread depth as specified in Section 1104.10.

IFC 1104.16.4 Access. Access to a fire escape ~~stair~~ stairway from a *corridor* shall not be through an intervening room. Access to a fire escape ~~stair~~ stairway shall be from a door or window meeting the criteria of Section 1005.1. Access to a fire escape ~~stair~~ stairway shall be directly to a balcony, landing or platform. These shall be no higher than the floor or window sill level and no lower than 8 inches (203 mm) below the floor level or 18 inches (457 mm) below the window sill.

IFC 1104.16.5 Materials and strength. Components of fire escape ~~stairs~~ stairways shall be constructed of noncombustible materials. Fire escape ~~stairs~~ stairways and balconies shall support the dead load plus a live load of not less than 100 pounds per square foot (4.78 kN/m²). Fire escape ~~stairs~~ stairways and balconies shall be provided with a top and intermediate handrail on each side.

IFC 1104.16.5.1 Examination. Fire escape ~~stairs~~ stairways and balconies shall be examined for structural adequacy and safety in accordance with Section 1104.16.5 by a registered design professional or others acceptable to the *fire code official* every five years, or as required by the *fire code official*. An inspection report shall be submitted to the *fire code official* after such examination.

IFC 1104.16.6 Termination. The lowest balcony shall not be more than 18 feet (5486 mm) from the ground. Fire escape ~~stairs~~ stairways shall extend to the ground or be provided with counterbalanced ~~stairs~~ stairways reaching the ground.

Exception: For fire escape ~~stairs~~ stairways serving 10 or fewer occupants, an *approved* fire escape ladder is allowed to serve as the termination.

IFC 1104.16.7 Maintenance. Fire escapes stairways shall be kept clear and unobstructed at all times and shall be maintained in good working order.

IFC 1104.20 Stairway discharge identification. An interior *exit stairway* or *ramp* which continues below its *level of exit discharge* shall be arranged and marked to make the direction of egress to a *public way* readily identifiable.

Exception: ~~Stairs~~ Stairways that continue one-half story beyond their *levels of exit discharge* need not be provided with barriers where the *exit discharge* is obvious.

IFC 1104.21 Exterior stairway protection. Exterior ~~exit stairs~~ stairways shall be separated from the interior of the building as required in Section 1026.6. Openings shall be limited to those necessary for egress from normally occupied spaces.

Exceptions:

1. Separation from the interior of the building is not required for buildings that are two stories or less above grade where the *level of exit discharge* serving such occupancies is the first story above grade.
2. Separation from the interior of the building is not required where the exterior *stairway* is served by an exterior balcony that connects two remote exterior *stairways* or other *approved exits*, with a perimeter that is not less than 50 percent open. To be considered open, the opening shall be a minimum of 50 percent of the height of the enclosing wall, with the top of the opening not less than 7 feet (2134 mm) above the top of the balcony.
3. Separation from the interior of the building is not required for an exterior *stairway* located in a building or structure that is permitted to have unenclosed interior *stairways* in accordance with Section 1022.
4. Separation from the interior of the building is not required for exterior *stairways* connected to open ended *corridors*, provided that:
 - 4.1. The building, including *corridors* and ~~stairs~~ stairways, is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
 - 4.2. The open-ended *corridors* comply with Section 1018.
 - 4.3. The open-ended *corridors* are connected on each end to an exterior *exit stairway* complying with Section 1026.
 - 4.4. At any location in an open-ended *corridor* where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3 m²) or an exterior *stairway* shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

IFC 1104.23 Stairway floor number signs. Existing ~~stairs~~ stairways shall be marked in accordance with Section 1022.8.

**IFC CHAPTER 33
FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION**

**IFC SECTION 3313 (IBC [F] 3311; IEBC [F] 1506.1)
STANDPIPES**

IFC 3313.1 (IBC [F] 3311.1; IEBC [F] 1506.1) Where required. In buildings required to have standpipes by Section 905.3.1, no fewer than one standpipe shall be provided for use during construction. Such standpipes shall be installed when the progress of construction is not more than 40 feet (12 192 mm) in height above the lowest level of fire department vehicle access. Such standpipe shall be provided with fire department hose connections at accessible locations adjacent to usable ~~stairs~~ stairways. Such standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

**IFC CHAPTER 57
FLAMMABLE AND COMBUSTIBLE LIQUIDS**

**IFC SECTION 5704
STORAGE**

IFC 5704.2.9.4 ~~Stairs~~ Stairways, platforms and walkways. ~~Stairs~~ Stairways, platforms and walkways shall be of noncombustible construction and shall be designed and constructed in accordance with NFPA 30 and the *International Building Code*.

IFC 5706.5.1.12 Loading racks. Where provided, loading racks, ~~stairs~~ stairways or platforms shall be constructed of noncombustible materials. Buildings for pumps or for shelter of loading personnel are allowed to be part of the loading rack. Wiring and electrical equipment located within 25 feet (7620 mm) of any portion of the loading rack shall be in accordance with Section 5703.1.1.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

The intent is for the consistent use of the defined terms for ‘stair’ and ‘stairway’ throughout the all the codes. Stair is used when talking about individual steps or stepped aisles. Stairway is used when the provisions are applicable to a series of steps, or flights and landings between stories. In addition, when terms such as ‘exit access stairway’ and ‘exit access ramp’ follow each other in a list, consistently eliminate a couple of words by saying ‘exit access stairway and ramp.’ When the provisions are equally appropriate for ramps and stairways, ramps is added.

Cost Impact: None

Public Hearing Results

**PART III – IFC
Committee Action:**

Approved as Submitted

Committee Reason: The proposal revised the use of ‘stair’ and ‘stairway’ throughout the code so that the application matches how the defined terms. This will clarify when requirements are intended for a change in elevation (i.e., stair) vs. a change in story (i.e., stairway). There was a question from the committee whether in Section 508.1.5, Item 7 should include ‘exterior exit stairway’.

Assembly Action:

None

Public Comments

Public Comment:

Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee, requests Approval as Modified by this Public Comment

Modify the proposal as follows:

IFC 508.1.5 (IBC [F] 911.1.5) Required features. The fire command center shall comply with NFPA 72 and shall contain the following features:

1. through 6. *(no change)*
7. Controls for unlocking ~~interior exit~~ interior exit stairway doors simultaneously.
8. through 18. *(no change)*

(Portions of proposal not shown remain unchanged.)

Commenter’s Reason: The modification to IFC Section 508.1.5 (IBC 911.1.5) Item 7 is due to a concern brought up by one of the Means of Egress Code Development committee regarding possible fire department access requirement from exterior exit stairways when dealing with locked exit stairway doors. The proposal is to not add the words “interior exit” so that the requirement for unlocking would be the same for interior exit stairways as exterior exit stairways.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “Areas of Study”. The Area of Study for this code change and public comment is called “Unenclosed exit stairways”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/UnenclosedExitStairs.aspx>. Since its inception in April, 2005, the CTC has held twenty-four meetings – all open to the public. In addition to holding face-to-face meetings, the CTC established Study Groups where any interested party can participate in conference calls on specific subjects such as this area of study without having to attend the face-to-face meetings.

Final Hearing Results

E2-12 Part III

AMPC

Code Change No: E4-12

Original Proposal

Section(s): 202, 1026.3 (IFC [B] 1026.3)

Proponent: Gregory R. Keith, Professional heuristic Development, representing The Boeing Company (grkeith@mac.com)

Revise as follows:

SECTION 202 DEFINITIONS

EXIT ACCESS RAMP. ~~An interior ramp~~ that is not a required *interior or exterior exit ramp*.

EXIT ACCESS STAIRWAY. ~~An interior stairway~~ that is not a required *interior or exterior exit stairway*.

EXTERIOR EXIT RAMP. An exit component that serves to meet one or more means of egress design requirements, such as required number of exits or exit access travel distance, and is open to yards, courts or public ways.

EXTERIOR EXIT STAIRWAY, EXTERIOR. ~~An exit component that serves to meet one or more means of egress design requirements, such as required number of exits or exit access travel distance, and is open to that is open on at least one side, except for required structural columns, beams, handrails and guards. The adjoining open areas shall be either yards, courts or public ways. The other sides of the exterior stairway need not be open.~~

INTERIOR EXIT RAMP. An *exit* component that serves to meet one or more *means of egress* design requirements, such as required number of *exits* or *exit access* travel distance, and provides for a protected path of egress travel to the *exit discharge* or *public way*.

INTERIOR EXIT STAIRWAY. An *exit* component that serves to meet one or more *means of egress* design requirements, such as required number of *exits* or *exit access* travel distance, and provides for a protected path of egress travel to the *exit discharge* or *public way*.

RAMP. A walking surface that has a running slope steeper than one unit vertical in 20 units horizontal (5-percent slope).

STAIRWAY. One or more *flights* of *stairs*, either exterior or interior, with the necessary landings and platforms connecting them, to form a continuous and uninterrupted passage from one level to another.

~~**STAIRWAY, INTERIOR.** A stairway not meeting the definition of an exterior stairway.~~

Revise as follows:

1026.3 (IFC [B] 1026.3) Open side. *Exterior exit stairways and ramps* serving as an element of a required *means of egress* shall be open on at least one side, except for required structural columns, beams, handrails and guards. An open side shall have a minimum of 35 square feet (3.3 m²) of aggregate open area adjacent to each floor level and the level of each intermediate landing. The required open area shall be located not less than 42 inches (1067 mm) above the adjacent floor or landing level.

Reason: Several new means of egress terms were created and defined in the 2012 Edition of the International Building Code. They include, "EXIT ACCESS STAIRWAY," "EXIT ACCESS RAMP," "INTERIOR EXIT STAIRWAY" and "INTERIOR EXIT RAMP." These, and other terms, are fundamental to the design of any means of egress system. There is a precise relationship between these terms. It is proposed to modify the definition of both "EXIT ACCESS STAIRWAY" and "EXIT ACCESS RAMP" by deleting the word "interior." This is appropriate in that the exit access can be exterior to the building and changes in floor level can occur along the path of egress travel. Since an exit access stairway or ramp can be interior or exterior to the building, it is clarified that they are not exterior exit stairways or ramps as well.

Exterior exit stairways and exterior exit ramps are exit components according to the definition of "EXIT" in Section 202 and Section 1022.1. Both of these terms are currently undefined in the IBC. There is, however, a definition for "STAIRWAY, EXTERIOR." An exterior stairway is not a means of egress component, per se, in the IBC. It is proposed to replace the definition of "STAIRWAY, EXTERIOR" with a definition for "EXTERIOR EXIT STAIRWAY." The proposed definition is consistent with the current definition except for the distinction that such stairways are open to yards, courts or public ways consistent with the requirements in Section 1026.4. Additionally, Section 1026.3 has been modified to add technical language formerly contained in the definition of "STAIRWAY, EXTERIOR" as regards in impact of structural columns, beams, handrails and guards on openness determination. A companion definition for exterior exit ramps has been created which is consistent with the proposed definition of exterior exit stairway.

Lastly, it is proposed to delete the current definition of "STAIRWAY, INTERIOR." This definition is nonsensical, obsolete and out of current technical context. The current definition of "EXIT ACCESS STAIRWAY" effectively replaces this definition.

The definitions of "INTERIOR EXIT RAMP," "INTERIOR EXIT STAIRWAY," "RAMP" and "STAIRWAY" have been included for reference purposes so the relationship of the various terms can be seen.

In summary, the proposed modifications to these means of egress component definitions will provide necessary clarity for users who are designing or analyzing a means of egress system. It is imperative that IBC definitions be technically accurate and properly descriptive. Approval of this proposal will allow for more consistent interpretations and applications of important IBC means of egress provisions.

Cost Impact: None

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: There was a concern that ramps or stairways within the exit discharge would fall within the definition of exit access ramps and stairways.

Assembly Action:

None

Public Comments

Public Comment:

Gregory R. Keith, Professional heuristic Development, representing The Boeing Company, requests Approval as Modified by this Public Comment

Modify the proposal as follows:

EXIT ACCESS RAMP. A ramp within the exit access portion of the means of egress system ~~that is not a required interior or exterior exit ramp.~~

EXIT ACCESS STAIRWAY. A stairway within the exit access portion of the means of egress system ~~that is not a required interior or exterior exit stairway.~~

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: The ICC Means of Egress Code Development Committed disapproved Item E4-12 at the 2012 ICC code development hearings in Dallas, Texas. In its published reason statement, the committee noted, "There was a concern that ramps or stairways within the exit discharge would fall within the definition of exit access ramps and stairways." Based on that comment, and the fact that the concern was over current text, the proposed definitions for exit access stairways and exit access ramps have been revised to indicate that exit access stairways and ramps occur within the exit access portion of the means of egress system. Given that the formal technical relationship between exit access stairways and ramps and interior exit stairways and ramps has

been established in the 2012 Edition of the IBC, it is important that these key definitions accurately describe their role in the proper design of a means of egress system. Approval of this public comment will provide necessary clarification to these fundamental means of egress provisions.

Final Hearing Results

E4-12

AMPC

Code Change No: E5-12

Original Proposal

Section(s): 202, 909.20, 909.20.1, 909.20.2, 909.20.3.1, 909.20.3.2, 909.20.4.1, 909.20.4.4, 909.20.5, 909.20.6, 909.20.6.2, 1022.10.1, 1022.10.2 (IFC [B] 1022.10.1, 1022.10.2)

Proponent: Philip Brazil, P.E., Senior Engineer, Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development Committee

Revise as follows:

SECTION 202 DEFINITIONS

SMOKEPROOF ENCLOSURE. An *exit stairway or ramp* designed and constructed so that the movement of the products of combustion produced by a fire occurring in any part of the building into the enclosure is limited.

Revise as follows:

SECTION 909 SMOKE CONTROL SYSTEMS

909.20 Smokeproof enclosures. Where required by Section 1022.10, a *smokeproof enclosure* shall be constructed in accordance with this section. A *smokeproof enclosure* shall consist of an enclosed *interior exit stairway or ramp* that conforms to Section 1022.2 and an open exterior balcony or ventilated vestibule meeting the requirements of this section. Where access to the roof is required by the *International Fire Code*, such access shall be from the smokeproof enclosure where a smokeproof enclosure is required.

909.20.1 Access. Access to the ~~stair~~ *stairway or ramp* shall be by way of a vestibule or an open exterior balcony. The minimum dimension of the vestibule shall not be less than the required width of the *corridor* leading to the vestibule but shall not have a width of less than 44 inches (1118 mm) and shall not have a length of less than 72 inches (1829 mm) in the direction of egress travel.

909.20.2 Construction. The smokeproof enclosure shall be separated from the remainder of the building by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. Openings are not permitted other than the required *means of egress* doors. The vestibule shall be separated from the *stairway or ramp* by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The open exterior balcony shall be constructed in accordance with the *fire-resistance rating* requirements for floor assemblies.

909.20.3.1 Balcony doors. Where access to the *stairway or ramp* is by way of an open exterior balcony, the door assembly into the enclosure shall be a *fire door assembly* in accordance with Section 716.5.

909.20.3.2 Vestibule doors. Where access to the *stairway or ramp* is by way of a vestibule, the door assembly into the vestibule shall be a *fire door assembly* complying with Section 715.4. The door assembly from the vestibule to the *stairway or ramp* shall have not less than a 20-minute *fire protection rating* complying with Section 716.5.

909.20.4.1 Vestibule doors. The door assembly from the *building* into the vestibule shall be a *fire door assembly* complying with Section 716.5.3. The door assembly from the vestibule to the *stairway or ramp* shall have not less than a 20-minute *fire protection rating* and meet the requirements for a smoke door assembly in accordance with Section 716.5.3. The door shall be installed in accordance with NFPA 105.

909.20.4.4 Stair shaft air movement system. The ~~stair~~ *stairway or ramp* shaft shall be provided with a dampered relief opening and supplied with sufficient air to maintain a minimum positive pressure of 0.10 inch of water (25 Pa) in the shaft relative to the vestibule with all doors closed.

909.20.5 Stair Stairway and ramp pressurization alternative. Where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the vestibule is not required, provided that ~~each~~ *each* interior *exit stairway or ramp* ~~are~~ *is* pressurized to a minimum of 0.10 inches of water (25 Pa) and a maximum of 0.35 inches of water (87 Pa) in the shaft relative to the building measured with all *stairway and ramp* doors closed under maximum anticipated conditions of stack effect and wind effect.

909.20.6 Ventilating equipment. The activation of ventilating equipment required by the alternatives in Sections 909.20.4 and 909.20.5 shall be by smoke detectors installed at each floor level at an *approved* location at the entrance to the smokeproof enclosure. When the closing device for the ~~stair~~ *stairway and ramp* shaft and vestibule doors is activated by smoke detection or power failure, the mechanical equipment shall activate and operate at the required performance levels. Smoke detectors shall be installed in accordance with Section 907.3.

909.20.6.2 Standby power. Mechanical vestibule and ~~stair~~ *stairway and ramp* shaft ventilation systems and automatic fire detection systems shall be powered by an *approved* standby power system conforming to Section 403.4.8 and Chapter 27.

Revise as follows:

SECTION 1022 (IFC [B] 1022) INTERIOR EXIT STAIRWAYS AND RAMPS

1022.10.1 (IFC [B] 1022.10.1) Termination and extension. A *smokeproof enclosure* or pressurized *stairway or ramp* shall terminate at an *exit discharge* or a *public way*. The *smokeproof enclosure* or pressurized *stairway or ramp* shall be permitted to be extended by an *exit passageway* in accordance with Section 1022.3. The *exit passageway* shall be without openings other than the *fire door assembly* required by Section 1022.3.1 and those necessary for egress from the *exit passageway*. The *exit passageway* shall be separated from the remainder of the building by 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

Exceptions:

1. Openings in the *exit passageway* serving a *smokeproof enclosure* are permitted where the *exit passageway* is protected and pressurized in the same manner as the *smokeproof enclosure*, and openings are protected as required for access from other floors.
2. Openings in the *exit passageway* serving a pressurized *stairway or ramp* are permitted where the *exit passageway* is protected and pressurized in the same manner as the pressurized *stairway or ramp*.
3. The *fire barrier* separating the smokeproof enclosure or pressurized *stairway or ramp* from the *exit passageway* is not required, provided the *exit passageway* is protected and pressurized in the same manner as the *smokeproof enclosure* or pressurized *stairway or ramp*.
4. A *smokeproof enclosure* or pressurized *stairway or ramp* shall be permitted to egress through areas on the *level of exit discharge* or vestibules as permitted by Section 1027.

1022.10.2 (IFC [B] 1022.10.2) Enclosure access. Access to the *stairway or ramp* within a *smokeproof enclosure* shall be by way of a vestibule or an open exterior balcony.

Exception: Access is not required by way of a vestibule or exterior balcony for *stairways and ramps* using the pressurization alternative complying with Section 909.20.5.

Reason: The addition of “ramp(s)” is for consistency with the language in Section 1022.10 (smokeproof enclosures and pressurized stairways and ramps), which requires interior exit stairways and ramps to be smokeproof enclosures or pressurized stairways or ramps in accordance with Section 909.20 where required by Section 403.5.4 (smokeproof enclosures in high-rise buildings) or 405.7.2 (smokeproof enclosures in underground buildings). In Sections 909.20.1, 909.20.4.4, 909.20.6 and 909.20.6.2, the change from “stair” to “stairway” is for consistency with the use of “stairway” elsewhere in Section 909.20. Based on our analysis of the 2012 IBC, all instances of “exit stairway” in provisions for or related to smokeproof enclosures, where the addition of “ramp” is warranted, are included in this proposal.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: With the idea that ramps should be an option for any location where the code allows stairways, “and ramps” should be added throughout the provisions for smokeproof enclosures.

Assembly Action:

None

Final Hearing Results

E5-12

AS

Code Change No: E7-12

Original Proposal

Section(s): 202, 403.5.1, 505.2.3, 707.3.3, 707.5.1, 707.7.1, 711.4, 712.1.8, 712.1.12, 713.1, 1001.2, 1007.2, 1007.3, 1007.6.2, 1009.2-1009.3.1.8, 1010.2, 1011.1, 1015.1, 1015.2, 1015.2.1, 1015.2.1.1(new), 1015.2.2, 1015.2.3(new), 1015.2.3.1(new), 1016.3, 1018(new), 1026.6, 1027.1, 1028.5 (IFC [B] 1001.2, 1007.2, 1007.3, 1007.6.2, 1009.2-1009.3.1.8, 1010.2, 1011.1, 1015.1, 1015.2, 1015.2.1, 1015.2.1.1(new), 1015.2.2, 1015.2.3(new), 1015.2.3.1(new), 1016.3, 1018(new), 1026.6, 1027.1, 1028.5)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee

Revise as follows:

SECTION 202 DEFINITIONS

EXIT ACCESS RAMP. An ~~interior~~ ramp that is not a required ~~interior~~ exit ramp.

EXIT ACCESS STAIRWAY. An ~~interior~~ stairway that is not a required ~~interior~~ exit stairway.

Revise as follows:

SECTION 1001 ADMINISTRATION

1001.2 (IFC [B] 1001.2) Minimum requirements. It shall be unlawful to alter a building or structure in a manner that will reduce the number of exits or the capacity of the means of egress to less than required by this code. Means of egress shall be designed to be continuous and unobstructed.

SECTION 1007 (IFC [B] 1007) ACCESSIBLE MEANS OF EGRESS

1007.2 (IFC [B] 1007.2) Continuity and components. Each required *accessible means of egress* shall be continuous to a *public way* and shall consist of one or more of the following components:

1. *Accessible* routes complying with Section 1104.
2. *Interior exit stairways* complying with Sections 1007.3 and 1022.
3. ~~Interior exit access stairways~~ complying with Sections 1007.3 and ~~4009.3~~ 1018.2 or 1018.3.
4. Exterior *exit stairways* complying with Sections 1007.3 and 1026 and serving levels other than the *level of exit discharge*.
5. Elevators complying with Section 1007.4.
6. Platform lifts complying with Section 1007.5.
7. *Horizontal exits* complying with Section 1025.
8. *Ramps* complying with Section 1010.
9. *Areas of refuge* complying with Section 1007.6.
10. Exterior area for assisted rescue complying with Section 1007.7.

1007.3 (IFC [B] 1007.3) Stairways. In order to be considered part of an *accessible means of egress*, a *stairway* between stories shall have a clear width of 48 inches (1219 mm) minimum between *handrails* and shall either incorporate an *area of refuge* within an enlarged floor-level landing or shall be accessed

from either an *area of refuge* complying with Section 1007.6 or a *horizontal exit*. *Exit access stairways* that connect levels in the same story are not permitted as part of an *accessible means of egress*.

Exceptions:

1. Exit access stairways providing means of egress from mezzanines are permitted as part of an accessible means of egress.
24. The clear width of 48 inches (1219 mm) between *handrails* is not required in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
32. *Areas of refuge* are not required at *stairways* in buildings equipped throughout by an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
43. The clear width of 48 inches (1219 mm) between *handrails* is not required for *stairways* accessed from a *horizontal exit*.
54. *Areas of refuge* are not required at *stairways* serving *open parking garages*.
65. *Areas of refuge* are not required for smoke protected seating areas complying with Section 1028.6.2.
76. The *areas of refuge* are not required in Group R-2 occupancies.

1007.6.2 (IFC [B] 1007.6.2) Separation. Each *area of refuge* shall be separated from the remainder of the story by a *smoke barrier* complying with Section 709 or a *horizontal exit* complying with Section 1025. Each *area of refuge* shall be designed to minimize the intrusion of smoke.

Exception: *Areas of refuge* located within an enclosure for ~~exit access stairways~~ or *interior exit stairways*.

SECTION 1009 (IFC [B] 1009) STAIRWAYS

1009.1 (IFC [B] 1009.1) General. Stairways serving occupied portions of a building shall comply with the requirements of this section.

~~**1009.2 (IFC [B] 1009.2) Interior exit stairways.** Interior exit stairways shall lead directly to the exterior of the building or shall be extended to the exterior of the building with an exit passageway conforming to the requirements of Section 1023, except as permitted in Section 1027.1.~~

~~**1009.2.1 (IFC [B] 1009.2.1) Where required.** Interior exit stairways shall be included, as necessary, to meet one or more means of egress design requirements, such as required number of exits or exit access travel distance.~~

~~**1009.2.2 (IFC [B] 1009.2.2) Enclosure.** All interior exit stairways shall be enclosed in accordance with the provisions of Section 1022.~~

~~**1009.3 (IFC [B] 1009.3) Exit access stairways.**—Relocated to 1018.3~~

~~**1009.3.1 (IFC [B] 1009.3.1) Construction.** Where required, enclosures for exit access stairways shall be constructed in accordance with this section. Exit access stairway enclosures shall be constructed as fire barriers in accordance with Section 707 or horizontal assemblies in accordance with Section 711, or both.~~

~~**1009.3.1.1 (IFC [B] 1009.3.1.1) Materials.** Exit access stairway enclosures shall be of materials permitted by the building type of construction.~~

~~**1009.3.1.2 (IFC [B] 1009.3.1.2) Fire resistance rating.** Exit access stairway enclosures shall have a fire resistance rating of not less than 2 hours where connecting four stories or more, and not less than 1 hour where connecting less than four stories. The number of stories connected by the exit access stairway enclosures shall include any basements, but not any mezzanines. Exit access stairway enclosures shall~~

have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours.

~~1009.3.1.3 (IFC [B] 1009.3.1.3) Continuity.~~ Exit access stairway enclosures shall have continuity in accordance with Section 707.5 for fire barriers or Section 711.4 for horizontal assemblies as applicable.

~~1009.3.1.4 (IFC [B] 1009.3.1.4) Openings.~~ Openings in an exit access stairway enclosure shall be protected in accordance with Section 716 as required for fire barriers. Doors shall be self- or automatic-closing by smoke detection in accordance with Section 716.5.9.3.

~~1009.3.1.4.1 (IFC [B] 1009.3.1.4.1) Prohibited openings.~~ Openings other than those necessary for the purpose of the exit access stairway enclosure shall not be permitted in exit access stairway enclosures.

~~1009.3.1.5 (IFC [B] 1009.3.1.5) Penetrations.~~ Penetrations in an exit access stairway enclosure shall be protected in accordance with Section 714 as required for fire barriers.

~~1009.3.1.5.1 (IFC [B] 1009.3.1.5.1) Prohibited penetrations.~~ Penetrations other than those necessary for the purpose of the exit access stairway enclosure shall not be permitted in exit access stairway enclosures.

~~1009.3.1.6 (IFC [B] 1009.3.1.6) Joints.~~ Joints in an exit access stairway enclosure shall comply with Section 715.

~~1009.3.1.7 (IFC [B] 1009.3.1.7) Ducts and air transfer openings.~~ Penetrations of an exit access stairway enclosure by ducts and air transfer openings shall comply with Section 717.

~~1009.3.1.8 (IFC [B] 1009.3.1.8) Exterior walls.~~ Where exterior walls serve as a part of an exit access stairway enclosure, such walls shall comply with the requirements of Section 705 for exterior walls and the fire-resistance-rated enclosure requirements shall not apply.

(Renumber remaining sections)

SECTION 1010 RAMPS

~~1010.2 (IFC [B] 1010.2) Enclosure.~~ All interior exit ramps shall be enclosed in accordance with the applicable provisions of Section 1022. Exit access ramps shall be enclosed in accordance with the provisions of Section 1009.3 for enclosure of stairways.

(Renumber remaining sections)

SECTION 1011 (IFC [B] 1011) EXIT SIGNS

1011.1 (IFC [B] 1011.1) Where required. *Exits and exit access doors* shall be marked by an *approved exit* sign readily visible from any direction of egress travel. The path of egress travel to *exits* and within *exits* shall be marked by readily visible *exit* signs to clearly indicate the direction of egress travel in cases where the *exit* or the path of egress travel is not immediately visible to the occupants. Intervening *means of egress* doors within *exits* shall be marked by *exit* signs. *Exit* sign placement shall be such that no point in an *exit access corridor* or *exit passageway* is more than 100 feet (30 480 mm) or the *listed* viewing distance for the sign, whichever is less, from the nearest visible *exit* sign.

Exceptions:

1. *Exit* signs are not required in rooms or areas that require only one *exit* or *exit access*.
2. Main exterior *exit* doors or gates that are obviously and clearly identifiable as *exits* need not have *exit* signs where *approved* by the *building official*.

3. *Exit* signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3.
4. *Exit* signs are not required in dayrooms, sleeping rooms or dormitories in occupancies in Group I-3.
5. In occupancies in Groups A-4 and A-5, *exit* signs are not required on the seating side of vomitories or openings into seating areas where *exit* signs are provided in the concourse that are readily apparent from the vomitories. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.

SECTION 1015 (IFC [B] 1015) EXITS AND EXIT ACCESS DOORWAYS

1015.1 (IFC [B] 1015.1) Exits or exit access doorways from spaces. Two exits or exit access doorways from any space including mezzanines shall be provided where one of the following conditions exists:

1. The *occupant load* of the space exceeds one of the values in Table 1015.1.

Exceptions:

1. In Group R-2 and R-3 occupancies, one *means of egress* is permitted within and from individual dwelling units with a maximum *occupant load* of 20 where the dwelling unit is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Care suites in Group I-2 occupancies complying with Section 407.4.3.
2. The *common path of egress travel* exceeds one of the limitations of Section 1014.3.
3. Where required by Section 1015.3, 1015.4, 1015.5, or 1015.6.

Where a building contains mixed occupancies, each individual occupancy shall comply with the applicable requirements for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1.

1015.2 (IFC [B] 1015.2) Exit or exit access doorway arrangement. Required exits shall be located in a manner that makes their availability obvious. ~~Exits shall be unobstructed at all times. Exits, and exit access doorways, and exit access stairways and ramps~~ shall be arranged in accordance with Sections 1015.2.1 and 1015.2.2.

1015.2.1 (IFC [B] 1015.2.1) Two exits or exit access doorways. Where two *exits* or *exit access doorways* and exit access stairways and ramps are required from any portion of the *exit access*, the ~~exit doors~~ or *exit access doorways* and exit access stairways and ramps shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between ~~exit doors~~ or *exit access doorways* and exit access stairways and ramps. Interlocking or *scissor stairs* shall be counted as one *exit stairway*.

Exceptions:

1. Where interior exit stairways are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1018, the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. Where a building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the ~~exit doors~~ or *exit access doorways* and exit access stairways and ramps shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

1015.2.1.1 (IFC [B] 1015.2.1.1) Measurement point. The separation distance required in Section 1015.2.1 shall be measured in accordance with the following:

1. The separation distance to exit or exit access doorways shall be measured to any point along the width of the doorway.
2. The separation distance to exit access stairways shall be measured to the closest riser.
3. The separation distance to exit access ramps shall be measured to the start of the ramp run.

1015.2.2 (IFC [B] 1015.2.2) Three or more exits or exit access doorways. Where access to three or more exits is required, at least two ~~exit doors or exit access doorways~~ exit access doorways shall be arranged in accordance with the provisions of Section 1015.2.1.

1015.2.3 (IFC [B] 1015.2.3) Remoteness of exit access stairways or ramps. Where two exit access stairways or ramps provide the required means of egress to exits at another story, the required separation distance shall be maintained for all portions of such exit access stairways or ramps.

1015.2.3.1 (IFC [B] 1015.2.3.1) Three or more exit access stairways or ramps. Where more than two exit access stairways or ramps provide the required means of egress, at least two shall be arranged in accordance with 1015.2.3.

SECTION 1016 (IFC [B] 1016) EXIT ACCESS TRAVEL DISTANCE

1016.3 (IFC [B] 1016.3) Measurement. Exit access travel distance shall be measured from the most remote point within a story along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an exit.

Exceptions Exception:

- ~~1. In open parking garages, exit access travel distance is permitted to be measured to the closest riser of an exit access stairway or the closest slope of an exit access ramp.~~
- ~~2. In outdoor facilities with open exit access components, exit access travel distance is permitted to be measured to the closest riser of an exit access stairway or the closest slope of an exit access ramp.~~

SECTION 1018 (IFC [B] 1018) EXIT ACCESS STAIRWAYS AND RAMPS

1018.1 (IFC [B] 1018.1) General. Exit access stairways and ramps serving as an exit access component in a means of egress system shall comply with the requirements of this section. The number of stories connected by exit access stairways and ramps shall include basements, but not mezzanines.

1018.2 (IFC [B] 1018.2) All occupancies. Exit access stairways and ramps that serve floor levels within a single story are not required to be enclosed.

1018.3 (IFC [B] 1018.3) ~~1009.3 (IFC [B] 1009.3) Occupancies other than Group I-2 and I-3. Exit access stairways.~~ Floor openings between stories created by exit access stairways shall be enclosed. In other than Group I-2 and I-3 occupancies, floor openings containing exit access stairways or ramps that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

Exceptions:

- ~~1. In other than Group I-2 and I-3 occupancies, Exit access stairways and ramps that serve, or atmospherically communicate between, only two stories, are not required to be enclosed.~~

- Such interconnected stories shall not be open to other stories.
2. In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within a single residential an individual dwelling unit or sleeping unit or live/work unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.
 3. In buildings with only Group B or M occupancies, Exit access stairways and ramps in openings are not required to be enclosed provided that the buildings is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the floor vertical opening between stories does not exceed twice the horizontal projected area of the exit access stairway or ramp, and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Groups B and M occupancies, this provision is limited to openings that do not connect more than four stories.
 4. In other than Groups B and M occupancies, exit access stairway openings are not required to be enclosed provided that the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the floor opening does not connect more than four stories, the area of the floor opening between stories does not exceed twice the horizontal projected area of the exit access stairway, and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13.
 45. Exit access stairways and ramps within an atrium complying with the provisions of Section 404 are not required to be enclosed.
 56. Exit access stairways and ramps in open parking garages that serve only the parking garage are not required to be enclosed.
 67. Exit access stairways and ramps serving outdoor facilities where all portions of the means of egress are essentially open to the outside are not required to be enclosed open-air seating complying with the exit access travel distance requirements of Section 1028.7.
 8. Exit access stairways serving stages, platforms and technical production areas in accordance with Sections 410.6.2 and 410.6.3 are not required to be enclosed.
 79. Exit access stairways and ramps serving are permitted to be open between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities.
 10. In Group I-3 occupancies, exit access stairways constructed in accordance with Section 408.5 are not required to be enclosed.

1018.4 (IFC [B] 1018.4) Group I-2 and I-3 occupancies. In Group I-2 and I-3 occupancies, floor openings between stories containing exit access stairways or ramps are required to be enclosed with a shaft enclosure constructed in accordance with Section 713.

Exception: In Group I-3 occupancies, exit access stairways or ramps constructed in accordance with Section 408 are not required to be enclosed.

(Renumber Subsequent Sections)

SECTION 1026 (IFC [B] 1026) EXTERIOR EXIT STAIRWAYS AND RAMPS

1026.6 (IFC [B] 1026.6) Exterior stairway and ramp protection. *Exterior exit stairways and ramps* shall be separated from the interior of the building as required in Section 1022.2. Openings shall be limited to those necessary for egress from normally occupied spaces.

Exceptions:

1. Separation from the interior of the building is not required for occupancies, other than those in Group R-1 or R-2, in buildings that are no more than two stories above *grade plane* where a *level of exit discharge* serving such occupancies is the first story above *grade plane*.
2. Separation from the interior of the building is not required where the *exterior exit stairway* or *ramp* is served by an exterior *ramp* or balcony that connects two remote *exterior stairways* or

- other *approved exits* with a perimeter that is not less than 50 percent open. To be considered open, the opening shall be a minimum of 50 percent of the height of the enclosing wall, with the top of the openings no less than 7 feet (2134 mm) above the top of the balcony.
3. Separation from the interior of the building is not required for an *exterior stairway or ramp* located in a building or structure that is permitted to have unenclosed *exit access stairways* in accordance with Section 1009.3.
 4. Separation from the interior of the building is not required for *exterior exit stairways* or *ramps* connected to open-ended *corridors*, provided that Items 3.1 4.4 through 3.5 4.5 are met:
 - 4.13.1. The building, including *corridors*, *stairways* or *ramps*, shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
 - 4.23.2. The open-ended *corridors* comply with Section 1018.
 - 4.33.3. The open-ended *corridors* are connected on each end to an *exterior exit stairway* or *ramp* complying with Section 1026.
 - 4.43.4. The *exterior walls* and openings adjacent to the *exterior exit stairway* or *ramp* comply with Section 1022.7.
 - 4.53.5. At any location in an open-ended *corridor* where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 m²) or an *exterior stairway* or *ramp* shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

SECTION 1027 (IFC [B] 1027) EXIT DISCHARGE

1027.1 (IFC [B] 1027.1) General. *Exits* shall discharge directly to the exterior of the building. The *exit discharge* shall be at grade or shall provide direct access to grade. The *exit discharge* shall not reenter a building. The combined use of Exceptions 1 and 2 below shall not exceed 50 percent of the number and capacity of the required exits.

Exceptions:

1. A maximum of 50 percent of the number and capacity of *interior exit stairways* and *ramps* is permitted to egress through areas on the *level of exit discharge* provided all of the following are met:
 - 1.1 ~~Such Discharge of interior exit stairways and ramps shall be provided with enclosures~~ egress to a free and unobstructed path of travel to an exterior *exit door* and such *exit* is readily visible and identifiable from the point of termination of the enclosure.
 - 1.2 The entire area of the *level of exit discharge* is separated from areas below by construction conforming to the fire-resistance rating for the enclosure.
 - 1.3 The egress path from the *interior exit stairway* and *ramp* on the *level of exit discharge* is protected throughout by an *approved automatic sprinkler system*. All portions of the *level of exit discharge* with access to the egress path shall either be protected throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of *interior exit stairways* or *ramps*.
 - 1.4 Where a required interior exit stairway or ramp and an exit access stairway or ramp serve the same floor level and terminate at the same level of exit discharge, the termination of the exit access stairway or ramp and the exit discharge door of the interior exit stairway or ramp shall be separated by a distance of not less than 30 feet (9144 mm) or not less than one-fourth the length of the maximum overall diagonal dimension of the building, whichever is less. The distance shall be measured in a straight line between the exit discharge door from the interior exit stairway or ramp and the last tread of the exit access stairway or termination of slope of the exit access ramp.
2. A maximum of 50 percent of the number and capacity of the *interior exit stairways* and *ramps* is permitted to egress through a vestibule provided all of the following are met:

- 2.1 The entire area of the vestibule is separated from areas below by construction conforming to the *fire-resistance rating* ~~for~~ of the interior exit stairway or ramp enclosure.
- 2.2 The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
- 2.3 The area is separated from the remainder of the *level of exit discharge* by construction providing protection at least the equivalent of *approved* wired glass in steel frames.
- 2.4 The area is used only for *means of egress* and *exits* directly to the outside.
3. *Horizontal exits* complying with Section 1025 shall not be required to discharge directly to the exterior of the building.

SECTION 1028 (IFC [B] 1028) ASSEMBLY

1028.5 (IFC [B] 1028.5) Interior balcony and gallery means of egress. For balconies, galleries or press boxes having a seating capacity of 50 or more located in a building, room or space used for assembly purposes, at least two means of egress shall be provided, with one from each side of every balcony, gallery or press box ~~and at least one leading directly to an exit.~~

Revise as follows:

SECTION 403 HIGH-RISE BUILDINGS

403.5.1 Remoteness of interior exit stairways. Required *interior exit stairways* shall be separated by a distance not less than 30 feet (9144 mm) or not less than one-fourth of the length of the maximum overall diagonal dimension of the building or area to be served, whichever is less. The distance shall be measured in a straight line between the nearest points of the enclosure surrounding the interior exit stairways. In buildings with three or more *interior exit stairways*, no fewer than two of the *interior exit stairways* shall comply with this section. Interlocking or *scissor stairs* shall be counted as one *interior exit stairway*.

Revise as follows:

SECTION 505 MEZZANINES AND EQUIPMENT PLATFORMS

505.2.3 Openness. A *mezzanine* shall be open and unobstructed to the room in which such *mezzanine* is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

Exceptions:

1. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the *occupant load* of the aggregate area of the enclosed space is not greater than 10.
2. A *mezzanine* having two or more ~~means of egress exits or access to exits~~ is not required to be open to the room in which the *mezzanine* is located ~~if at least one of the means of egress provides direct access to an exit from the mezzanine level.~~
3. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the *mezzanine* area.
4. In industrial facilities, *mezzanines* used for control equipment are permitted to be glazed on all sides.
5. In occupancies other than Groups H and I, that are no more than two *stories* above *grade plane* and equipped throughout with an *automatic sprinkler system* in accordance with

Section 903.3.1.1, a *mezzanine* having two or more *means of egress* shall not be required to be open to the room in which the *mezzanine* is located.

Revise as follows:

SECTION 707 FIRE BARRIERS

707.3.3 Enclosures for exit access stairways. The *fire-resistance rating* of the fire barrier separating building areas from an exit access stairway or ramp shall comply with Section ~~4009.3.1.2~~ 713.4.

707.5.1 Supporting construction. The supporting construction for a *fire barrier* shall be protected to afford the required *fire-resistance rating* of the *fire barrier* supported. Hollow vertical spaces within a *fire barrier* shall be fireblocked in accordance with Section 718.2 at every floor level.

Exceptions:

1. The maximum required *fire-resistance rating* for assemblies supporting *fire barriers* separating tank storage as provided for in Section 415.8.2.1 shall be 2 hours, but not less than required by Table 601 for the building construction type.
2. Shaft enclosures shall be permitted to terminate at a top enclosure complying with Section 713.12.
3. Supporting construction for 1-hour *fire barriers* required by Table 509 in buildings of Type IIB, IIIB and VB construction is not required to be fire-resistance rated unless required by other sections of this code.
4. Interior exit stairway and ramp enclosures required by Section 1022.2 and exit access stairway and ramp enclosures required by ~~Section 4009.3~~ Sections 1018.3 and 1018.4 shall be permitted to terminate at a top enclosure complying with Section 713.12.

707.7.1 Prohibited penetrations. Penetrations into enclosures for ~~exit access stairways, exit access ramps, interior exit stairways, interior exit and ramps~~ or an exit passageway shall be allowed only ~~when~~ where permitted by Section ~~4009.3.1.5, 1022.5 or 1023.6, respectively.~~

SECTION 711 HORIZONTAL ASSEMBLIES

711.4 Continuity. Assemblies shall be continuous without openings, penetrations or joints except as permitted by this section and Sections 712.1, 714.4, 715, ~~4009.3~~ 1018 and 1022.1. Skylights and other penetrations through a fire-resistance-rated roof deck or slab are permitted to be unprotected, provided that the structural integrity of the fire-resistance-rated roof assembly is maintained. Unprotected skylights shall not be permitted in roof assemblies required to be fire-resistance rated in accordance with Section 705.8.6. The supporting construction shall be protected to afford the required *fire-resistance rating* of the *horizontal assembly* supported.

Exception: In buildings of Type IIB, IIIB or VB construction, the construction supporting the *horizontal assembly* is not required to be fire-resistance-rated at the following:

1. Horizontal assemblies at the separations of incidental uses as specified by Table 509, provided the required *fire-resistance rating* does not exceed 1 hour.
2. Horizontal assemblies at the separations of *dwelling units* and *sleeping units* as required by Section 420.3.
3. Horizontal assemblies at *smoke barriers* constructed in accordance with Section 709.

SECTION 712 VERTICAL OPENINGS

712.1 General. The provisions of this section shall apply to the vertical opening applications listed in Sections 712.1.1 through 712.1.18.

712.1.1 Shaft enclosures. Vertical openings contained entirely within a shaft enclosure complying with Section 713 shall be permitted.

712.1.8 Two story openings. In other than Groups I-2 and I-3, a floor opening that is not used as one of the application listed in this section shall be permitted if it complies with all the items below.

1. Does not connect more than two stories.
- ~~2. Does not contain a stairway or ramp required by Chapter 10.~~
- ~~23.~~ Does not penetrate a horizontal assembly that separates fire areas or smoke barriers that separate smoke compartments.
- ~~34.~~ Is not concealed within the construction of a wall or a floor/ceiling assembly.
- ~~45.~~ Is not open to a corridor in Group I and R occupancies.
- ~~56.~~ Is not open to a corridor on nonsprinklered floors.
- ~~67.~~ Is separated from floor openings and air transfer openings serving other floors by construction conforming to required shaft enclosures.

712.1.12 Unenclosed Exit access stairways and ramps. Vertical floor openings ~~created by unenclosed containing exit access stairways~~ or ramps in accordance with ~~Sections 1009.2 and 1009.3~~ Section 1018 shall be permitted.

SECTION 713 SHAFT ENCLOSURES

713.1 General. The provisions of this section shall apply to shafts required to protect openings and penetrations through floor/ceiling and roof/ceiling assemblies. ~~Exit access stairways and exit access ramps shall be protected in accordance with the applicable provisions of Section 1009.~~ Interior exit stairways and ~~interior exit~~ ramps shall be protected in accordance with the requirements of Section 1022.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

The most substantial part of this change is the relocation of exit access specific stair requirements from the general stair section 1009 to a stand alone section 1018. Another substantial purpose of this code change proposal is for coordination between the open stairway code change from this committee for the last cycle (E5-09/10) and other changes that occurred during the same cycle. In addition, there were areas that needed to be clarified as part of coordination. The CTC also reviewed the concerns raised in the E5 09/10 Public Comments and addressed some outstanding issues from the public comments. Below are the specific reason statements for each section proposed for change:

202 (and 1026.6 exception #3)-The word “interior” was deleted from the definition of exit access stairway and ramp. Generally, this is done because there is no need to restrict exit access to interior elements. Specifically, this was done in coordination with the proposed deletion of exception #3 to section 1026.6. Exception #3 was a holdover from when what are currently exit access stairs were exit stairs. Exception #3 was there to coordinate the allowance for an exterior exit stair to be unprotected when an interior exit stair would be allowed to be unprotected. E5 changed the unenclosed exit stair to an exit access stair. In keeping with that methodology this exception is being deleted and “interior” is being removed from the exit access stair and ramp definitions so that the provisions that allow an unenclosed exit access stair are equally applicable to interior or exterior stairways. Rather than use exception #3 to 1026.6 for a exterior stair without protection the exit access provisions would be used for the exterior stair.

1001.2 – The new sentence in 1001.2 was a requirement in two sentences in 1015.2 that is proposed to be relocated here as it is a more general requirement. This was done as part of some additional proposed revisions to section 1015.2 that will be explained below in section order.

1007.2 -This is another coordination change related to the relocation of the access stair provisions from 1009.3 to 1018.

1007.3 – The last sentence of the main paragraph states that exit access stairways connecting levels in the same story are not permitted as part of an accessible means of egress. While this is true for split level floors or stepped aisles, this should not be true for mezzanines. While they are considered part of the floor below for height and area requirements, mezzanines are required to be elevated over 7'-0" (Section 505.2) similar to a story change in level.

1007.6.2-The exception should only apply to exit stairways based on mandatory enclosure requirements for exit stairways. Exit access stairs may be open or enclosed with non-rated "enclosures" therefore the requirement needs to be clear that separation of areas of refuge serving exit access stairways must comply with 1007.6.2.

1009.2, 1009.3 and subsections– This proposed change will remove the specific requirements for exit access stairways for the general stairway section 1009. 1009 will remain a general stair design section for all stairway details that are not means of egress system specific such as tread and riser dimensions, headroom, widths, etc. The specific enclosure requirements regarding exit access stairs are proposed to be addressed in a new stand alone section, 1018. This is in keeping with the same organization already in chapter 10 for the specific protection requirements for interior exit stairways and ramps and exterior exit stairways and ramps, as well as exit passageways and horizontal exits, each having a dedicated section that addresses the specific protection requirements for each means of egress element. The idea is to separate the general requirements from the specific requirements with regards to each type of MOE element.

1009.3.1 through 1009.3.1.8 – These sections explain how to construct a rated shaft enclosure around an exit access stair when a fire rating is required based on floor penetration limits being exceeded to prevent vertical smoke and heat migration. They were deleted entirely and not relocated to 1018 because the new sections 1018.3 and 1018.4 are proposed to reference to Section 713 for floor opening enclosure construction requirements. The original concept in E5 09/10 was to repeat the shaft enclosure requirements in the exit access stair section as exit access stair enclosure construction requirements. It was decided that this added unneeded text to the code and because it was a duplicate of requirements based on 713 that a change to one section may not be made to the companion section and therefore has the potential to set up an inconsistency with the two code sections that are intended to be the same.

1010.2 – This section is proposed to be deleted because it is not necessary. Just as 1009 is the general requirements for stairs 1010 is the general requirements for ramps. The specific requirements are addressed in stand alone sections that do not need to be cross referenced from the general section or vice versa.

1011.1 – "Exit access doors" is proposed for deletion in the first sentence because marking the path of egress travel is addressed in the remainder of section and exit access doors are part of the path of egress travel.

1015.1 – Revised to include mezzanines to clarify a mezzanine is a space, not a story, for purposes of means of egress. This also clarifies the 2012 IBC revision to Section 505 where mezzanines now reference Chapter 10 for means of egress. 505.3 Egress was deleted from the 2009 edition and replaced with 505.2.2, which is just a reference to chapter 10.

1015.2 –The second sentence was moved to 1001.1 because it is a more general requirement. Exit access stairways and ramps is proposed to be added to the third sentence because by definition an exit access doorway is a point where a path of travel enters an unenclosed exit access stairway but not the stairway itself. Therefore, current code text will allow exit access stairs to diverge towards each other reducing the distance between the stairways to less than the minimum separation. This is the beginning of a few changes to section 1015 that will prohibit diverging exit access stairs to less than the required separation distance for exit access doorways. Further modifications detailed below detail arrangement of exit access stairways in addition to exit access doorways, therefore, the elements were added to 1015.2 for consistency with the next proposed changes to 1015.2.1 and 1015.2.2.

1015.2.1 and 1015.2.2- In three places the word "doors" was deleted after "exit" because exit stands on its own and does not need to specifically reference and exit door.

1015.2.1.1– When exit access stairs are used the point where the path of travel enters the stairway is by definition an "exit access doorway". There is concern that there will be confusion regarding how to measure the distance between "exit access doorways" when unenclosed exit access stairways are used. The three measurement methods are proposed to be added to clearly state how to measure between doors, stairways and ramps when they need to meet separation requirements per section 1015.

1015.2.3 and 1015.2.3.1-This proposed section and sub-section are intended to require that the minimum separation distances between exit access stairways and ramps be maintain for the entire length of travel on the stairway or ramp. This is to prohibit stair and ramp runs that meet separation distance requirements at the first riser or beginning slope, from converging towards another stair or ramp such that the separation is reduced as the occupant goes up or down the stair or ramp run. Exit access stairs and ramps should maintain the required distance, just as doors, until egress travel over the ramp or stair is completed.

1016.3 – This is a companion change to 1018.3 exception #6 (previous #7 to 1009.2.2) detailed below regarding outdoor facilities. The exception to 1018.3 was changed to match the requirements for open air seating as regulated by section 10128.7, which allows unlimited travel distance in non-combustible construction that has open air seating and 400 feet in combustible construction. This change deletes the measurement of the travel distance to the closest riser in outdoor facilities and replaces it with the 400 foot or unlimited travel distance per 1028.7. The intent is to coordinate the various travel distance requirements regarding open air seating facilities.

New Section 1018 Exit access stairways and ramps-

Current section 1009.3 is proposed to be relocated to new section 1018. This is the most significant aspect of this code change proposal. This part of the proposed change creates a new stand alone code section for exit access stairway and ramp specific

requirements so that the specific requirements for exit access stairs are separate from the general requirements. This is in keeping with the same organization already in chapter 10 for the specific protection requirements for interior exit stairways and ramps and exterior exit stairways and ramps, as well as exit passageways and horizontal exits, each having a dedicated section that addresses the specific protection requirements for each means of egress element. The specific enclosure requirements regarding exit access stairs are proposed to be addressed in the new section, 1018.1009 will remain a general stair design section for all stairway details that are not means of egress system specific such as tread and riser dimensions, headroom, widths, etc.

New 1018.1 – This is just a general scoping section. The statement that stories include basements but not mezzanines was included in this section.

New 1018.2 - This section clarifies that steps/ramps between levels within a story are always permitted to be open. Enclosure requirements are not required until openings between stories are created for exit access stairways/ramps.

New 1018.3 (relocated 1009.3) – This proposed section is the text relocated from 1009.3 with some changes to the format and some changes to the specific exemptions. The code change text is formatted with underlines and strike-throughs of the relocated 1009.3 text. Each specific change is explained as follows:

New 1018.3 As an alternative to the rule with exceptions format the section was reformatted with the exceptions reconfigured as conditions which permit unprotected floor openings for exit access stairs/ramps. This is in keeping with the philosophy introduced with the vertical openings code change approved for the 2012 edition, which reconfigured the shaft enclosure exceptions to options. As part of the reformatting the statement “not required to be enclosed” has been removed from the exceptions to the body of section 1018.3. Additionally “and ramps” has been added to each condition; this was done to make it clear that the entire section addresses ramps and stairs equally. Previous section 1009.3.1 and 1009.3.1.1 through 1009.3.1.8 were the enclosure requirements applicable when a floor opening is required to be protected with a fire rated enclosure; this was deleted and not relocated to 1018. These sections were deleted entirely and not relocated to 1018 because the new sections 1018.3 and 1018.4 are proposed to reference to Section 713 for floor opening enclosure construction requirements. The original concept in E5 09/10 was to repeat the shaft enclosure requirements in the exit access stair section as exit access stair enclosure construction requirements. It was decided that this added unneeded text to the code and because it was a duplicate of requirements based on 713 that a change to one section may not be made to the companion section and therefore has the potential to set up an inconsistency with the two code sections that are intended to be the same.

1018.3 Exception/condition #1-Group I-2 and I-2 deleted from condition #1 and moved down to a new Section 1018.4, which addresses group I-2 and I-1. The restriction that requires all group I-2 and I-3 stairway floor openings to be protected with a shaft has not been changed. The last sentence stating “such interconnected stories shall not be open to other stories” was added to clarify that the first condition can only be used when there are no openings to other stories, other than the two stories connected by the exit access stair. This is to prevent other permitted floor openings from being used with this allowed opening to create a staggered opening condition where more than two stories can atmospherically communicate.

1018.3 Exception/condition #2-The use group limitation of this condition was moved from the end of the sentence to the beginning to make it easier to use so the code user can quickly identify the scope of the condition. Additionally “live/work unit” was added to the types of units that can use this condition. Unenclosed exit access stairs are permitted in live/work units per 419.4 and live/work unit is a type of group R-2 unit distinct from dwelling units and sleeping units.

1018.3 Exception/condition #3 and Deletion of exception #4-The term floor opening was replaced with vertical opening because the opening in this condition can be between multiple floors. Exception #4 was the same exception as exception #3 except that it applies to groups other than B and M with the only difference being that the opening is limited to 4 stories for groups other than B and M. To reduce the amount of text and number of conditions the “other than group B and M” provision was moved to condition #3 as the last sentence in condition #3.

1018.3 Exception/condition #4 and #5-Just reformatting as described in the 1018.3 general explanation.

1018.3 Exception/condition #6- This condition was modified with input from Ed Roether, who is an expert in stadium design. “Outdoor facilities where all portions of the means of egress are essentially open to the outside” is proposed to be changed to “open-air seating”, which is the term used in section 1028.7 regarding travel distance in assembly seating. This condition is proposed to be changed to be coordinated with the requirements for open air seating as regulated by section 1028.7, which allows unlimited travel distance in non-combustible construction that has open air seating and 400 feet in combustible construction.

1018.3 previous exception #8-This exception was deleted because the 2012 IBC section 410.6 was modified to address the specific means of egress requirements for stages and technical production areas. New section 410.6.2 in the 2012 IBC specifically exempts stage and technical production areas from stair/ramp enclosure therefore this exception/condition is redundant and not needed.

1018.3 Exception/condition #7-Just reformatting as described in the 1018.3 general explanation.

1018.3 previous exception #10 deleted– This exception was moved to 1018.4

New 1018.4 – This is the relocated and reformatted requirement for group I-2 and I-3 exit access stair/ramp enclosure as part of the reformat from exceptions to conditions. Additionally, as noted above, the previous exception #10 was relocated as an exception to this requirement because it is a specific exception for group I-3.

1026.6 Exception #3 deletion- 1026.6 exception #3 was a holdover from when what are currently exit access stairs were exit stairs. Exception #3 was there to coordinate the allowance for an exterior exit stair to be unprotected when an interior exit stair would be allowed to be unprotected. E5 changed the unenclosed exit stair to an exit access stair. In keeping with that methodology this exception is being deleted and "interior" is being removed from the exit access stair and ramp definitions so that the provisions that allow an unenclosed exit access stair are equally applicable to interior or exterior stairways. Rather than use exception #3 to 1026.6 for to create an exterior exit stair without protection the exit access provisions would be used for the exterior stair.

1027.1 exception #1.1-This is an editorial change that clarifies the exit stairways/ramps must have the free path of travel. This is a companion to the new section 1.4 described below.

1027.1 exception #1.4-This limitation is proposed to prevent an exit access stair and separate exit stair, which begin on the same floor, from termination to close together on the exit discharge floor. This is proposed so that one localized fire event on the exit discharge floor will not take out the termination of both means of egress components when an exit stair is permitted to discharge into the building. The 30 feet or ¼ diagonal separation distances were based on the 30 feet or ¼ diagonal that is specified for separation of interior stairways in high-rise section 403.5.1.

1028.5 and 505.2.3- "and at least one leading directly to an exit" is proposed for deletion. ICC staff asked for the committee to look at this do to numerous interpretive questions regarding what "leading directly to an exit" means. In both of these cases exit access stairs serving 2 stories could meet 1018.3 exception #1 and since neither condition qualifies as a story allowing exit access stairways is consistent with the provisions of 1018.3. Since "directly to an exit" can be interpreted to mean the mezzanine floor or balcony must have at least one exit at the mezzanine or balcony level that text is proposed to be deleted to allow exit access stairs to be used in both cases for both sets of stairways.

403.5.1-This is in response to E5 public comments. The intent of the separation required by this section is specific to the enclosure, not the stairway, therefore this language has been corrected.

505.2.3 – See reason statement for 1028.5.

707.3.3 and 707.5.1-These changes are to coordinate with the change in section numbering that occurred with moving the exit access stairway and ramp provisions from 1009 to 1018 and the change to reference section 713 for exit access stairway and ramp rated enclosure design requirements. References related to if an enclosure is required refer to sections in 1018, which is where the requirements for when a rated enclosure is required are proposed to be relocated. References related to the construction of the rated enclosure refer to section 713, which is where the requirements for how to rate the enclosure are located.

707.7.1-References to exit access stairways and ramps are proposed to be removed from this section because section 1018 is proposed to reference section 713 for exit access stairway and ramp rated enclosure design. Existing section 713.7.1 addresses prohibited openings therefore this reference is no longer needed in section 707.7.1.

711.4- See reason statement for 707.3.3 above.

712.1.8- Criteria #2 was proposed to be deleted and was approved to be deleted in E5 09/10 but was inadvertently reinstated do to a language change proposed to the same text in FS 56 09/10. Floor openings for open exit access stairways are intended to be protected in accordance with the exit access stair provision in 1009.3 (1018 per this proposal). If Criteria #2 is retained it will cause inconsistency with the exit access stairway provisions. It was the intent of E5 09/10 to have all exit access stair related opening protection requirements provided in the exit access stair provisions in chapter 10.

712.1.12 – This section has the terminology updated from "unenclosed" to "exit access" stairway to coordinate with terminology approved in E5-09/10. Additionally the section references are updated from 1009.3 to 1018 to coordinate with the relocation of exit access stair provisions from 1009.3 to 1018, which is explained further below in the reason statement. The purpose of the section is to act as a pointer to the exit access stairway vertical opening requirements that are all provided in proposed section 1018 (previous section 1009.3) for any vertical opening that contains an exit access stairway.

713.1 – This is another coordination change related to the relocation of the access stair provisions from 1009.3 to 1018. The enclosure requirements for exit access stairways in 1018 now reference Section 713 for rated enclosure construction requirements, rather than repeating the requirements in chapter 10, therefore this sentence is no longer needed.

Cost Impact: None

Public Hearing Results

Committee Action:

Approved as Modified

Modify proposal as follows:

1001.2 (IFC [B] 1001.2) Minimum requirements. It shall be unlawful to alter a building or structure in a manner that will reduce the number of exits or the capacity of the means of egress to less than required by this code. ~~Means of egress shall be designed to be continuous and unobstructed.~~

1015.2 (IFC [B] 1015.2) Exit or exit access doorway arrangement. Required exits shall be located in a manner that makes their

availability obvious. Exits, exit access doorways, ~~and~~ exit access stairways and ramps shall be arranged in accordance with Sections 1015.2.1 and 1015.2.2 this section.

1015.2.1 (IFC [B] 1015.2.1) Two exits or exit access doorways. Where two ~~exits, or exit access doorways, and~~ exit access stairways ~~or and~~ ramps, ~~or any combination thereof,~~ are required from any portion of the ~~exit access, the exit or exit access doorways and exit access stairways and ramps~~ they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between ~~exit or exit access doorways and exit access stairways and ramps~~ them. Interlocking or *scissor stairs* shall be counted as one *exit stairway*.

Exceptions:

1. Where interior exit stairways are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1018, the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. Where a building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance ~~of the exit or exit access doorways, and exit access stairways and ramps~~ shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

Committee Reason: The committee proposed a modification to Section 1001.2 is to remove the proposed last sentence. That language is not needed as it is already included in the definition for 'means of egress.' The modification to Section 1015.2 and 1015.2.1 was proposed by the proponent due to a grammatical error. The revised proposal will allow for all four components, 1) exits, 2) exit access doorways, 3) exit access stairways, and 4) exit access ramps, to be considered when evaluating arrangements of exit access elements. The remainder of the proposal is a good cleanup related to the open stairway change, E5-09/10. The deletion of the separation (1009.3) requirements in favor of a reference to stairway separation requirements (Section 713 in new Section 1018.3) removes redundant language and will allow for consistency in the future. The new Section 1018, as a section for exit access stairway separation, is consistent with the idea of interior exit stairway separation in Section 1022 and exterior exit stairway separation in Section 1026. The new language regarding convergence of open exit stairways addressed this safety concern in an appropriate manner (1027.1).

Assembly Action:

None

Public Comments

Public Comment:

Al Godwin, CBO, CPM, representing Aon Fire Protection Engineering Corporation, requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

**SECTION 1011 (IFC [B] 1011)
EXIT SIGNS**

1011.1 (IFC [B] 1011.1) Where required. *Exits and exit access doors* shall be marked by an *approved exit* sign readily visible from any direction of egress travel. The path of egress travel to *exits* and within *exits* shall be marked by readily visible *exit* signs to clearly indicate the direction of egress travel in cases where the *exit* or the path of egress travel is not immediately visible to the occupants. Intervening *means of egress* doors within *exits* shall be marked by *exit* signs. *Exit* sign placement shall be such that no point in an *exit access corridor* or *exit passageway* is more than 100 feet (30 480 mm) or the *listed* viewing distance for the sign, whichever is less, from the nearest visible *exit* sign.

Exceptions:

1. *Exit* signs are not required in rooms or areas that require only one *exit* or *exit access*.
2. Main exterior *exit* doors or gates that are obviously and clearly identifiable as *exits* need not have *exit* signs where *approved by the building official*.
3. *Exit* signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3.
4. *Exit* signs are not required in dayrooms, sleeping rooms or dormitories in occupancies in Group I-3.
5. In occupancies in Groups A-4 and A-5, *exit* signs are not required on the seating side of vomitories or openings into seating areas where *exit* signs are provided in the concourse that are readily apparent from the vomitories. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.

Commenter's Reason: The original proposal deleted the phrase "and *exit access doors*." These are the exit access doors out of rooms, offices, banquet halls, conference rooms, etc. Exit signs have always been required at these locations unless complying with the exceptions. The term "*Exits*" is not inclusive of *exit access* doors.

Without this phrase, exit signs will only be required in the *exit access* "in cases where the exit or path of egress travel is not immediately visible". As such, each room has to be evaluated as to whether exit signs are needed.

The phrase should be left in.

Final Hearing Results

E7-12

AMPC

Code Change No: E57-12

Original Proposal

Section(s): 202, 1008.1.4.2 (IFC [B] 202, 1008.1.4.2)

Proponent: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

Add the following definition:

SECTION 202 DEFINITIONS

LOW ENERGY POWER-OPERATED DOOR. Swinging door which open automatically upon an action by an pedestrian, such as pressing a push plate or waving a hand in front of a sensor. The door closes automatically, and operates with decreased forces and decreased speeds. See also POWER ASSISTED DOOR and POWER OPERATED DOOR.

POWER-OPERATED DOOR. Swinging, sliding, or folding door which open automatically when approached by a pedestrian or open automatically upon an action by an pedestrian. The door closes automatically, and include provisions such as presence sensors to prevent entrapment. See also LOW ENERGY POWER OPERATED DOOR and POWER ASSISTED DOOR.

POWER-ASSISTED DOOR. Swinging door which opens by reduced pushing or pulling force on the door operating hardware. The door closes automatically after the pushing or pulling force is released, and function with decreased forces. See also LOW ENERGY POWER OPERATED DOOR and POWER OPERATED DOOR.

Revise as follows:

1008.1.4.2 (IFC [B] 1008.1.4.2) Power-operated doors. Where *means of egress* doors are operated or assisted by power, such as doors with a photoelectric-actuated mechanism to open the door upon the approach of a person, or doors with power-assisted manual operation, the design shall be such that in the event of power failure, the door is capable of being opened manually to permit *means of egress* travel or closed where necessary to safeguard *means of egress*. The forces required to open these doors manually shall not exceed those specified in Section 1008.1.3, except that the force to set the door in motion shall not exceed 50 pounds (220 N). The door shall be capable of swinging open from any position to the full width of the opening in which such door is installed when a force is applied to the door on the side from which egress is made. ~~Full-p~~Power-operated swinging doors, power-operated sliding doors, and power-operated folding doors shall comply with BHMA A156.10. Power-assisted swinging doors and low energy power-operated swinging doors shall comply with BHMA A156.19.

Exceptions:

1. Occupancies in Group I-3.
2. Horizontal sliding doors complying with Section 1008.1.4.3.
3. For a biparting door in the emergency breakout mode, a door leaf located within a multiple-leaf opening shall be exempt from the minimum 32-inch (813 mm) single-leaf requirement of Section 1008.1.1, provided a minimum 32-inch (813 mm) clear opening is provided when the two biparting leaves meeting in the center are broken out.

Reason: This proposal is intended to clarify the IBC and while not revising the technical requirements of the code.

The proposed definitions and text revisions are intended to more closely align the IBC with the standards currently referenced in Section 1008.1.4.2.

The doors of Section 1008.1.4.2 are the various types of power-operated doors such as the doors installed at the entrances to buildings, and may be installed within these same buildings.

Cost Impact: None.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The definitions have some dangling clauses. Is the door supposed to close even if it is open only halfway. The text in 1008.1.4.2 added swinging and sliding in the door descriptions, but the types are not part of the definitions.

Assembly Action:

None

Public Comments

Public Comment:

John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA), requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

SECTION 202 DEFINITIONS

LOW ENERGY POWER-OPERATED DOOR. Swinging door which opens automatically upon an action by ~~a~~ a pedestrian, such as pressing a push plate or waving a hand in front of a sensor. The door closes automatically, and operates with decreased forces and decreased speeds. See also POWER-ASSISTED DOOR and POWER-OPERATED DOOR.

POWER-OPERATED DOOR. Swinging, sliding, or folding door which opens automatically when approached by a pedestrian or opens automatically upon an action by ~~a~~ a pedestrian. The door closes automatically, and includes provisions such as presence sensors to prevent entrapment. See also LOW ENERGY POWER-~~OPERATED~~ DOOR and POWER-~~ASSISTED~~ DOOR.

POWER-ASSISTED DOOR. Swinging door which opens by reduced pushing or pulling force on the door operating hardware. The door closes automatically after the pushing or pulling force is released, and ~~function~~ functions with decreased forces. See also LOW ENERGY POWER-OPERATED DOOR and POWER-OPERATED DOOR.

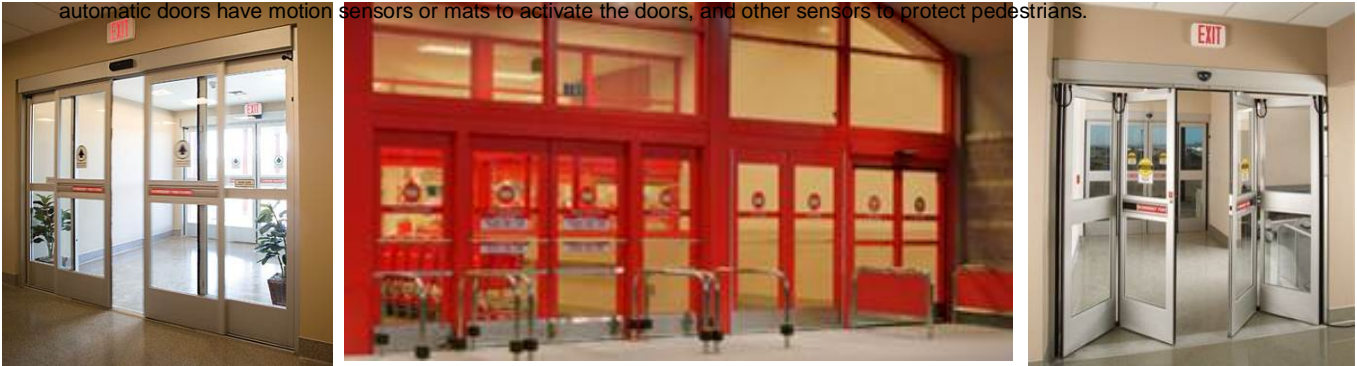
1008.1.4.2 (IFC [B] 1008.1.4.2) Power-operated doors. Where *means of egress* doors are operated or assisted by power, the design shall be such that in the event of power failure, the door is capable of being opened manually to permit *means of egress* travel or closed where necessary to safeguard *means of egress*. The forces required to open these doors manually shall not exceed those specified in Section 1008.1.3, except that the force to set the door in motion shall not exceed 50 pounds (220 N). The door shall be capable of swinging open from any position to the full width of the opening in which such door is installed when a force is applied to the door on the side from which egress is made. Power-operated swinging doors, power-operated sliding doors, and power-operated folding doors shall comply with BHMA A156.10. Power-assisted swinging doors and low energy power-operated swinging doors shall comply with BHMA A156.19.

Commenter's Reason: This intent of this proposal and this public comment is to improve the code by defining / describing the types of doors this section of the code applies to while not revising the technical requirements of the code. We've attempted to address the committee's comments with revisions to the definitions and slight changes to 1008.1.4.2 (adding a comma, and deleting a comma).

Below is a summary of these doors:

Power-Operated Doors

Power-operated doors are commonly installed at the busy entrances of commercial buildings. These relatively fast moving automatic doors have motion sensors or mats to activate the doors, and other sensors to protect pedestrians.



Power-Operated Doors – Three Examples

Low Energy Power-Operated Doors

To enhance accessibility in public buildings, side-hinged doors are commonly installed as low-energy power-operated doors. These doors operate at slower speeds and lower forces, compared to the faster moving power-operated door. Low energy power-operated doors are commonly activated by pressing a push plate, and open fully once activated. In addition, these doors can be activated by pushing or pulling on the door itself, to cause the door to open fully.

Notice the post mounted push plate, left image below, and the wall mounted push plate, right image below.



Low Energy Power-Operated Doors – Two Examples

Power-assisted doors

Power assisted doors reduce the force or effort it takes to open the door while it is being pushed or pulled. The user activates the door with a slight push or pull of the door handle. As soon as the push or pull force is removed, the door will start to close.

Final Hearing Results

E57-12

AMPC

Code Change No: E153-12

Original Proposal

Section(s): 202, 1026.6 (IFC [B] 202, 1026.6)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering representing Aon Fire Protection Engineering (al.godwin@aon.com)

Add new definition as follows:

SECTION 202 DEFINITIONS

OPEN-ENDED CORRIDOR. An interior corridor that is open on each end, and connects to an exterior stairway or ramp at each end with no intervening doors or separation from the corridor.

Revise as follows:

SECTION 1026 (IFC [B] 1026) EXTERIOR EXIT STAIRWAYS AND RAMPS

1026.6 (IFC [B] 1026.6) Exterior stairway and ramp protection. Exterior exit stairways and ramps shall be separated from the interior of the building as required in Section 1022.2. Openings shall be limited to those necessary for egress from normally occupied spaces.

Exceptions:

1. Separation from the interior of the building is not required for occupancies, other than those in Group R-1 or R-2, in buildings that are no more than two stories above grade plane where a level of exit discharge serving such occupancies is the first story above grade plane.
2. Separation from the interior of the building is not required where the exterior stairway or ramp is served by an exterior ramp or balcony that connects two remote exterior stairways or other approved exits with a perimeter that is not less than 50 percent open. To be considered open, the opening shall be a minimum of 50 percent of the height of the enclosing wall, with the top of the openings no less than 7 feet (2134 mm) above the top of the balcony.
3. Separation from the interior of the building is not required for an exterior stairway or ramp located in a building or structure that is permitted to have unenclosed exit access stairways in accordance with Section 1009.3.
4. Separation from the interior ~~open-ended corridor~~ of the building is not required for exterior stairways or ramps ~~connected to open-ended corridors~~, provided that Items 4.1 through 4.5 are met:
 - 4.1 The building, including open-ended corridors, and stairways and ramps, shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
 - 4.2 The open-ended corridors comply with Section 1018.
 - 4.3 The open-ended corridors are connected on each end to an exterior exit stairway or ramp complying with Section 1026.
 - 4.4 The exterior walls and openings adjacent to the exterior exit stairway or ramp comply with Section 1022.7.
 - 4.5 At any location in an open-ended corridor where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 m²) or

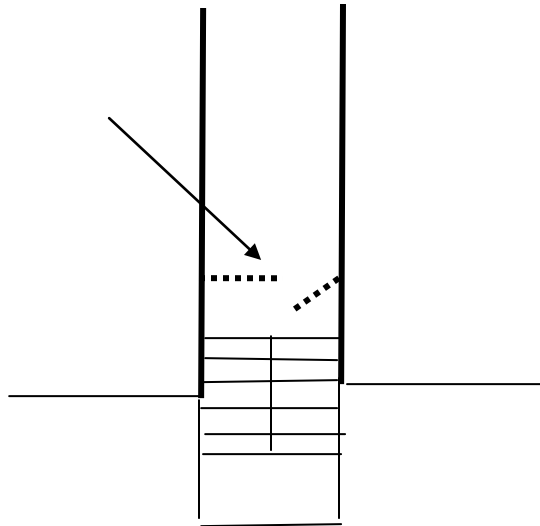
an *exterior stairway or ramp* shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

Reason: Breezeway stairs is what this section is talking about. Whether straight through the building with a stair on each side, or taking a turn somewhere during its path through the building with a stair on either end, it is still a breezeway with exterior stairs. This point is not clear in the current language.

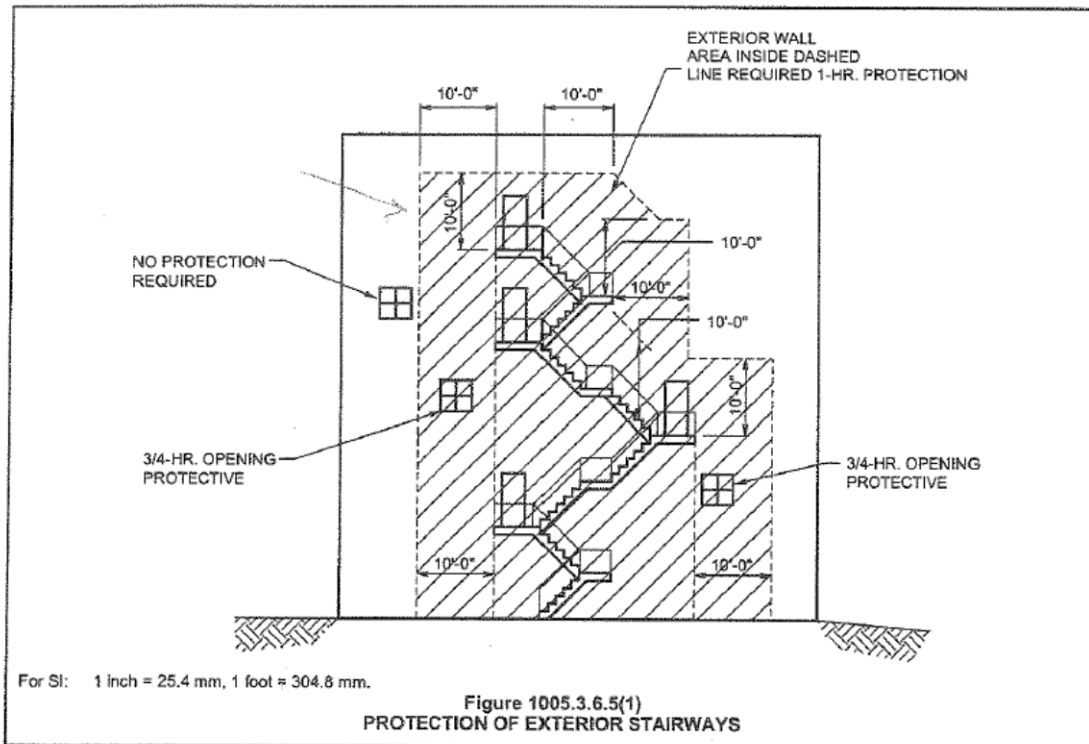
There is this opinion that an open breezeway stairs are allowed by basic code. They are not. 2012 IBC Section 1026.6 states that exterior stairs must be separated from the interior of the building. The breezeway (interior "open ended" corridor) is part of the interior of the building. I have conferred with the original drafter of this code change many times and confirmed that the intent was to allow the removal of the wall and door that separates the stair from the corridor, creating a breezeway.

Many designers and jurisdictions assume that breezeway stairs are allowed by right. However, in order to not have to build the wall and fire door separating the exterior stair from the interior corridor, exception 4 must be complied with, which includes sprinklers in this breezeway.

The following is a representation of the intent of Exception 4, allowing the removal of the separation wall and door:

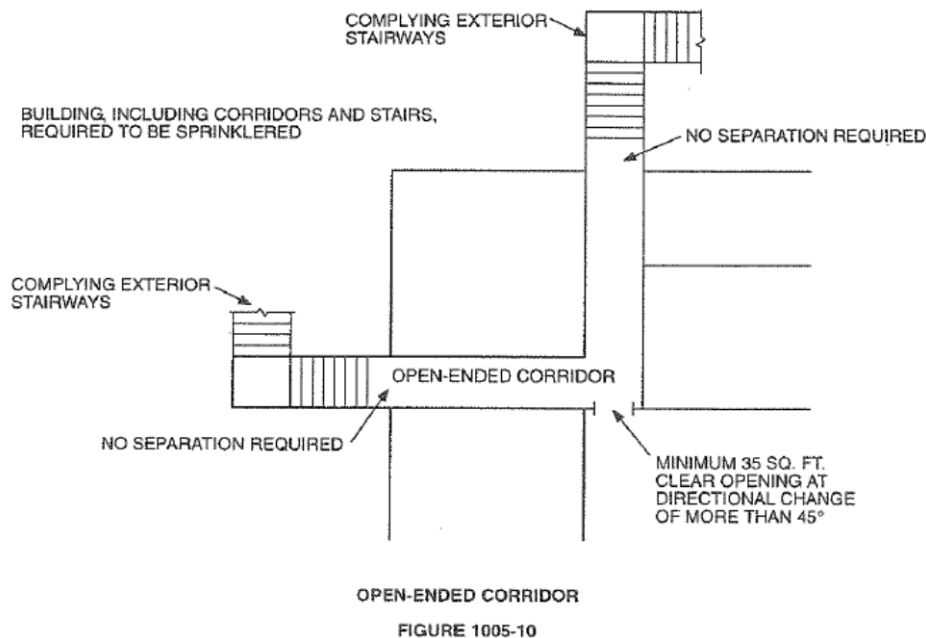


We are all familiar with the required protection on each side of the exterior stair as represented in the following clip from the 2000 International Building Code Commentary.



So, if the walls on each side of the stair have to be protected, how can a large opening where the door occurs be removed and have an unprotected connection to the interior corridor.

The 2000 IBC Handbook, provided the following accurate depiction of what this code change applied to as follows:



Here is the original code change that inserted the provision. Notice the statement "The purpose of this analysis was to determine if an equivalent level of life safety could be achieved by the design of an open breezeway in comparison to an enclosed corridor or balcony for these multifamily buildings." The code change was not to eliminate the protection between the unit and the stair, but to remove the protection (wall and fire rated door) between the stair and what would have been an interior corridor.

technical change.

Public Hearing: Committee: AS AM D
Assembly: ASF DF

1008.7-2

Proponent: Ron Nickson, National Multi Housing Council/National Apartment Association

1. Revise as follows:

1008.7 Exterior exit stairways. Exterior exit stairways that conform to the requirements for interior exit stairways except for the enclosure requirements, are permitted as an element of a required means of egress for buildings not exceeding six stories or 75 feet (22.9 m) in height for occupancies other than Group I-2.

An exterior exit stairway that serves as an exit component shall be open to the outside on at least one side except for required structural columns beams, and open-type handrails and guards. A minimum of 35 square feet (3.22 m²) of aggregate open area shall be provided within the horizontal projection of each floor to ceiling level at each exterior stair or within the horizontal projection of the floor to ceiling level of the stairway landing that is located no more than 1/2 level above the corridor floor.

The adjoining open areas shall be either yards, courts or public ways; the remaining sides are permitted to be enclosed by the exterior walls of the building. Any stairway not meeting the definition of an exterior stairway shall comply with the requirements for interior stairways.

Exterior stairways shall be located in accordance with Section 1009.1.

2. Revise the definition of Stairway, Exterior as follows:

SECTION 1002 DEFINITIONS

STAIRWAY, EXTERIOR A stairway that is open on at least one side, except for required structural columns, beams, and open-type handrails, and guards. The adjoining open areas shall be either yards, courts or public ways; the other sides of the exterior stairway need not be open.

Reason: To establish minimum requirements for open area on exterior exit stairways and permit the use of enclosed guards and handrail systems.

The 35 sq. ft. of open area is based on computer fire studies of six multifamily projects in Virginia containing more than 2000 individual dwelling units. The analysis was completed by the Sullivan Code Group using HAZARD I, a fire hazard assessment method developed by the

United States National Institute of Standards and Technology. The procedures used by the Sullivan Code Group were reviewed by Professor Jonathan Barnett, Ph.D., Associate Professor, Center for Firesafety Studies, Worcester Polytechnic Institute who checked for conformity with the fire modeling expectations and limitations.

The findings, which are based on the provisions in the 1996 BOCA National Building Code, apply equally to the provisions in the IBC. The results, summarized by the Sullivan Code Group in the following Executive Summary, for the six buildings included in the studies were very similar. The buildings studied were multifamily apartments with various configurations of corridors connected to exterior open stairs.

EXECUTIVE SUMMARY

The purpose of this analysis was to determine if an equivalent level of life safety could be achieved by the design of an open breezeway in comparison to an enclosed corridor or a balcony for these multifamily buildings.

The multifamily buildings were analyzed using engineering judgement, referenced literature, the suite of computer programs called FASTlite, and CFAST and, computer-based fire models developed by the United States National Institute of Standards and Technology, Building and Fire Research Laboratory.

The reasonable worst case fire scenario modeled was an arson fire on the breezeway. By assuming that the design fire is a fast growing arson fire, this analysis goes beyond the requirements of the Building Code which does not consider arson fire situations in determining building fire safety regulations. Therefore, this analysis is evaluating the building under more adverse conditions than are addressed in the Building Code. The results of the analysis are:

1. For the life safety of the building occupants on the floor of fire origin, the open breezeway configuration is superior to the enclosed corridor configuration.
2. For the life safety of the building occupants on floors other than the floor of fire origin, the open breezeway configuration meets the intent of the egress provisions in the BOCA Code. With the open breezeway configuration, at least one stairwell should maintain tenable egress conditions depending on the wind direction. In all cases analyzed, one stairwell was capable of handling the occupant load. Therefore, the intent of the code is met.
3. Smoke conditions on floors other than the floor of fire origin will remain safe for a suitable period of time to allow occupant egress with the open breezeway configuration, even without sprinklers. If there is a wind, the tenability in the open breezeways is improved.
4. With the enclosed corridor configuration, sprinkler activation is predicted to occur after the time at which the upper smoke layer reaches a level that could impede egress. With the open breezeway configuration, sprinkler activation is predicted to occur prior to the time at which the upper smoke layer reaches a level that could impede egress.
5. The results of this analysis have demonstrated that an open breezeway protected by quick response automatic sprinklers provides occupant egress conditions which are better than code-complying balcony designs. Therefore an open breezeway protected by quick response sprinklers, as designed for this project, should be regulated by the same requirements as the open balcony which does not require a fire resistance rated floor when standard response automatic sprinklers are present. The design of the open breezeway provides a level of life safety equivalent or superior to that required by the BOCA Code Sections 106.2 and 105.4.

Copies of the Fire Studies are submitted for reference (see NMHC/NAA proposal for Section 1004.7). Additional copies are available from the proponent.

Public Hearing: Committee: AS' AM D
Assembly: ASF DF

Last cycle, code change E134-09/10 made it clear that this exception only applied to the wall and door that would normally separate an exterior stair from the interior corridor. This exception does not apply to other separation requirements on the sides of the stairs.

The specific section reasoning for this code change is as follows:

Section 202, provide a definition of an open-corridor. The term open-ended *corridor* is already used in the provision. Hopefully this will expand on code change E134-09/10 to clarify that this provision is only to eliminate the separation required between the stair and the interior corridor. Not the units on either side.

Section 1026.6, expanding the same concept, adding clarity.

In the Group B cycle, the following code change is to be submitted:

Part III

IBC/IFC, Add new Section 903.3.1.2.2 to read as follows:

903.3.1.2.2 Open-ended Corridors. Sprinkler protection shall be provided in open-ended corridors serving exterior stairways and ramps as specified in Section 1026.6, exception 4.

Section 903.3.1.2.2 will now clarify that when a 13R system is used, extra heads must be installed in the open ended corridor in order to claim a breezeway stair. As with Section 903.3.1.2.1, this protection is above the requirements of a standard 13R system. If not checked in the design, these heads will not be installed. As such, the open-ended corridor will not be in compliance with code.

Also for discussion in the Group B cycle is the following possible change:

Part IV

IFC Section 1104.21, change to read as follows:

1104.21 Exterior stairway protection. Exterior *exit stairs* shall be separated from the interior of the building as required in Section 1026.6. Openings shall be limited to those necessary for egress from normally occupied spaces.

Exceptions:

1. (unchanged)
2. (unchanged)
3. (unchanged)
4. Separation from the interior open-ended corridor of the building is not required for *exterior stairways* ~~connected to open-ended corridors~~, provided that:
 - 4.1 ~~The building, including corridors, and stairs, is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.~~
 - 4.2 1 The *open-ended corridors* comply with Section 1018.
 - 4.3 2 The *open-ended corridors* are connected on each end to an *exterior exit stairway* complying with Section 1026.
 - 4.4 3 At any location in an *open-ended corridor* where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 m²) or an *exterior stairway* or *ramp* shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

In Texas, there a thousands of existing breezeway stair apartments. Although not addressed by the UBC it was felt that breezeway stairs were allowed by right. Many of these apartments are either:

1. not sprinklered; or
2. sprinklered with a 13R system and do not have extra heads in the breezeway.

As such, item 4.1 would retroactively require sprinklers in non-sprinklered apartments on office buildings with breezeways, or the installation of extra heads in 13R apartments. This constitutes a retroactive Group R and B sprinkler provision.

Cost Impact: This code proposal will not increase the cost of construction since no extra construction costs are involved.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal clarifies the requirements for open ended corridors that are used as breezeways. There was a concern with the definition. Perhaps there should be clarification on what the ends of the corridor needs to be open too (i.e., the outside).

Assembly Action:

None

Final Hearing Results

E153-12

AS

Code Change No: S113-12 Part I

Original Proposal

Section(s): 1703.1.3, 1703.5.2, 1703.6, 1703.6.2, 1704.1, 1704.2, 1704.2.1, 1704.2.2, 1704.2.4, 1704.3, 1704.3.1, 1704.3.2, 1705.1, 1705.1.1, Table 1705.2.2, 1705.3, Table 1705.3, 1705.3.1, 1705.4, 1705.4.1, 1705.4.2, 1705.6, Table 1705.6, 1705.7, Table 1705.7, 1705.8, Table 1705.8, 1705.9, 1705.11.1, 1705.13, 1705.13.1, 1705.13.2, 1705.14, 1901.4, [F] 909.18.8, [F] 909.18.8.1, [F] 909.21.7[F] 1705.17, [F] 1705.17.1

Proponent: Phillip Brazil, P.E., S.E., Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development Committee (pbrazil@reidmiddleton.com)

THIS IS A TWO PART CODE CHANGE. PART I WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. PART II WILL BE HEARD BY THE IFC COMMITTEE, AS TWO SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES

PART I – IBC STRUCTURAL

Revise as follows:

1703.1.3 Personnel. An *approved agency* shall employ experienced personnel educated in conducting, supervising and evaluating tests and/or special inspections.

1703.5.2 Inspection and identification. The *approved agency* shall periodically perform an a special inspection, which shall be in-plant if necessary, of the product or material that is to be *labeled*. The ~~inspection~~ special inspector shall verify that the labeled product or material is representative of the product or material tested.

1703.6 Evaluation and follow-up inspection services. Where structural components or other items regulated by this code are not visible for special inspection after completion of a prefabricated assembly, the applicant shall submit a report of each prefabricated assembly. The report shall indicate the complete details of the assembly, including a description of the assembly and its components, the basis upon which the assembly is being evaluated, test results and similar information and other data as necessary for the *building official* to determine conformance to this code. Such a report shall be *approved* by the *building official*.

1703.6.2 Test and inspection records. Copies of necessary test and special inspection records shall be filed with the *building official*.

SECTION 1704 SPECIAL INSPECTIONS AND TESTS, CONTRACTOR RESPONSIBILITY AND STRUCTURAL OBSERVATIONS

1704.1 General. This section provides minimum requirements for special inspections and tests, the statement of special inspections, contractor responsibility and structural observations.

1704.2 Special inspections and tests. Where application is made for construction as described in this section, the owner or the *registered design professional in responsible charge* acting as the owner's agent shall employ one or more *approved agencies* to perform special inspections and tests during construction on the types of work listed under Section 1705. These special inspections and tests are in addition to the inspections by the building official that are identified in Section 110.

Exceptions:

1. Special inspections and tests are not required for construction of a minor nature or as warranted by conditions in the jurisdiction as *approved by the building official*.
2. Unless otherwise required by the *building official*, special inspections and tests are not required for Group U occupancies that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.
3. Special inspections and tests are not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section 2211.7 or the conventional light-frame construction provisions of Section 2308.

1704.2.1 Special inspector qualifications. The special inspector shall provide written documentation to the building official demonstrating his or her competence and relevant experience or training. Experience or training shall be considered relevant ~~when~~ where the documented experience or training is related in complexity to the same type of special inspection or testing activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code. The *registered design professional in responsible charge* and engineers of record involved in the design of the project are permitted to act as the *approved agency* and their personnel are permitted to act as the special inspectors for the work designed by them, provided they qualify as special inspectors.

1704.2.2 Access for special inspection. The construction or work for which special inspection or testing is required shall remain accessible and exposed for special inspection or testing purposes until completion of the required special inspections or tests.

1704.2.4 Report requirement. Special inspectors shall keep records of special inspections and tests. The special inspector shall ~~furnish~~ submit reports of special inspections reports and tests to the *building official*, and to the *registered design professional in responsible charge*. Reports shall indicate that work inspected or tested was or was not completed in conformance to *approved construction documents*. Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the *building official* and to the *registered design professional in responsible charge* prior to the completion of that phase of the work. A final report documenting required special inspections or tests, and correction of any discrepancies noted in the inspections or tests, shall be submitted at a point in time agreed upon prior to the start of work by the applicant and the *building official*.

1704.3 Statement of special inspections. Where special inspections or testing is tests are required by Section 1705, the *registered design professional in responsible charge* shall prepare a statement of special inspections in accordance with Section 1704.3.1 for submittal by the applicant in accordance with Section 1704.2.3.

Exception: The statement of special inspections is permitted to be prepared by a qualified person *approved by the building official* for construction not designed by a *registered design professional*.

1704.3.1 Content of statement of special inspections. The statement of special inspections shall identify the following:

1. The materials, systems, components and work required to have special inspections or testing tests by the *building official* or by the *registered design professional* responsible for each portion of the work.
2. The type and extent of each special inspection.
3. The type and extent of each test.
4. Additional requirements for special inspections or testing tests for seismic or wind resistance as specified in Sections 1705.10, 1705.11 and 1705.12.
5. For each type of special inspection, identification as to whether it will be continuous special inspection or periodic special inspection.

1704.3.2 Seismic requirements in the statement of special inspections. Where Section 1705.11 or 1705.12 specifies special inspection, testing or qualification for seismic resistance, the statement of special inspections shall identify the designated seismic systems and seismic force-resisting systems that are subject to the special inspections or tests

SECTION 1705
REQUIRED VERIFICATION AND SPECIAL INSPECTIONS AND TESTS

1705.1 General. ~~Verification and~~ Special inspections and tests of elements of buildings and structures shall ~~be as required by~~ meet the applicable requirements of this section.

1705.1.1 Special cases. Special inspections and tests shall be required for proposed work that is, in the opinion of the *building official*, unusual in its nature, such as, but not limited to, the following examples:

1. Construction materials and systems that are alternatives to materials and systems prescribed by this code.
2. Unusual design applications of materials described in this code.
3. Materials and systems required to be installed in accordance with additional manufacturer's instructions that prescribe requirements not contained in this code or in standards referenced by this code.

TABLE 1705.2.2
REQUIRED VERIFICATION AND SPECIAL INSPECTIONS OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL

<u>VERIFICATION AND INSPECTION TYPE</u>	CONTINUOUS	PERIODIC	REFERENCED STANDARD ^a
1. Material verification of cold-formed steel deck:			
a. Identification markings to conform to ASTM standards specified in the approved construction documents	—	X	Applicable ASTM material standards
b. Manufacturers' certified test reports.	—	X	
2. <u>Special</u> inspection of welding:			
a. Cold-formed steel deck			
1. Floor and roof deck welds	—	X	AWS D1.3
b. Reinforcing steel:			
1. Verification of weldability of reinforcing steel other than ASTM A706	—	X	
2. Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	X	—	AWS D1.4 ACI 318: Section 3.5.2
3. Shear reinforcement.	X	—	
4. Other reinforcing steel	—	X	

For SI: 1 inch = 25.4 mm.

a. Where applicable, see also Section 1705.11, Special inspections for seismic resistance.

1705.3 Concrete construction. ~~The~~ Special inspections and verifications for tests of concrete construction shall be ~~as required by~~ performed in accordance with this section and Table 1705.3.

Exception: Special inspections and tests shall not be required for:

(Portions of section not shown remain unchanged)

TABLE 1705.3

REQUIRED VERIFICATION AND SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD ^a	IBC REFERENCE
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(Portions of table not shown remain unchanged)

1705.3.1 Materials tests. In the absence of sufficient data or documentation providing evidence of conformance to quality standards for materials in Chapter 3 of ACI 318, the building official shall require testing of materials in accordance with the appropriate standards and criteria for the material in Chapter 3 of ACI 318. Weldability of reinforcement, except that which conforms to ASTM A 706, shall be determined in accordance with the requirements of Section 3.5.2 of ACI 318.

1705.4 Masonry construction. ~~Special inspections and tests of masonry construction shall be inspected and verified in accordance with the quality assurance program requirements of TMS 402/ACI 530/ASCE 5 and TMS 602/ACI 530.1/ASCE 6 quality assurance program requirements.~~

Exception: Special inspections and tests shall not be required for:

1. Empirically designed masonry, glass unit masonry or masonry veneer designed by Section 2109, 2110 or Chapter 14, respectively, where they are part of a structures classified as *Risk Category* I, II or III in accordance with Section 1604.5.
2. Masonry foundation walls constructed in accordance with Table 1807.1.6.3(1), 1807.1.6.3(2), 1807.1.6.3(3) or 1807.1.6.3(4).
3. Masonry fireplaces, masonry heaters or masonry chimneys installed or constructed in accordance.

1705.4.1 Empirically designed masonry, glass unit masonry and masonry veneer in Risk Category IV. ~~The minimum special inspection program~~ Special inspections and tests for empirically designed masonry, glass unit masonry or masonry veneer designed by Section 2109, 2110 or Chapter 14, respectively, ~~in~~ where they are part of a structures classified as *Risk Category* IV, in accordance with Section 1604.5, shall ~~comply~~ be performed in accordance with TMS 402/ACI 530/ASCE 5, Level B Quality Assurance.

1705.4.2 Vertical masonry foundation elements. Special inspections and tests of vertical masonry foundation elements shall be performed in accordance with Section 1705.4 ~~for vertical masonry foundation elements.~~

1705.6 Soils. Special inspections for and tests of existing site soil conditions, fill placement and load-bearing requirements shall be ~~as required by~~ performed in accordance with this section and Table 1705.6. The *approved* geotechnical report, and the *construction documents* prepared by the *registered design professionals* shall be used to determine compliance. During fill placement, the special inspector shall ~~determine~~ verify that proper materials and procedures are used in accordance with the provisions of the *approved* geotechnical report.

Exception: Where Section 1803 does not require reporting of materials and procedures for fill placement, the special inspector shall verify that the in-place dry density of the compacted fill is not less than 90 percent of the maximum dry density at optimum moisture content determined in accordance with ASTM D 1557.

**TABLE 1705.6
REQUIRED VERIFICATION AND SPECIAL INSPECTIONS AND TESTS OF SOILS**

VERIFICATION AND INSPECTION TASK TYPE	CONTINUOUS DURING-TASK LISTED SPECIAL INSPECTION	PERIODICALLY DURING-TASK LISTED SPECIAL INSPECTION PERIODIC
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(Portions of table not shown remain unchanged)

1705.7 Driven deep foundations. *Special inspections and tests* shall be performed during installation and testing of driven deep foundation elements as required by specified in Table 1705.7. The *approved instruction documents* prepared by the *registered design professionals*, shall be used to determine compliance.

**TABLE 1705.7
REQUIRED VERIFICATION AND SPECIAL INSPECTIONS AND TESTS OF DRIVEN DEEP
FOUNDATION ELEMENTS**

<u>VERIFICATION AND INSEPCION TASK TYPE</u>	<u>CONTINUOUS DURING TASK LISTED SPECIAL INSPECTION</u>	<u>PERIODICALLY DURING TASK LISTED PERIODIC SPECIAL INSPECTION</u>
5. For steel elements, perform additional <u>special inspections</u> in accordance with Section 1705.2.	—	-
6. For concrete elements and concrete-filled elements, perform <u>tests and additional special inspections</u> in accordance with Section 1705.3.	—	-

(Portions of table not shown remain unchanged)

1705.8 Cast-in-place deep foundations. *Special inspections and tests* shall be performed during installation and testing of cast-in place deep foundation elements as required by specified in Table 1705.8. The *approved geotechnical report*, and the *construction documents* prepared by the *registered design professionals*, shall be used to determine compliance.

**TABLE 1705.8
REQUIRED VERIFICATION AND SPECIAL INSPECTIONS AND TESTS OF CAST-IN-PLACE DEEP
FOUNDATION ELEMENTS**

<u>VERIFICATION AND INSPECTION TASK TYPE</u>	<u>CONTINUOUS DURING TASK LISTED SPECIAL INSPECTION</u>	<u>PERIODICALLY DURING TASK LISTED SPECIAL INSPECTION</u>
3. For concrete elements, perform <u>tests and additional special inspections</u> in accordance with Section 1705.3.	—	—

1705.9 Helical pile foundations. *Continuous special inspections* shall be performed ~~continuously~~ during installation of helical pile foundations. The information recorded shall include installation equipment used, pile dimensions, tip elevations, final depth, final installation torque and other pertinent installation data as required by the *registered design professional in responsible charge*. The *approved geotechnical report* and the *construction documents* prepared by the *registered design professional* shall be used to determine compliance.

1705.11.1 Structural steel. *Special inspection* ~~for~~ of structural steel shall be performed in accordance with the quality assurance requirements of AISC 341.

Exception: *Special inspections* of structural steel in structures assigned to *Seismic Design Category C* that are not specifically detailed for seismic resistance, with a response modification coefficient, *R*, of 3 or less, excluding cantilever column systems.

1705.13 Sprayed fire-resistant materials. *Special inspections* ~~for~~ and tests of sprayed fire-resistant materials applied to floor, roof and wall assemblies and structural members shall be performed in accordance with Sections 1705.13.1 through 1705.13.6. *Special inspections* shall be based on the fire-resistance design as designated in the *approved construction documents*. The tests set forth in this section shall be based on samplings from specific floor, roof and wall assemblies and structural members. *Special inspections and tests* shall be performed after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, where applicable.

1705.13.1 Physical and visual tests. The *special inspections and tests* shall include the following tests and observations to demonstrate compliance with the listing and the fire-resistance rating:

1. Condition of substrates.
2. Thickness of application.
3. Density in pounds per cubic foot (kg/m³).
4. Bond strength adhesion/cohesion.
5. Condition of finished application.

1705.13.2 Structural member surface conditions. The surfaces shall be prepared in accordance with the *approved* fire-resistance design and the written instructions of *approved* manufacturers. The prepared surface of structural members to be sprayed shall be inspected by the special inspector before the application of the sprayed fire-resistant material.

1705.14 Mastic and intumescent fire-resistant coatings. *Special inspections and tests* for mastic and intumescent fire-resistant coatings applied to structural elements and decks shall be performed in accordance with AWCI 12-B. *Special inspections and tests* shall be based on the fire-resistance design as designated in the *approved construction documents*.

Revise as follows:

1901.4 Special inspections and tests. The *Special inspections and tests* of concrete elements of buildings and structures and concreting operations shall be as required by Chapter 17.

Reason: The proposal has several purposes. It distinguishes between inspections by the building official and special inspections by special inspectors by adding “special” after “inspection” where special inspections by special inspectors are intended. It adds “tests” after “special inspections” to recognize that the requirements of Chapter 17 distinguish between (1) special inspections by the special inspector, and (2) tests by the special inspector or other individuals employed or retained by the approved agency at the construction site or testing facilities. It deletes references to “verification,” which is considered superfluous given that a primary purpose for inspection, including special inspection, is to verify that the construction complies with the building code and the approved construction documents. It also changes the charging language in several places to state that special inspections and tests shall be “performed” rather than be “as required by” for consistency with the charging language elsewhere in Chapter 17.

The titles of Tables 1705.3, 1705.6, 1705.7 and 1705.8 are revised to specify tests as well as special inspections due to the tests that are specified in the first column of each table. The columns labeled “continuous” and “periodic” are changed to “continuous special inspection” and “periodic special inspection” because these distinctions apply to special inspections but not to tests. These changes are not made to Table 1705.2.2 because there are no tests specified in the table.

In Section 1705.4.1, “where they are part of” a structure is added for consistency with similar language in Section 1705.4, Exception, Item #1. In Section 1705.17, the title is changed from “special inspection” to “testing” because there are requirements for testing in the section but there are none for special inspection.

An additional benefit of the proposal is that replacement of Table 1705.4 in the 2009 IBC with a reference to TMS 402/ACI 530/ASCE 5 in the 2012 IBC effectively eliminated requirements for special inspection by continuing the use of “inspected.” The changes above clarify the intended requirements for special inspection.

Changes to Sections 1705.2 through 1705.2.2 were included in early drafts of this proposal but they were deleted after the changes were incorporated into separate proposals, which was the result of collaboration with the steel industry.

Note that separate proposals:

1. Further modify Section 1704.2 by changing the title from “special inspections” to “approved agency”
2. Further modify Section 1704.3.2 by deleting “qualification”
3. Change “inspection” to “inspections” in Sections 1705.10.1, Exception; 1705.10.2, Exception; 1705.11.2, Exception; and 1705.11.3, Exception
4. Further modify Section 1704.3.1 by deleting Item #1 and
5. Change “inspection” to “inspections” in Sections 1705.2.2 and 1705.2.2.1.2 .

Public Hearing Results

Errata: Revise as follows:

THIS IS A TWO PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THIS COMMITTEE.

1703.1.3 Personnel. An *approved agency* shall employ experienced personnel educated in conducting, supervising and evaluating tests and ~~of~~ *special* inspections.

1704.2.1 Special inspector qualifications. The special inspector shall provide written documentation to the building official

demonstrating his or her competence and relevant experience or training. Experience or training shall be considered relevant ~~when~~ where the documented experience or training is related in complexity to the same type of *special inspection or testing* activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code.

The *registered design professional in responsible charge* and engineers of record involved in the design of the project are permitted to act as the *approved agency* and their personnel are permitted to act as ~~the~~ *special inspectors* for the work designed by them, provided they qualify as *special inspectors*.

1704.2.4 Report requirement. Special inspectors shall keep records of *special inspections and tests*. The special inspector shall ~~furnish~~ submit reports of special inspections reports and tests to the *building official*, and to the *registered design professional in responsible charge*. Reports shall indicate that work inspected or tested was or was not completed in conformance to *approved construction documents*. Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the *building official* and to the *registered design professional in responsible charge* prior to the completion of that phase of the work. A final report documenting required *special inspections and tests*, and correction of any discrepancies noted in the inspections or tests, shall be submitted

1704.3 Statement of special inspections. Where *special inspections* or ~~testing~~ tests are required by Section 1705, the *registered design professional in responsible charge* shall prepare a statement of special inspections in accordance with Section 1704.3.1 for submittal by the applicant in accordance with Section 1704.2.3.

Exception: The statement of *special inspections* is permitted to be prepared by a qualified person *approved* by the *building official* for construction not designed by a *registered design professional*.

1704.3.1 Content of statement of special inspections. The statement of special inspections shall identify the following:

1. The materials, systems, components and work required to have *special inspections* or ~~testing~~ tests by the *building official* or by the *registered design professional* responsible for each portion of the work.
2. The type and extent of each *special inspection*.
3. The type and extent of each test.
4. Additional requirements for *special inspections* or ~~testing~~ tests for seismic or wind resistance as specified in Sections 1705.10, 1705.11 and 1705.12.
5. For each type of *special inspection*, identification as to whether it will be continuous *special inspection* or periodic *special inspection*.

**TABLE 1705.2.2
REQUIRED VERIFICATION AND SPECIAL INSPECTIONS OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL**

**TABLE 1705.3
REQUIRED VERIFICATION AND SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION**

VERIFICATION AND INSPECTION TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD ^a	IBC REFERENCE
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(Portions of table not shown remain unchanged)

**TABLE 1705.6
REQUIRED VERIFICATION AND SPECIAL INSPECTIONS AND TESTS OF SOILS**

VERIFICATION AND INSPECTION TASK TYPE	CONTINUOUS DURING TASK LISTED SPECIAL INSPECTION	PERIODICALLY DURING TASK LISTED SPECIAL INSPECTION PERIODIC SPECIAL INSPECTION
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(Portions of table not shown remain unchanged)

**TABLE 1705.8
REQUIRED VERIFICATION AND SPECIAL INSPECTIONS AND TESTS OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS**

VERIFICATION AND INSPECTION TASK TYPE	CONTINUOUS DURING TASK LISTED SPECIAL INSPECTION	PERIODICALLY DURING TASK LISTED PERIODIC SPECIAL INSPECTION
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(Portions of table not shown remain unchanged)

1705.11.1 Structural steel. *Special inspections* ~~for~~ of structural steel shall be performed in accordance with the quality assurance requirements of AISC 341.

Exception: *Special inspections* of structural steel in structures assigned to *Seismic Design Category C* that are not specifically detailed for seismic resistance, with a response modification coefficient, *R*, of 3 or less, excluding cantilever column systems.

1705.13.1 Physical and visual tests. The *special inspections and tests* shall include the following ~~tests and observations~~ to demonstrate compliance with the listing and the fire-resistance rating:

1. Condition of substrates.
2. Thickness of application.
3. Density in pounds per cubic foot (kg/m³).

- 4. Bond strength adhesion/cohesion.
- 5. Condition of finished application.

(Portions of code change not shown remain unchanged)

PART I – IBC STRUCTURAL

Committee Action:

Approved as Modified

Modify proposal as follows:

1703.5.2 Inspection and identification. The *approved agency* shall periodically perform an ~~special~~ inspection, which shall be in-plant if necessary, of the product or material that is to be *labeled*. The ~~inspection special inspector~~ shall verify that the labeled product or material is representative of the product or material tested.

1703.6 Evaluation and follow-up inspection services. Where structural components or other items regulated by this code are not visible for ~~special~~ inspection after completion of a prefabricated assembly, the applicant shall submit a report of each prefabricated assembly. The report shall indicate the complete details of the assembly, including a description of the assembly and its components, the basis upon which the assembly is being evaluated, test results and similar information and other data as necessary for the *building official* to determine conformance to this code. Such a report shall be *approved* by the *building official*.

(Portions of proposal not shown are unchanged)

Committee Reason: This proposal clarifies special inspection and testing provisions by providing consistent terminology throughout Chapter 17. The modification retains the current wording in two sections that don't apply to special inspection.

Assembly Action:

None

Final Hearing Results

S113 Part I

AM

Code Change No: S113-12 Part II

Original Proposal

Section(s): 1703.1.3, 1703.5.2, 1703.6, 1703.6.2, 1704.1, 1704.2, 1704.2.1, 1704.2.2, 1704.2.4, 1704.3, 1704.3.1, 1704.3.2, 1705.1, 1705.1.1, Table 1705.2.2, 1705.3, Table 1705.3, 1705.3.1, 1705.4, 1705.4.1, 1705.4.2, 1705.6, Table 1705.6, 1705.7, Table 1705.7, 1705.8, Table 1705.8, 1705.9, 1705.11.1, 1705.13, 1705.13.1, 1705.13.2, 1705.14, 1901.4, [F] 909.18.8, [F] 909.18.8.1, [F] 909.21.7[F] 1705.17, [F] 1705.17.1

Proponent: Phillip Brazil, P.E., S.E., Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development Committee (pbrazil@reidmiddleton.com)

THIS IS A TWO PART CODE CHANGE. PART I WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. PART II WILL BE HEARD BY THE IFC COMMITTEE, AS TWO SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES

PART II - IFC

Revise as follows:

[F] 909.18.8 ~~Special inspections~~ Testing for smoke control. Smoke control systems shall be tested by a special inspector.

[F] 909.18.8.1 Scope of testing. ~~Special inspections~~ Testing shall be conducted in accordance with the following:

1. During erection of ductwork and prior to concealment for the purposes of leakage testing and recording of device location.
2. Prior to occupancy and after sufficient completion for the purposes of pressure-difference testing, flow measurements, and detection and control verification.

909.21.7 ~~Special inspection~~ Testing. ~~Special inspection~~ Testing for performance shall be required in accordance with Section 909.18.8. System acceptance shall be in accordance with Section 909.19.

[F] 1705.17 ~~Special inspection~~ Testing for smoke control. Smoke control systems shall be tested by a special inspector.

Reason: The proposal has several purposes. It distinguishes between inspections by the building official and special inspections by special inspectors by adding "special" after "inspection" where special inspections by special inspectors are intended. It adds "tests" after "special inspections" to recognize that the requirements of Chapter 17 distinguish between (1) special inspections by the special inspector, and (2) tests by the special inspector or other individuals employed or retained by the approved agency at the construction site or testing facilities. It deletes references to "verification," which is considered superfluous given that a primary purpose for inspection, including special inspection, is to verify that the construction complies with the building code and the approved construction documents. It also changes the charging language in several places to state that special inspections and tests shall be "performed" rather than be "as required by" for consistency with the charging language elsewhere in Chapter 17.

The titles of Tables 1705.3, 1705.6, 1705.7 and 1705.8 are revised to specify tests as well as special inspections due to the tests that are specified in the first column of each table. The columns labeled "continuous" and "periodic" are changed to "continuous special inspection" and "periodic special inspection" because these distinctions apply to special inspections but not to tests. These changes are not made to Table 1705.2.2 because there are no tests specified in the table.

In Section 1705.4.1, "where they are part of" a structure is added for consistency with similar language in Section 1705.4, Exception, Item #1. In Section 1705.17, the title is changed from "special inspection" to "testing" because there are requirements for testing in the section but there are none for special inspection.

An additional benefit of the proposal is that replacement of Table 1705.4 in the 2009 IBC with a reference to TMS 402/ACI 530/ASCE 5 in the 2012 IBC effectively eliminated requirements for special inspection by continuing the use of "inspected." The changes above clarify the intended requirements for special inspection.

Changes to Sections 1705.2 through 1705.2.2 were included in early drafts of this proposal but they were deleted after the changes were incorporated into separate proposals, which was the result of collaboration with the steel industry.

Note that separate proposals:

1. Further modify Section 1704.2 by changing the title from “special inspections” to “approved agency”
2. Further modify Section 1704.3.2 by deleting “qualification”
3. Change “inspection” to “inspections” in Sections 1705.10.1, Exception; 1705.10.2, Exception; 1705.11.2, Exception; and 1705.11.3, Exception
4. Further modify Section 1704.3.1 by deleting Item #1 and
5. Change “inspection” to “inspections” in Sections 1705.2.2 and 1705.2.2.1.2 .

Public Hearing Results

PART II – IFC

Committee Action:

Approved as Modified

Modify proposal as follows:

[F] 909.18.8 Testing for smoke control. Smoke control systems shall be tested by a special inspector in accordance with Section 1705.17.

(Portions of proposal not shown are unchanged)

Committee Reason: See S113-12, Part I. The modification references the Section in Chapter 17 where the requirements are found.

Assembly Action:

None

Final Hearing Results

S113 Part II

AM

Code Change No: S117-12, Part I

Original Proposal

Section(s): 202, 1703.4, 1704.2.5.2, 1705.16.1, 1705.16.2, [F]909.18.8.2, [F]909.18.8.3, [F]1705.17.2

Proponent: Phillip Brazil P.E., S.E., Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development Committee (pbrazil@reidmiddleton.com)

THIS IS A THREE PART CODE CHANGE. PART I WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. PART II WILL BE HEARD BY THE IBC ADMINISTRATION COMMITTEE. PART III WILL BE HEARD BY THE IFC COMMITTEE AS SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC STRUCUTRAL

Revise as follows:

1703.4 Performance. Specific information consisting of test reports conducted by an *approved testing* agency in accordance with the appropriate referenced standards, or other such information as necessary, shall be provided for the *building official* to determine that the material meets the applicable code requirements.

1704.2.5.2 Fabricator approval. *Special inspections* required by Section 1705 are not required where the work is done on the premises of a fabricator registered and *approved* to perform such work without *special inspection*. Approval shall be based upon review of the fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an *approved special inspection* agency. At completion of fabrication, the *approved* fabricator shall submit a *certificate of compliance* to the *building official* stating that the work was performed in accordance with the *approved construction documents*.

1705.16.1 Penetration firestops. Inspections of penetration fire-stop systems that are tested and listed in accordance with Sections 714.3.1.2 and 714.4.1.2 shall be conducted by an *approved inspection* agency in accordance with ASTM E 2174.

1705.16.2 Fire-resistant joint systems. Inspection of fire-resistant joint systems that are tested and listed in accordance with Sections 715.3 and 715.4 shall be conducted by an *approved inspection* agency in accordance with ASTM E 2393.

Reason: The purpose for the proposal is to update references to "approved agency" throughout the building code. Approved agencies (defined in Section 202) are regularly engaged in conducting tests and employ or retain special inspectors (also defined in Section 202) who are qualified to perform inspections, including special inspections.

In Section 1704.2.5.2, "registered" is deleted because no purpose is served by requiring a fabricator who is approved by the building official to also be registered with the same building official.

Note that a separate proposal changes "special inspections" to "testing" in the title of Section 909.18.8 and in Section 909.18.8.1.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Errata: Revise as follows:

THIS IS A THREE PART CODE CHANGE. ALL THREE PARTS WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THIS COMMITTEE.

(Portions of code change not shown remain unchanged)

**PART I – IBC STRUCTURAL
Committee Action:**

Approved as Submitted

Committee Reason: This proposal updates the references to approved agencies throughout the Chapter for consistency.

Assembly Action:

None

Final Hearing Results

S117, Part I

AS

Code Change No: S117-12, Part II

Original Proposal

Section(s): 202, 1703.4, 1704.2.5.2, 1705.16.1, 1705.16.2, [F]909.18.8.2, [F]909.18.8.3, [F]1705.17.2

Proponent: Phillip Brazil P.E., S.E., Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development Committee (pbrazil@reidmiddleton.com)

THIS IS A THREE PART CODE CHANGE. PART I WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. PART II WILL BE HEARD BY THE IBC ADMINISTRATION COMMITTEE. PART III WILL BE HEARD BY THE IFC COMMITTEE AS SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART II – IBC ADMINISTRATION

Revise as follows:

[A] LABELED. Equipment, materials or products to which has been affixed a *label*, seal, symbol or other identifying *mark* of a nationally recognized testing laboratory, ~~inspection~~ *approved* agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

Reason: The purpose for the proposal is to update references to “approved agency” throughout the building code. Approved agencies (defined in Section 202) are regularly engaged in conducting tests and employ or retain special inspectors (also defined in Section 202) who are qualified to perform inspections, including special inspections.

In Section 1704.2.5.2, “registered” is deleted because no purpose is served by requiring a fabricator who is approved by the building official to also be registered with the same building official.

Note that a separate proposal changes “special inspections” to “testing” in the title of Section 909.18.8 and in Section 909.18.8.1.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Errata: Revise as follows:

THIS IS A THREE PART CODE CHANGE. ALL THREE PARTS WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THIS COMMITTEE.

(Portions of code change not shown remain unchanged)

PART II – IBC ADMINISTRATION

Committee Action:

Approved as Submitted

Committee Reason: See S117, Part I.

Assembly Action:

None

Final Hearing Results

S117-12, Part I I

AS

Code Change No: S117-12, Part III

Original Proposal

Section(s): 202, 1703.4, 1704.2.5.2, 1705.16.1, 1705.16.2, [F]909.18.8.2, [F]909.18.8.3, [F]1705.17.2

Proponent: Phillip Brazil P.E., S.E., Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development Committee (pbrazil@reidmiddleton.com)

THIS IS A THREE PART CODE CHANGE. PART I WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. PART II WILL BE HEARD BY THE IBC ADMINISTRATION COMMITTEE. PART III WILL BE HEARD BY THE IFC COMMITTEE AS SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART III – IFC

Revise as follows:

[F] 909.18.8.2 Qualifications. ~~Special inspection~~ Approved agencies for smoke control shall have expertise in fire protection engineering, mechanical engineering and certification as air balancers.

[F] 909.18.8.3 Reports. A complete report of testing shall be prepared by the ~~special inspector or special inspection approved~~ agency. The report shall include identification of all devices by manufacturer, nameplate data, design values, measured values and identification tag or *mark*. The report shall be reviewed by the responsible *registered design professional* and, when satisfied that the design intent has been achieved, the responsible *registered design professional* shall seal, sign and date the report.

[F] 1705.17.2 Qualifications. ~~Special inspection agencies~~ Special inspectors for smoke control shall have expertise in fire protection engineering, mechanical engineering and certification as air balancers.

Reason: The purpose for the proposal is to update references to “approved agency” throughout the building code. Approved agencies (defined in Section 202) are regularly engaged in conducting tests and employ or retain special inspectors (also defined in Section 202) who are qualified to perform inspections, including special inspections.

In Section 1704.2.5.2, “registered” is deleted because no purpose is served by requiring a fabricator who is approved by the building official to also be registered with the same building official.

Note that a separate proposal changes “special inspections” to “testing” in the title of Section 909.18.8 and in Section 909.18.8.1.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

PART III – IFC

Committee Action:

Approved as Modified

Modify proposal as follows:

[F] 909.18.8.2 Qualifications. Approved agencies for smoke control testing shall have expertise in fire protection engineering, mechanical engineering and certification as air balancers.

[F] 909.18.8.3 Reports. A complete report of testing shall be prepared by the *approved* agency. The report shall include identification of all devices by manufacturer, nameplate data, design values, measured values and identification tag or *mark*. The report shall be reviewed by the responsible *registered design professional* and, when satisfied that the design intent has been achieved, the responsible *registered design professional* shall seal, sign and date the report.

[F] 1705.17.2 Qualifications. ~~Special inspectors~~ Approved agencies for smoke control testing shall have expertise in fire protection engineering, mechanical engineering and certification as air balancers.

Committee Reason: See S117, Part I. The modification makes an additional correction to “approved agencies”.

Assembly Action:

None

Final Hearing Results

S117-12, Part III

AM

Code Change No: RM96-13 Part I

Original Proposal

Section(s): IFC 605.11.3.2

Proponent: Michael E. Dell'Orfano, South Metro Fire Rescue Authority, representing Fire Marshal's Association of Colorado (mike.dellorfano@southmetro.org)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE INTERNATIONAL FIRE CODE COMMITTEE; PART II WILL BE HEARD BY THE IRC-PLUMBING/MECHANICAL COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR BOTH COMMITTEES.

PART I – INTERNATIONAL FIRE CODE

Revise as follows:

IFC 605.11.3.2 Residential systems for one- and two-family dwellings. Access to residential systems for one- and two-family dwellings shall be provided in accordance with Sections 605.11.3.2.1 through 605.11.3.2.4.

Exception: These requirements shall not apply to structures designed and constructed in accordance with the International Residential Code.

Reason: According to the 2012 IFC Code and Commentary, the requirements of IFC Section 605.11.3.2 are considered construction requirements and, therefore, do not apply to structures built in accordance with the IRC. This has been the source of some confusion, so the exception to Section 605.11.3.2 is proposed to make its applicability clear. Additionally, this proposal adds the language of IFC Section 605.11.3.2 to the IRC so that those structures will also have photovoltaic systems installed with fire department ventilation practices in mind. These requirements are important for effective ventilation techniques as well as firefighter safety.

Cost Impact: The code change proposal will not increase the cost of construction. It only places restrictions on the layout of the rooftop installations.

Public Hearing Results

PART I – IFC

Committee Action:

Approved as Submitted

Committee reason: The committee agreed with the proponent that the code change further clarifies the applicability of the provisions as being to only Group R-3 one- and two-family dwellings buildings constructed under the IBC as established by the approval of code change F72-13.

Assembly Action:

None

Final Hearing Results

RM96-13 Part I

AS

Code Change No: ADM6-13

Original Proposal

Section: PART I - IBC: [A] 101.3; ICCPC: [A] 101.2.2; IFC: [A] 101.3; IFGC: [A] 101.4; IMC: [A] 101.3; IPC: [A] 101.3; IPSDC: [A] 101.6; IPMC: [A] 101.2
PART II – IRC R101.3

THIS IS A 2 PART CODE CHANGE. PART 1 WILL BE HEARD BY THE ADMINISTRATIVE PROVISIONS COMMITTEE AS ONE CODE CHANGE. PART II WILL BE HEARD BY THE RESIDENTIAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Carl F. Baldassarra, representing Rolf Jensen & Associates, Inc.
(cbaldassarra@rjagroup.com)

PART I – IBC; ICCPC; IFC; IFGC; IMC; IPC; IPSDC; IPMC

Revise the International Building Code as follows:

IBC [A] 101.3 Intent. The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, *means of egress* facilities, stability, sanitation, adequate light and ventilation, energy conservation; to safeguard and safety to life and property from fire and other hazards attributed to the built environment; and, to safeguard provide safety to fire fighters and emergency responders during emergency operations.

Revise the International Code Council Performance Code as follows:

ICCPC [A] 101.2.2 Fire. Part III of this code establishes requirements necessary ~~to provide an acceptable level to~~ safeguard of life ~~safety~~ and property ~~protection~~ from the hazards of fire, explosion or dangerous conditions in all facilities, equipment and processes.

Revise the International Fire Code as follows:

IFC [A] 101.3 Intent. The purpose of this code is to establish the minimum requirements consistent with nationally recognized good practice for providing a reasonable level to safeguard of life ~~safety~~ and property ~~protection~~ from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to safeguard provide safety to fire fighters and emergency responders during emergency operations.

Revise the International Fuel Gas Code as follows:

IFGC [A] 101.4 Intent. The purpose of this code is to provide minimum standards to safeguard life ~~or limb~~, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of fuel gas systems.

Revise the International Mechanical Code as follows:

IMC [A] 101.3 Intent. The purpose of this code is to provide minimum standards to safeguard life ~~or limb~~, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of mechanical systems.

Revise the International Plumbing Code as follows:

IPC [A] 101.3 Intent. The purpose of this code is to provide minimum standards to safeguard life ~~or limb~~, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of plumbing equipment and systems.

Revise the International Private Sewage Disposal Code as follows:

IPSDC [A] 101.6 Intent. The purpose of this code is to provide minimum standards to safeguard life ~~or limb~~, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of *private sewage disposal systems*.

Revise the International Property Maintenance Code as follows:

IPMC [A] 101.2 Scope. The provisions of this code shall apply to all existing residential and nonresidential structures and all existing *premises* and constitute minimum requirements and standards for *premises*, structures, equipment and facilities for light, *ventilation*, space, heating, sanitation, protection from the elements, to safeguard life safety, ~~safety~~ from fire and other hazards, and for safe and sanitary maintenance; the responsibility of *owners, operators and occupants*; the *occupancy* of existing structures and *premises*, and for administration, enforcement and penalties.

PART II – IRC

Revise the International Residential Code as follows:

IRC R101.3 Intent. The purpose of this code is to establish minimum requirements to safeguard the public safety, health and general welfare through affordability, structural strength, means of egress facilities, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other hazards attributed to the built environment and to safeguard ~~provide safety to~~ fire fighters and emergency responders during emergency operations.

Reason: The intent of this change is to make a minor, but important, clarification of the intent of the code. The section covering the "intent" of the IBC is often used by attorneys and others outside of the code community as the basis for various legal actions. Therefore, it is important that this section reflects both the intention of the code community and the relative level of safety that is reasonably provided through these regulations.

The proposal includes changes that make the levels of intended "safety" the same to the reader by using the same term "safeguard" (used in the first phrase) in the other two phrases. While the language using the term "safeguard" is, perhaps, somewhat vague, it is better than suggesting absolute "safety" can be provided to any person or property through the provisions of the code. There is no intention to reduce the level of safety provided by the code with this change. All users and beneficiaries of the code will be better served through this clarification.

Cost Impact: This code change proposal will not affect the cost of construction.

Staff Analysis: The section on Intent are also found in IEBC 101.3, IWUIC 101.3, IZC 101.2, IECC C101.3, IECC R101.3 and ISPSC 101.3.

Public Hearing Results

PART I - IADMIN

Committee Action:

Disapproved

Committee Reason: The committee agreed that the scope should be coordinated across the codes, however, they preferred the "reasonable level of life safety" language found in the IFC. The term 'safeguard' is not a match to "provide safety to."

Assembly Action:

None

PART II – IRC

HEARD BY IRC COMMITTEE

Committee Action:

Disapproved

Committee Reason: The committee disapproved this code change proposal because they felt that the term 'safeguards is too vague, as the proponent notes. If the proposed requirements were used relative to emergency responders, they need to be further explained or narrowed.

Assembly Action:

None

Public Comment(s)

Part I - Public Comment:

Carl F. Baldassarra, P.E., representing Rolf Jensen & Associates, Inc., requests Approval as Modified by this Public Comment.

Replace the proposal with the following:

Revise the International Building Code as follows:

IBC [A] 101.3 Intent. The purpose of this code is to establish the minimum requirements to provide a reasonable level of safeguard the public health, safety and general welfare through structural strength, *means of egress* facilities, stability, sanitation, adequate light and ventilation, energy conservation; and safety to life and property from fire and other hazards attributed to the built environment; and, to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.

Revise the International Code Council Performance Code as follows:

ICCPC [A] 101.2.2 Fire. Part III of this code establishes requirements necessary to provide a reasonable ~~an acceptable~~ level of life safety and property protection from the hazards of fire, explosion or dangerous conditions in all facilities, equipment and processes.

Revise the International Fire Code as follows:

IFC [A] 101.3 Intent. The purpose of this code is to establish the minimum requirements consistent with nationally recognized good practice for providing a reasonable level of life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.

Revise the International Fuel Gas Code as follows:

IFGC [A] 101.4 Intent. The purpose of this code is to ~~establish provide~~ minimum standards to provide a reasonable level of safety ~~safeguard life or limb~~, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of fuel gas systems.

Revise the International Mechanical Code as follows:

IMC [A] 101.3 Intent. The purpose of this code is to ~~establish provide~~ minimum standards to provide a reasonable level of safety ~~safeguard life or limb~~, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of mechanical systems.

Revise the International Plumbing Code as follows:

IPC [A] 101.3 Intent. The purpose of this code is to ~~establish provide~~ minimum standards to provide a reasonable level of safety ~~safeguard life or limb~~, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of plumbing equipment and systems.

Revise the International Private Sewage Disposal Code as follows:

IPSDC [A] 101.6 Intent. The purpose of this code is to ~~establish provide~~ minimum standards to provide a reasonable level of safety ~~safeguard life or limb~~, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of *private sewage disposal systems*.

Revise the International Property Maintenance Code as follows:

IPMC [A] 101.2 Scope. The provisions of this code shall apply to all existing residential and nonresidential structures and all existing *premises* and constitute minimum requirements and standards for *premises*, structures, equipment and facilities for light, *ventilation*, space, heating, sanitation, protection from the elements, a reasonable level of life safety, safety from fire and other

hazards, and for a reasonable level of safe and sanitary maintenance; the responsibility of *owners, operators and occupants*; the *occupancy* of existing structures and *premises*, and for administration, enforcement and penalties.

Commenter's Reason: The intent of this change is to make minor, but important, clarifications of the intent of the various ICC codes. It is important that these sections reflect both the intention of the code community and the relative level of safety that is reasonably provided through these regulations in a consistent manner. There is no intention to reduce the level of safety provided by the code with this change. All users and beneficiaries of the code will be better served through this clarification.

This modification addresses the reasons for disapproval of both Part I and Part II at the Code Development Hearing in Dallas. Specifically, the reason for Disapproval of Part I by the Administrative Provisions Committee was published as follows:

The committee agreed that the scope should be coordinated across the codes, however, they preferred the "reasonable level of life safety" language found in the IFC. The term 'safeguard' is not a match to "provide safety to."

Also, the reason for Disapproval of Part II by the International Residential Committee was published as follows:

The committee disapproved this code change proposal because they felt that the term "safeguards" (sic) is too vague, as the proponent notes. If the proposed requirements were used relative to emergency responders, they need to be further explained or narrowed.

As can be seen by the reviewing the revised proposals, the Committees' comments have been addressed and, therefore, the Proponent requests that the proposals for each code be Approved as Modified by this public comment.

Final Hearing Results

**ADM6-13, Part I
ADM6-13, Part II**

**AMPC
D**

Code Change No: ADM21-13

Original Proposal

Section: PART I - IBC 104.8; IEBC 104.8; IFC 103.4, 103.4.1; IFGC 103.4; IMC 103.4; IPC 103.4; IPSDC 103.4; IPMC 103.4; IWUIC 104.3; IZC 104.7;
PART II - IRC 104.8;
PART III - ISPSC 103.4

THIS IS A 3 PART CODE CHANGE. PARTS I WILL BE HEARD BY THE ADMINISTRATIVE PROVISIONS COMMITTEE AS ONE CODE CHANGE. PART II WILL BE HEARD BY THE RESIDENTIAL CODE COMMITTEE. PART III WILL BE HEARD BY THE SWIMMING POOL AND SPA CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Mike Metheny, City of Aspen Colorado, representing Colorado Chapter Code Change Committee

PART I – IBC; IEBC; IFC; IFGC; IMC; IPC; IPSDC; IPMC; IWUIC; IZC

Revise the International Building Code as follows:

IBC [A] 104.8 Liability. The building official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be civilly or criminally rendered liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.

IBC [A] 104.8.1 Legal defense. Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representative of the jurisdiction until the final termination of the proceedings. The building official or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

Revise the International Existing Building Code as follows:

IEBC [A] 104.8 Liability. The code official, member of the Board of Appeals, or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.

IEBC [A] 104.8.1 Legal defense. Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for cost in any action, suit, or proceeding that is instituted in pursuance of the provisions of this code.

Revise the International Fire Code as follows:

IFC [A] 103.4 Liability. The fire code official, member of the board of appeals, officer or employee charged with the enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.

IFC [A] 103.4.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The fire code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code; and any officer of the department of fire prevention, acting in good faith and without malice, shall be free from liability for acts performed under any of its provisions or by reason of any act or omission in the performance of official duties in connection therewith.

Revise the International Fuel Gas Code as follows:

IFGC [A] 103.4 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.

IFGC [A] 103.4.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code.

Revise the International Mechanical Code as follows:

IMC [A] 103.4 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.

IMC [A] 103.4.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code.

Revise the International Plumbing Code as follows:

IPC [A] 103.4 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.

IPC [A] 103.4.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the

provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

Revise the International Private Sewage Disposal Code as follows:

IPSDC [A] 103.4 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.

IPSDC [A] 103.4.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

Revise the International Property Maintenance Code as follows:

IPMC [A] 103.4 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.

IPMC [A] 103.4.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code.

Revise the International Wildland-Urban Interface Code as follows:

IWUIC [A] 104.3 Liability of the code official. The code official, member of the board of appeals or employee charged with the enforcement of this code, acting in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally personally liable for damages that may accrue to persons or property as a result of an act or by reason of an act or omission in the discharge of such duties.

IWUIC [A] 104.3.1 Legal defense. A suit or criminal complaint brought against the code official or employee because of such act or omission performed by the code official or employee in the enforcement of any provision of such codes or other pertinent laws or ordinances implemented through the enforcement of this code or enforced by the code enforcement agency shall be defended by this jurisdiction until final termination of such proceedings, and any judgment resulting there from shall be assumed by this jurisdiction. The code enforcement agency or its parent jurisdiction shall not be held as assuming any liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.

Revise the International Zoning Code as follows:

IZC [A] 104.7 Liability. The code official, or designee, charged with the enforcement of this code, acting in good faith and without malice in the discharge of the duties described in this code, shall not be

personally civilly or criminally liable for any damage that may accrue to persons or property as a result of an act or by reason of an act or omission in the discharge of such duties.

IFGC [A] 104.7.1 Legal defense. A suit or criminal complaint brought against the code official or employee because such act or omission performed by the code official or employee in the enforcement of any provision of such codes or other pertinent laws or ordinances implemented through the enforcement of this code or enforced by the enforcement agency shall be defended by the jurisdiction until final termination of such proceedings, and any judgment resulting therefrom shall be assumed by the jurisdiction.

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating or controlling any building or parcel of land for any damages to persons or property caused by defects, nor shall the enforcement agency or its jurisdiction be held as assuming any such liability by reason of the reviews or permits issued under this code

PART II – IRC

Revise the International Residential Code as follows:

IRC R104.8 Liability. The building official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.

IRC R104.8.1 Legal defense. Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representative of the jurisdiction until the final termination of the proceedings. The building official or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

PART III – ISPSC

Revise the International Swimming Pool and Spa Code as follows:

ISPSC 103.4 Liability. The *code official*, member of the board of appeals or employee charged with the enforcement of this code, while acting for the *jurisdiction* in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.

ISPSC 103.4.1 Legal defense. Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representative of the jurisdiction until the final termination of the proceedings. The *code official* or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

Reason: An Inspector in Colorado was charged with criminally negligent homicide as well as in a civil case as a result of a carbon monoxide poisoning that occurred in 2008. The inspector found that he was not afforded sovereign immunity for criminal charges even though he was acting in good faith and without malice in the discharge of the duties required by the codes. The jurisdiction was forced to go to City Council to request supplemental funding for his defense. The cost to the jurisdiction in defending the case was in excess of \$260,000. The criminal case was eventually dismissed based on a motion that the statute of limitations had run. The criminal case was dismissed on its merits. As code officials we need to know that immunity extends to both criminal and civil actions while discharging our duties and providing for public safety and welfare.

The addition of the title to split the requirements in two parts is for consistency with the IFC.

Cost Impact: This code change proposal will not increase the cost of construction.

Public Hearing Results

PART I - IADMIN

Committee Action:

Approved as Submitted

Committee Reason: The addition of "or criminal complaint" protects code officials during performance of their jobs. The existing language of "lawful discharge of duties" would protect the jurisdiction from being liable if the code official was taking bribes or performing illegal acts.

Assembly Action:

None

PART II – IRC

HEARD BY IRC COMMITTEE

Committee Action:

Approved as Submitted

Committee Reason: The committee approved this proposed code change because they felt that it is important to clearly state the code officials' personal liability and the recourse to personal defense. This is consistent with previous action taken on ADM21 Part I.

Assembly Action:

None

PART III – ISPSC

HEARD BY THE ISPSC COMMITTEE

Committee Action:

Approved as Submitted

Committee Reason: Employees of building departments are doing the best that they can do every day. Such employees should be personally protected against civil and criminal actions while performing their duties.

Assembly Action:

None

Final Hearing Results

ADM21-13, Part I	AS
ADM21-13, Part II	AS
ADM21-13, Part III	AS

Code Change No: ADM22-13

Original Proposal

Section: PART I – IBC: [A] 104.10, [A] 105.1, [A] 106.1, [A] 107.3.4, [A] 110.1, [A] 115.2, 202, 901.5, 1004.3, 1703.4.1, 1703.6, 1703.6.1, 1704.2, 1704.2.4, 1707.1, 1803.6, 3306.8, 3401.2, G104.1, J106.1, K102.3;

ICCPC: [A] 103.3.1, [A] 103.3.1.1, [A] 103.3.1.2, [A] 103.3.1.3, [A] 103.3.1.4, [A] 103.3.1.5, [A] 103.3.1.6, [A] 103.3.1.7, [A] 103.3.1.8, [A] 103.3.1.9, [A] 103.3.4.1.4, [A] 103.3.1.4.6, [A] 103.3.4.2.3, [A] 103.3.8.3, [A] 103.3.9.1.4, [A] 103.3.9.2.3, [A] 103.3.10.1;

IEBC: [A] 104.6, [A] 104.10, [A] 105.1, [A] 106.6, [A] 110.2, [A] 111.3, [A] 114.2, [A] 115.3, [A] 115.4, [A] 116.5, [A] 117.1, [A] 117.3;

IFC: [A] 104.3, [A] 104.3.1, [A] 104.7.2, [A] 105.1.1, [A] 109.2, [A] 109.3.1, [A] 109.3.2, [A] 110.4, [A] 111.2, [A] 112.1;

IFGC: [A] 102.3, [A] 104.4, [A] 105.1, [A] 106.1, [A] 106.3, [A] 108.5, [A] 108.7.2;

IMC: [A] 102.3, [A] 104.4, [A] 105.1, [A] 106.1, [A] 106.3, [A] 108.5, [A] 108.7.2;

IPC: [A] 102.3, [A] 104.4, [A] 105.1, [A] 106.1, [A] 106.3, [A] 108.5, [A] 108.7.2;

IPSDC: [A] 102.5, [A] 104.4, [A] 105.1, [A] 108.5, [A] 108.7.2;

IPMC: [A] 101.2, [A] 102.2, [A] 104.3, [A] 105.1, [A] 107.2, [A] 107.6, [A] 108.2, [A] 108.2.1, [A] 108.3, [A] 108.4, [A] 108.5, [A] 108.6, [A] 109.5, [A] 110.1, [A] 110.3, [A] 112.2;

IWUIC: [A] 101.6, [A] 105.1, [A] 105.2, [A] 109.2.2, [A] 109.3, [A] 109.4.1, [A] 109.4.5.2, [A] 109.4.5.2.1, [A] 109.4.5.3, [A] 109.4.5.4, [A] 113.2, [A] 114.2;

IZC: [A] 103.3, [A] 107.7.3, [A] 109.1

PART II – IECC: C108.2;

PART III – IECC: R108.2;

PART IV – IRC: R104.6, R105.1, R110.3, R111.3, R114.1;

PART V – ISPSC: 102.3, 104.6, 104.8, 105.1, 105.2, 107.5, 107.7.2;

THIS IS A 5 PART CODE CHANGE. PARTS I WILL BE HEARD BY THE ADMINISTRATIVE PROVISIONS COMMITTEE AS ONE CODE CHANGE. PART II WILL BE HEARD BY THE ENERGY CONSERVATION CODE-COMMERCIAL COMMITTEE. PART III WILL BE HEARD BY THE ENERGY CONSERVATION CODE-RESIDENTIAL COMMITTEE. PART IV WILL BE HEARD BY THE RESIDENTIAL CODE COMMITTEE. PART V WILL BE HEARD BY THE SWIMMING POOL AND SPA CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Philip Brazil, P.E., S.E., Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development Committee (pbrazil@reidmiddleton.com)

PART I – IBC; ICCPC; IEBC; IFC; IFGC; IMC; IPC; IPSDC; IPMC; IWUIC; IZC

Revise the International Building Code as follows:

IBC SECTION 202 DEFINITIONS

IBC [A] REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. *A registered design professional engaged by the owner or the owner's authorized agent to review and coordinate certain aspects of the project, as determined by the building official, for compatibility with the design of the building or structure, including submittal documents prepared by others, deferred submittal documents and phased submittal documents.*

Revise the International Building Code as follows:

IBC [A] 104.10 Modifications. Wherever there are practical difficulties involved in carrying out the provisions of this code, the *building official* shall have the authority to grant modifications for individual cases, upon application of the owner or the owner's representative authorized agent, provided the *building official* shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, accessibility, life and fire safety, or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the department of building safety.

IBC [A] 105.1 Required. Any owner or owner's authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the *building official* and obtain the required *permit*.

IBC [A] 106.1 Live loads posted. Where the live loads for which each floor or portion thereof of a commercial or industrial building is or has been designed to exceed 50 psf (2.40 kN/m²), such design live loads shall be conspicuously posted by the owner or the owner's authorized agent in that part of each story in which they apply, using durable signs. It shall be unlawful to remove or deface such notices.

IBC [A] 107.3.4 Design professional in responsible charge. When it is required that documents be prepared by a *registered design professional*, the *building official* shall be authorized to require the owner or the owner's authorized agent to engage and designate on the building *permit* application a *registered design professional* who shall act as the *registered design professional in responsible charge*. If the circumstances require, the owner or the owner's authorized agent shall designate a substitute registered design professional in responsible charge who shall perform the duties required of the original *registered design professional in responsible charge*. The building official shall be notified in writing by the owner or the owner's authorized agent if the *registered design professional in responsible charge* is changed or is unable to continue to perform the duties.

The *registered design professional in responsible charge* shall be responsible for reviewing and coordinating submittal documents prepared by others, including phased and deferred submittal items, for compatibility with the design of the building.

IBC [A] 110.1 General. Construction or work for which a permit is required shall be subject to inspection by the *building official* and such construction or work shall remain accessible and exposed for inspection purposes until *approved*. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the ~~permit applicant~~ owner or the owner's authorized agent to cause the work to remain accessible and exposed for inspection purposes. Neither the *building official* nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

IBC [A] 115.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, ~~or to the owner's~~ authorized agent, or ~~to the person~~ doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work will be permitted to resume.

Revise the International Building Code as follows:

IBC 901.5 Acceptance tests. Fire protection systems shall be tested in accordance with the requirements of this code and the *International Fire Code*. When required, the tests shall be conducted in the presence of the building official. Tests required by this code, the *International Fire Code* and the standards listed in this code shall be conducted at the expense of the owner or the owner's ~~representative~~ authorized agent. It shall be unlawful to occupy portions of a structure until the required fire protection systems within that portion of the structure have been tested and approved.

Revise the International Building Code as follows:

IBC 1004.3 (IFC [B] 1004.3) Posting of occupant load. Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent.

Revise the International Building Code as follows:

IBC 1703.4.1 Research and investigation. Sufficient technical data shall be submitted to the *building official* to substantiate the proposed use of any material or assembly. If it is determined that the evidence submitted is satisfactory proof of performance for the use intended, the *building official* shall approve the use of the material or assembly subject to the requirements of this code. The costs, reports and investigations required under these provisions shall be paid by the ~~applicant~~ owner or the owner's authorized agent.

IBC 1703.6 Evaluation and follow-up inspection services. Where structural components or other items regulated by this code are not visible for *inspection* after completion of a prefabricated assembly, the ~~applicant~~ owner or the owner's authorized agent shall submit a report of each prefabricated assembly. The report shall indicate the complete details of the assembly, including a description of the assembly and its components, the basis upon which the assembly is being evaluated, test results and similar information and other data as necessary for the *building official* to determine conformance to this code. Such a report shall be *approved* by the *building official*.

IBC 1703.6.1 Follow-up inspection. The ~~applicant~~ owner or the owner's authorized agent shall provide for *special inspections* of fabricated items in accordance with Section 1704.2.5.

IBC 1704.2 Special Inspections. Where application is made for construction as described in this section, the owner or the *registered design professional in responsible charge* acting as the owner's authorized agent shall employ one or more *approved agencies* to perform inspections during construction on the types of work listed under Section 1705. These inspections are in addition to the inspections specified in Section 110.

Exceptions:

1. *Special inspections* are not required for construction of a minor nature or as warranted by conditions in the jurisdiction as *approved* by the *building official*.
2. Unless otherwise required by the *building official*, *special inspections* are not required for Group U occupancies that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.
3. Special inspections are not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section 2211.7 or the conventional light-frame construction provisions of Section 2308.

IBC 1704.2.4 Report requirement. Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the *building official*, and to the *registered design professional in responsible charge*. Reports shall indicate that work inspected was or was not completed in conformance to *approved construction documents*. Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the *building official* and to the *registered design professional in responsible charge* prior to the completion of that phase of the work. A final report documenting required *special inspections* and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon prior to the start of work by the ~~applicant and~~ owner or the owner's authorized agent to the *building official*.

IBC 1707.1 General. In the absence of *approved* rules or other *approved* standards, the *building official* shall make, or cause to be made, the necessary tests and investigations; or the *building official* shall accept duly authenticated reports from *approved agencies* in respect to the quality and manner of use of new materials or assemblies as provided for in Section 104.11. The cost of all tests and other investigations required under the provisions of this code shall be borne by the ~~applicant~~ owner or the owner's authorized agent.

Revise the International Building Code as follows:

IBC 1803.6 Reporting. Where geotechnical investigations are required, a written report of the investigations shall be submitted to the *building official* by the owner or owner's authorized agent at the time of *permit* application. This geotechnical report shall include, but need not be limited to, the following information:

1. A plot showing the location of the soil investigations.
2. A complete record of the soil boring and penetration test logs and soil samples.
3. A record of the soil profile.
4. Elevation of the water table, if encountered.
5. Recommendations for foundation type and design criteria, including but not limited to: bearing capacity of natural or compacted soil; provisions to mitigate the effects of expansive soils; mitigation of the effects of liquefaction, differential settlement and varying soil strength; and the effects of adjacent loads.
6. Expected total and differential settlement.
7. Deep foundation information in accordance with Section 1803.5.5.
8. Special design and construction provisions for foundations of structures founded on expansive soils, as necessary.
9. Compacted fill material properties and testing in accordance with Section 1803.5.8.
10. Controlled low-strength material properties and testing in accordance with Section 1803.5.9.

Revise the International Building Code as follows:

IBC 3306.8 Repair, maintenance and removal. Pedestrian protection required by this chapter shall be maintained in place and kept in good order for the entire length of time pedestrians are subject to being endangered. The *owner* or the *owner's* authorized agent, upon the completion of the construction activity, shall immediately remove walkways, debris and other obstructions and leave such public property in as good a condition as it was before such work was commenced.

Revise the International Building Code as follows:

IBC 3401.2 Maintenance. Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices or safeguards which are required by this code shall be maintained in conformance with the code edition under which installed. The owner or the owner's ~~designated~~ authorized agent shall be responsible for the maintenance of buildings and structures. To determine compliance with this subsection, the building official shall have the authority to require a building or structure to be reinspected. The requirements of this chapter shall not provide the basis for removal or abrogation of fire protection and safety systems and devices in existing structures.

Revise the International Building Code as follows:

IBC G104.1 Required. Any person, owner or owner's authorized agent who intends to conduct any development in a flood hazard area shall first make application to the *building official* and shall obtain the required *permit*.

Revise the International Building Code as follows:

IBC J106.1 Maximum slope. The slope of cut surfaces shall be no steeper than is safe for the intended use, and shall be no steeper than two units horizontal to one unit vertical (50-percent slope) unless the owner or the owner's authorized agent furnishes a geotechnical report justifying a steeper slope.

Exceptions:

1. A cut surface shall be permitted to be at a slope of 1.5 units horizontal to one unit vertical (67-percent slope) provided that all of the following are met:
 - 1.1. It is not intended to support structures or surcharges.
 - 1.2. It is adequately protected against erosion.
 - 1.3. It is no more than 8 feet (2438 mm) in height.
 - 1.4. It is approved by the building code official.
 - 1.5. Ground water is not encountered.
2. A cut surface in bedrock shall be permitted to be at a slope of one unit horizontal to one unit vertical (100-percent slope).

Revise the International Building Code as follows:

IBC K102.3 Maintenance. Electrical systems, equipment, materials and appurtenances, both existing and new, and parts thereof shall be maintained in proper operating condition in accordance with the original design and in a safe, hazard-free condition. Devices or safeguards that are required by this code shall be maintained in compliance with the code edition under which installed. The owner or the owner's ~~designated~~ authorized agent shall be responsible for the maintenance of the electrical systems and equipment. To determine compliance with this provision, the *building official* shall have the authority to require that the electrical systems and equipment be reinspected.

Revise the International Code Council Performance Code as follows:

ICCPC [A] 103.3.1 Building owner's or the owner's authorized agent responsibility.

ICCPC [A] 103.3.1.1 Design professional. The owner or the owner's authorized agent shall have the responsibility of retaining and furnishing the services of a design professional, who shall be in responsible charge of preparing and coordinating a complete and comprehensive set of design documents and other services required to prepare reports and other documents in accordance with this code. If the services required by this section are not provided, the use of this code is prohibited.

ICCPC [A] 103.3.1.2 Principal design professional. When the project requires the services of multiple design professionals, a principal design professional shall be retained and furnished, who shall have the contractual responsibility and authority over all required design professional disciplines to prepare and coordinate a complete and comprehensive set of design documents for the project.

ICCPC [A] 103.3.1.3 Peer review. The owner or the owner's authorized agent shall be responsible for retaining and furnishing the services of a design professional or recognized expert, who will perform as a peer reviewer, when required and approved by the code official. See Section 103.3.6.3 of this code.

ICCPC [A] 103.3.1.4 Costs. The costs of all special services, including contract review, when required by the code official, shall be borne by the owner or the owner's authorized agent.

ICCPC [A] 103.3.1.5 Document retention. The owner or the owner's authorized agent shall retain on the premises all documents and reports required by this code and make them available to the code official upon request.

ICCPC [A] 103.3.1.6 Maintenance. The owner or the owner's authorized agent is responsible to operate and maintain a building, structure or facility designed and built under this code in accordance with the bounding conditions and the operations and maintenance manual.

ICCPC [A] 103.3.1.7 Changes. The owner or the owner's authorized agent shall be responsible to ensure that any change to the facility, process or system does not increase the hazard level beyond that originally designed without approval and that all changes shall be documented in accordance with this code.

ICCPC [A] 103.3.1.8 Special expert. Where the scope of work is limited or focused in an area that does not require the services of a design professional or the special knowledge and skills associated with the practice of architecture or engineering, a special expert may be employed by the owner or the owner's authorized agent as the person in responsible charge of the limited or focused activity. It is the intent of this code that the individual shall possess the qualification characteristics required in Appendix D.

ICCPC [A] 103.3.1.9 Occupant requirements. The owner or the owner's authorized agent is responsible and accountable to ensure that all occupants and employees who are required to take certain actions or perform certain functions in accordance with a performance-based design possess the required knowledge and skills and are empowered to perform those actions.

ICCPC [A] 103.3.4.1.4 Deed restriction. Design features with bounding conditions that require continued maintenance or supervision by the owner or the owner's authorized agent throughout the life of the building, facility or process as conditions of compliance with the objectives of this code, shall be recorded as a deed restriction until released by the code official. When required by the code official, the deed restriction shall be modified to reflect specific changes.

ICCPC [A] 103.3.4.1.6 Emergency response capabilities. Design documentation shall clearly describe the level of response expected by emergency responders under the direct control of the owner or the owner's authorized agent. Emergency response capabilities, staffing levels, training requirements and equipment availability shall be documented as a bounding condition.

ICCPC [A] 103.3.4.2.3 Operations and maintenance manual. The operations and maintenance manual shall identify system and component commissioning requirements and the required interactions between these systems. The manual shall identify for the facility owner or the owner's authorized agent and the facility operator those actions that need to be performed on a regular basis to ensure that the components of the performance-based design are in place and operating properly. Furthermore, the operations and maintenance manual shall identify the restrictions or limitations placed upon the use and operation of the facility in order to stay within the bounding conditions of the performance-based design. The operations and maintenance manual shall be submitted at the time of the design documents submittal, unless the code official approves another time based upon the type of project and data needed for a composite review. The operations and maintenance manual shall address but not be limited to the following:

1. Description of critical systems.
2. Description of required system interactions.
3. Occupant responsibilities.
4. Occupant and staff training requirements.
5. Periodic operational requirements.
6. Periodic maintenance requirements.
7. Periodic testing requirements.
8. Limitations on facility operations (due to bounding conditions).
9. Report format for recording maintenance and operation data.
10. System and component commissioning requirements.

ICCPC [A] 103.3.8.3 Deed restrictions. Design features with bounding conditions determined by the design professional to require continued operation and maintenance by the owner or the owner's authorized agent throughout the life of the building as conditions of compliance with the objectives of this code shall be recorded as a deed restriction as required by the code official until released by the code official.

ICCPC [A] 103.3.9.1.4 Revocation and renewal. Failure of the building owner or the owner's authorized agent to demonstrate to the code official that the building is being operated and maintained in compliance with Sections 103.3.1.6 and 103.3.9.1 is cause to revoke or not renew a certificate of occupancy.

ICCPC [A] 103.3.9.2.3 Revocation and renewal. Failure of the owner or the owner's authorized agent to demonstrate compliance with this section is cause to revoke or not renew the certificate of compliance.

ICCPC [A] 103.3.10 Maintenance.

ICCPC [A] 103.3.10.1 Owner's or the owner's authorized agent responsibility. The owner or the owner's authorized agent is responsible for maintaining the building or facility in accordance with the approved documents.

Revise the International Existing Building Code as follows:

IEBC [A] 104.6 Right of entry. Where it is necessary to make an inspection to enforce the provisions of this code, or where the *code official* has reasonable cause to believe that there exists in a structure or upon a premises a condition which is contrary to or in violation of this code which makes the structure or premises unsafe, *dangerous*, or hazardous, the *code official* is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises be unoccupied, the *code official* shall first make a reasonable effort to locate the owner, the owner's authorized agent or other person having charge or control of the structure or premises and request entry. If entry is refused, the *code official* shall have recourse to the remedies provided by law to secure entry.

IEBC [A] 104.10 Modifications. Wherever there are practical difficulties involved in carrying out the provisions of this code, the *code official* shall have the authority to grant modifications for individual cases upon application of the owner or owner's authorized representative, provided the *code official* shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code, and that such modification does not lessen health, accessibility, life and fire safety, or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the Department of Building Safety.

IEBC [A] 105.1 Required. Any owner or owner's authorized agent who intends to *repair*, add to, alter, relocate, demolish, or change the occupancy of a building or to *repair*, install, add, alter, remove, convert, or replace any electrical, gas, mechanical, or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the *code official* and obtain the required permit.

IEBC [A] 106.6 Design professional in responsible charge. When it is required that documents be prepared by a registered design professional, the *code official* shall be authorized to require the owner or the owner's authorized agent to engage and designate on the building permit application a registered design professional who shall act as the *registered design professional in responsible charge*. If the circumstances require, the owner or the owner's authorized agent shall designate a substitute *registered design professional in responsible charge* who shall perform the duties required of the original *registered design professional in responsible charge*. The *code official* shall be notified in writing by the owner or the owner's authorized agent if the *registered design professional in responsible charge* is changed or is unable to continue to perform the duties. The *registered design professional in responsible charge* shall be responsible for reviewing and coordinating submittal documents prepared by others, including phased and deferred submittal items, for compatibility with the design of the building. Where structural observation is required, the inspection program shall name the individual or firms who are to perform structural observation and describe the stages of construction at which structural observation is to occur.

IEBC [A] 110.2 Certificate issued. After the *code official* inspects the building and finds no violations of the provisions of this code or other laws that are enforced by the Department of Building Safety, the *code official* shall issue a certificate of occupancy that shall contain the following:

1. The building permit number.
2. The address of the structure.
3. The name and address of the owner or the owner's authorized agent.
4. A description of that portion of the structure for which the certificate is issued.
5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code for the occupancy and division of occupancy and the use for which the proposed occupancy is classified.
6. The name of the *code official*.
7. The edition of the code under which the permit was issued.
8. The use and occupancy in accordance with the provisions of the *International Building Code*.
9. The type of construction as defined in the *International Building Code*.
10. The design occupant load and any impact the *alteration* has on the design occupant load of the area not within the scope of the work.
11. If fire protection systems are provided, whether the fire protection systems are required.
12. Any special stipulations and conditions of the building permit.

IEBC [A] 111.3 Authority to disconnect service utilities. The *code official* shall have the authority to authorize disconnection of utility service to the building, structure or system regulated by this code and the referenced codes and standards in case of emergency where necessary to eliminate an immediate hazard to life or property or when such utility connection has been made without the approval required by Section 111.1 or 111.2. The *code official* shall notify the serving utility and, wherever possible, the owner or the owner's authorized agent and occupant of the building, structure or service system of the decision to disconnect prior to taking such action. If not notified prior to disconnecting, the owner or occupant of the building, structure or service system shall be notified in writing, as soon as practical thereafter.

IEBC [A] 114.2 Issuance. The stop work order shall be in writing and shall be given to the owner or the owner's authorized agent of the property involved ~~or to the owner's agent~~, or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work will be permitted to resume.

IEBC [A] 115.3 Notice. If an *unsafe* condition is found, the *code official* shall serve on the owner, the owner's authorized agent, or person in control of the structure a written notice that describes the condition deemed *unsafe* and specifies the required *repairs* or improvements to be made to abate the *unsafe* condition, or that requires the *unsafe* building to be demolished within a stipulated time. Such notice shall require the person thus notified to declare immediately to the *code official* acceptance or rejection of the terms of the order.

IEBC [A] 115.4 Method of service. Such notice shall be deemed properly served if a copy thereof is delivered to the owner or the owner's authorized agent personally; sent by certified or registered mail addressed to the owner or the owner's authorized agent at the last known address with the return receipt requested; or delivered in any other manner as prescribed by local law. If the certified or registered letter is returned showing that the letter was not delivered, a copy thereof shall be posted in a conspicuous place in or about the structure affected by such notice. Service of such notice in the foregoing manner upon the owner's authorized agent or upon the person responsible for the structure shall constitute service of notice upon the owner.

IEBC [A] 116.5 Costs of emergency repairs. Costs incurred in the performance of emergency work shall be paid by the jurisdiction. The legal counsel of the jurisdiction shall institute appropriate action against the owner of the premises or the owner's authorized agent where the unsafe structure is or was located for the recovery of such costs.

IEBC [A] 117.1 General. The *code official* shall order the owner of any premises or the owner's authorized agent upon which is located any structure that in the *code official's* judgment is so old, dilapidated, or has become so out of *repair* as to be *dangerous*, unsafe, insanitary, or otherwise unfit for human habitation or occupancy, and such that it is unreasonable to *repair* the structure, to demolish and remove such structure; or if such structure is capable of being made safe by *repairs*, to *repair* and make safe and sanitary or to demolish and remove at the owner's or the owner's authorized agent's option; or where there has been a cessation of normal construction of any structure for a period of more than two years, to demolish and remove such structure.

IEBC [A] 117.3 Failure to comply. If the owner or the owner's authorized agent of a premises fails to comply with a demolition order within the time prescribed, the *code official* shall cause the structure to be demolished and removed, either through an available public agency or by contract or arrangement with private persons, and the cost of such demolition and removal shall be charged against the real estate upon which the structure is located and shall be a lien upon such real estate.

Revise the International Fire Code as follows:

IFC [A] 104.3 Right of entry. Whenever it is necessary to make an inspection to enforce the provisions of this code, or whenever the *fire code official* has reasonable cause to believe that there exists in a building or upon any premises any conditions or violations of this code which make the building or premises unsafe, dangerous or hazardous, the *fire code official* shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed upon the *fire code official* by this code. If such building or premises is occupied, the *fire code official* shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the *fire code official* shall first make a reasonable effort to locate the owner, the owner's authorized agent or other person having charge or control of the building or premises and request entry. If entry is refused, the *fire code official* has recourse to every remedy provided by law to secure entry.

IFC [A] 104.3.1 Warrant. When the *fire code official* has first obtained a proper inspection warrant or other remedy provided by law to secure entry, an owner, the owner's authorized agent or occupant or person having charge, care or control of the building or premises shall not fail or neglect, after proper request is made as herein provided, to permit entry therein by the *fire code official* for the purpose of inspection and examination pursuant to this code.

IFC [A] 104.7.2 Technical assistance. To determine the acceptability of technologies, processes, products, facilities, materials and uses attending the design, operation or use of a building or premises subject to inspection by the *fire code official*, the *fire code official* is authorized to require the owner or owner's authorized agent to provide, without charge to the jurisdiction, a technical opinion and report. The opinion and report shall be prepared by a qualified engineer, specialist, laboratory or fire safety specialty organization acceptable to the *fire code official* and shall analyze the fire safety properties of the design, operation or use of the building or premises and the facilities and appurtenances situated thereon, to recommend necessary changes. The *fire code official* is authorized to require design submittals to be prepared by, and bear the stamp of, a registered design professional.

IFC [A] 105.1.1 Permits required. Any property owner or owner's authorized agent who intends to conduct an operation or business, or install or modify systems and equipment which is regulated by this code, or to cause any such work to be done, shall first make application to the *fire code official* and obtain the required permit.

IFC [A] 109.2 Owner/occupant responsibility. Correction and abatement of violations of this code shall be the responsibility of the owner or the owner's authorized agent. If an occupant creates, or allows to be created, hazardous conditions in violation of this code, the occupant shall be held responsible for the abatement of such hazardous conditions.

IFC [A] 109.3.1 Service. A notice of violation issued pursuant to this code shall be served upon the owner, the owner's authorized agent, operator, occupant or other person responsible for the condition or

violation, either by personal service, mail or by delivering the same to, and leaving it with, some person of responsibility upon the premises. For unattended or abandoned locations, a copy of such notice of violation shall be posted on the premises in a conspicuous place at or near the entrance to such premises and the notice of violation shall be mailed by certified mail with return receipt requested or a certificate of mailing, to the last known address of the *owner*, the owner's authorized agent, or occupant ~~or both~~.

IFC [A] 109.3.2 Compliance with orders and notices. A notice of violation issued or served as provided by this code shall be complied with by the *owner*, the owner's authorized agent, operator, occupant or other person responsible for the condition or violation to which the notice of violation pertains.

IFC [A] 110.4 Abatement. The *owner*, the owner's authorized agent, operator or occupant of a building or premises deemed unsafe by the *fire code official* shall abate or cause to be abated or corrected such unsafe conditions either by repair, rehabilitation, demolition or other *approved* corrective action.

IFC [A] 111.2 Issuance. A stop work order shall be in writing and shall be given to the *owner* of the property, or to the *owner's* authorized agent, or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work is authorized to resume.

IFC [A] 112.1 Authority to disconnect service utilities. The *fire code official* shall have the authority to authorize disconnection of utility service to the building, structure or system in order to safely execute emergency operations or to eliminate an immediate hazard. The *fire code official* shall notify the serving utility and, whenever possible, the *owner* or the owner's authorized agent and occupant of the building, structure or service system of the decision to disconnect prior to taking such action if not notified prior to disconnection. The *owner*, the owner's authorized agent or occupant of the building, structure or service system shall be notified in writing as soon as practical thereafter.

Revise the International Fuel Gas Code as follows:

IFGC [A] 102.3 Maintenance. Installations, both existing and new, and parts thereof shall be maintained in proper operating condition in accordance with the original design and in a safe condition. Devices or safeguards which are required by this code shall be maintained in compliance with the code edition under which they were installed. The owner or the owner's authorized ~~designated~~ agent shall be responsible for maintenance of installations. To determine compliance with this provision, the code official shall have the authority to require an installation to be reinspected.

IFGC [A] 104.4 Right of entry. Whenever it is necessary to make an inspection to enforce the provisions of this code, or whenever the code official has reasonable cause to believe that there exists in a building or upon any premises any conditions or violations of this code that make the building or premises unsafe, dangerous or hazardous, the code official shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed upon the code official by this code. If such building or premises is occupied, the code official shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the code official shall first make a reasonable effort to locate the owner, the owner's authorized agent or other person having charge or control of the building or premises and request entry. If entry is refused, the code official has recourse to every remedy provided by law to secure entry.

When the code official has first obtained a proper inspection warrant or other remedy provided by law to secure entry, an owner, the owner's authorized agent, ~~or~~ occupant or person having charge, care or control of the building or premises shall not fail or neglect, after proper request is made as herein provided, to promptly permit entry therein by the code official for the purpose of inspection and examination pursuant to this code.

IFGC [A] 105.1 Modifications. Whenever there are practical difficulties involved in carrying out the provisions of this code, the code official shall have the authority to grant modifications for individual cases, upon application of the owner or owner's authorized agent ~~representative~~, provided that the code official shall first find that special individual reason makes the strict letter of this code impractical and that

such modification is in compliance with the intent and purpose of this code and does not lessen health, life and fire safety requirements. The details of action granting modifications shall be recorded and entered in the files of the Department of Inspection.

IFGC [A] 106.1 Where required. An owner, owner's authorized agent or contractor who desires to erect, install, enlarge, alter, repair, remove, convert or replace an installation regulated by this code, or to cause such work to be done, shall first make application to the code official and obtain the required permit for the work.

Exception: Where *appliance* and *equipment* replacements and repairs are required to be performed in an emergency situation, the permit application shall be submitted within the next working business day of the Department of Inspection.

IFGC [A] 106.3 Application for permit. Each application for a permit, with the required fee, shall be filed with the code official on a form furnished for that purpose and shall contain a general description of the proposed work and its location. The application shall be signed by the owner or an owner's authorized agent. The permit application shall indicate the proposed *occupancy* of all parts of the building and of that portion of the site or lot, if any, not covered by the building or structure and shall contain such other information required by the code official.

IFGC [A] 108.5 Stop work orders. Upon notice from the code official that work is being done contrary to the provisions of this code or in a dangerous or unsafe manner, such work shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, the owner's authorized agent, or the person doing the work. The notice shall state the conditions under which work is authorized to resume. Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work. Any person who shall continue any work on the system after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable for a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars.

IFGC [A] 108.7.2 Authority to disconnect service utilities. The code official shall have the authority to require disconnection of utility service to the building, structure or system regulated by the technical codes in case of emergency where necessary to eliminate an immediate hazard to life or property. The code official shall notify the serving utility, and wherever possible, the owner or the owner's authorized agent and occupant of the building, structure or service system of the decision to disconnect prior to taking such action. If not notified prior to disconnection, the owner or occupant of the building, structure or service system shall be notified in writing, as soon as practicable thereafter.

Revise the International Mechanical Code as follows:

IMC [A] 102.3 Maintenance. Mechanical systems, both existing and new, and parts thereof shall be maintained in proper operating condition in accordance with the original design and in a safe and sanitary condition. Devices or safeguards which are required by this code shall be maintained in compliance with the code edition under which they were installed. The owner or the owner's authorized designated agent shall be responsible for maintenance of mechanical systems. To determine compliance with this provision, the code official shall have the authority to require a mechanical system to be reinspected.

The inspection for maintenance of HVAC systems shall be done in accordance with ASHRAE/ACCA/ANSI Standard 180.

IMC [A] 104.4 Right of entry. Whenever it is necessary to make an inspection to enforce the provisions of this code, or whenever the code official has reasonable cause to believe that there exists in a building or upon any premises any conditions or violations of this code which make the building or premises unsafe, insanitary, dangerous or hazardous, the code official shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed upon the code official by this code. If such building or premises is occupied, the code official shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the code official shall first make a reasonable effort to locate the owner, the owner's authorized agent or other person having charge or

control of the building or premises and request entry. If entry is refused, the code official has recourse to every remedy provided by law to secure entry.

When the code official has first obtained a proper inspection warrant or other remedy provided by law to secure entry, an owner, the owner's authorized agent or occupant or person having charge, care or control of the building or premises shall not fail or neglect, after proper request is made as herein provided, to promptly permit entry therein by the code official for the purpose of inspection and examination pursuant to this code.

IMC [A] 105.1 Modifications. Whenever there are practical difficulties involved in carrying out the provisions of this code, the code official shall have the authority to grant modifications for individual cases upon application of the owner or owner's authorized agent representative, provided that the code official shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and does not lessen health, life and fire safety requirements. The details of action granting modifications shall be recorded and entered in the files of the mechanical inspection department.

IMC [A] 106.1 When required. An owner, owner's authorized agent or contractor who desires to erect, install, enlarge, alter, repair, remove, convert or replace a mechanical system, the installation of which is regulated by this code, or to cause such work to be done, shall first make application to the code official and obtain the required permit for the work.

Exception: Where *equipment* and *appliance* replacements or repairs must be performed in an emergency situation, the permit application shall be submitted within the next working business day of the department of mechanical inspection.

IMC [A] 106.3 Application for permit. Each application for a permit, with the required fee, shall be filed with the code official on a form furnished for that purpose and shall contain a general description of the proposed work and its location. The application shall be signed by the owner or ~~an~~ the owner's authorized agent. The permit application shall indicate the proposed *occupancy* of all parts of the building and of that portion of the site or lot, if any, not covered by the building or structure and shall contain such other information required by the code official.

IMC [A] 108.5 Stop work orders. Upon notice from the code official that mechanical work is being done contrary to the provisions of this code or in a dangerous or unsafe manner, such work shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, or to the owner's authorized agent, or to the person doing the work. The notice shall state the conditions under which work is authorized to resume. Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work. Any person who shall continue any work on the system after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable for a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars.

IMC [A] 108.7.2 Authority to order disconnection of energy sources. The code official shall have the authority to order disconnection of energy sources supplied to a building, structure or mechanical system regulated by this code, when it is determined that the mechanical system or any portion thereof has become hazardous or unsafe. Written notice of such order to disconnect service and the causes therefor shall be given within 24 hours to the owner, the owner's authorized agent and occupant of such building, structure or premises, provided, however, that in cases of immediate danger to life or property, such disconnection shall be made immediately without such notice. Where energy sources are provided by a public utility, the code official shall immediately notify the serving utility in writing of the issuance of such order to disconnect.

Revise the International Plumbing Code as follows:

IPC [A] 102.3 Maintenance. All plumbing systems, materials and appurtenances, both existing and new, and all parts thereof, shall be maintained in proper operating condition in accordance with the original design in a safe and sanitary condition. All devices or safeguards required by this code shall be maintained in compliance with the code edition under which they were installed.

The owner or the owner's authorized ~~designated~~ agent shall be responsible for maintenance of plumbing systems. To determine compliance with this provision, the code official shall have the authority to require any plumbing system to be reinspected.

IPC [A] 104.4 Right of entry. Whenever it is necessary to make an inspection to enforce the provisions of this code, or whenever the code official has reasonable cause to believe that there exists in any building or upon any premises any conditions or violations of this code that make the building or premises unsafe, insanitary, dangerous or hazardous, the code official shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed upon the code official by this code. If such building or premises is occupied, the code official shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the code official shall first make a reasonable effort to locate the owner, the owner's authorized agent or other person having charge or control of the building or premises and request entry. If entry is refused, the code official shall have recourse to every remedy provided by law to secure entry.

When the code official shall have first obtained a proper inspection warrant or other remedy provided by law to secure entry, no owner, owner's authorized agent, or occupant or person having charge, care or control of any building or premises shall fail or neglect, after proper request is made as herein provided, to promptly permit entry therein by the code official for the purpose of inspection and examination pursuant to this code.

IPC [A] 105.1 Modifications. Whenever there are practical difficulties involved in carrying out the provisions of this code, the code official shall have the authority to grant modifications for individual cases, upon application of the owner or owner's ~~representative~~ authorized agent, provided the code official shall first find that special individual reason makes the strict letter of this code impractical and the modification conforms to the intent and purpose of this code and that such modification does not lessen health, life and fire safety requirements. The details of action granting modifications shall be recorded and entered in the files of the plumbing inspection department.

IPC [A] 106.1 When required. Any owner, owner's authorized agent or contractor who desires to construct, enlarge, alter, repair, move, demolish or change the *occupancy* of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the code official and obtain the required permit for the work.

IPC [A] 106.3 Application for permit. Each application for a permit, with the required fee, shall be filed with the code official on a form furnished for that purpose and shall contain a general description of the proposed work and its location. The application shall be signed by the owner or an owner's authorized agent. The permit application shall indicate the proposed *occupancy* of all parts of the building and of that portion of the site or lot, if any, not covered by the building or structure and shall contain such other information required by the code official.

IPC [A] 108.5 Stop work orders. Upon notice from the code official, work on any plumbing system that is being done contrary to the provisions of this code or in a dangerous or unsafe manner shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, or to the owner's authorized agent, or to the person doing the work. The notice shall state the conditions under which work is authorized to resume. Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work. Any person who shall continue any work in or about the structure after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars.

IPC [A] 108.7.2 Authority to disconnect service utilities. The code official shall have the authority to authorize disconnection of utility service to the building, structure or system regulated by the technical codes in case of an emergency, where necessary, to eliminate an immediate danger to life or property. Where possible, the owner or an owner's authorized agent and occupant of the building, structure or service system shall be notified of the decision to disconnect utility service prior to taking such action. If not notified prior to disconnecting, the owner, an owner's authorized agent or occupant of the building, structure or service systems shall be notified in writing, as soon as practical thereafter.

Revise the International Private Sewage Disposal Code as follows:

IPSDC [A] 102.5 Maintenance. *Private sewage disposal systems*, materials and appurtenances, both existing and new, and all parts thereof shall be maintained in proper operating condition in accordance with the original design in a safe and sanitary condition. Devices or safeguards that are required by this code shall be maintained in compliance with the code edition under which they were installed. The owner or the owner's authorized ~~designated~~ agent shall be responsible for maintenance of *private sewage disposal systems*. To determine compliance with this provision, the code official shall have the authority to require reinspection of any *private sewage disposal system*.

IPSDC [A] 104.4 Right of entry. Whenever it is necessary to make an inspection to enforce the provisions of this code, or whenever the code official has reasonable cause to believe that there exists in any building or upon any premises any conditions or violations of this code that make the building or premises unsafe, insanitary, dangerous or hazardous, the code official shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed on the code official by this code. If such building or premises is occupied, the code official shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the code official shall first make a reasonable effort to locate the owner, the owner's authorized agent or other person having charge or control of the building or premises and request entry. If entry is refused, the code official has recourse to every remedy provided by law to secure entry.

When the code official shall have first obtained a proper inspection warrant or other remedy provided by law to secure entry, no owner, owner's authorized agent or occupant or person having charge, care or control of any building or premises shall fail or neglect, after proper request is made as herein provided, to promptly permit entry therein by the code official for the purpose of inspection and examination pursuant to this code.

IPSDC [A] 105.1 Modifications. Whenever there are practical difficulties involved in carrying out the provisions of this code, the code official shall have the authority to grant modifications for individual cases, upon application of the owner or owner's ~~representative~~ authorized agent provided that the code official shall first find that special individual reason makes the strict letter of this code impractical, the modification is in conformity with the intent and purpose of this code and such modification does not lessen health and fire- and life-safety requirements. The details of action granting modifications shall be recorded and entered in the files of the Private Sewage Disposal Inspection Department.

IPSDC [A] 108.5 Stop work orders. Upon notice from the code official, work on any *private sewage disposal system* that is being done contrary to the provisions of this code or in a dangerous or unsafe manner shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, to the owner's authorized agent or to the person doing the work. The notice shall state the conditions under which work is authorized to resume. Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work. Any person who shall continue any work on the system after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars.

IPSDC [A] 108.7.2 Authority to disconnect service utilities. The code official shall have the authority to authorize disconnection of utility service to the building, structure or system regulated by the technical codes in case of emergency, where necessary, to eliminate an immediate danger to life or property.

Where possible, the owner, the owner's authorized agent and occupant of the building, structure or service system shall be notified of the decision to disconnect utility service prior to taking such action. If not notified prior to disconnecting, the owner or occupant of the building, structure or service systems shall be notified in writing as soon as is practical thereafter.

Revise the International Property Maintenance Code as follows:

IPMC [A] 101.2 Scope. The provisions of this code shall apply to all existing residential and nonresidential structures and all existing *premises* and constitute minimum requirements and standards for *premises*, structures, equipment and facilities for light, *ventilation*, space, heating, sanitation, protection from the elements, life safety, safety from fire and other hazards, and for safe and sanitary maintenance; the responsibility of *owners*, an owner's authorized agent, *operators* and *occupants*; the *occupancy* of existing structures and *premises*, and for administration, enforcement and penalties.

IPMC [A] 102.2 Maintenance. Equipment, systems, devices and safeguards required by this code or a previous regulation or code under which the structure or *premises* was constructed, altered or repaired shall be maintained in good working order. No *owner*, owner's authorized agent, *operator* or *occupant* shall cause any service, facility, equipment or utility which is required under this section to be removed from or shut off from or discontinued for any occupied dwelling, except for such temporary interruption as necessary while repairs or alterations are in progress. The requirements of this code are not intended to provide the basis for removal or abrogation of fire protection and safety systems and devices in existing structures. Except as otherwise specified herein, the *owner* or the *owner's authorized agent* shall be responsible for the maintenance of buildings, structures and *premises*.

IPMC [A] 104.3 Right of entry. Where it is necessary to make an inspection to enforce the provisions of this code, or whenever the *code official* has reasonable cause to believe that there exists in a *structure* or upon a *premises* a condition in violation of this code, the *code official* is authorized to enter the structure or *premises* at reasonable times to inspect or perform the duties imposed by this code, provided that if such *structure* or *premises* is occupied the *code official* shall present credentials to the *occupant* and request entry. If such structure or *premises* is unoccupied, the *code official* shall first make a reasonable effort to locate the *owner*, the owner's authorized agent or other person having charge or control of the *structure* or *premises* and request entry. If entry is refused, the *code official* shall have recourse to the remedies provided by law to secure entry.

IPMC [A] 105.1 Modifications. Whenever there are practical difficulties involved in carrying out the provisions of this code, the *code official* shall have the authority to grant modifications for individual cases upon application of the *owner* or *owner's authorized agent* ~~representative~~, provided the *code official* shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, life and fire safety requirements. The details of action granting modifications shall be recorded and entered in the department files.

IPMC [A] 107.2 Form. Such notice prescribed in Section 107.1 shall be in accordance with all of the following:

1. Be in writing.
2. Include a description of the real estate sufficient for identification.
3. Include a statement of the violation or violations and why the notice is being issued.
4. Include a correction order allowing a reasonable time to make the repairs and improvements required to bring the *dwelling unit* or structure into compliance with the provisions of this code.
5. Inform the property *owner* or the owner's authorized agent of the right to appeal.
6. Include a statement of the right to file a lien in accordance with Section 106.3.

IPMC [A] 107.6 Transfer of ownership. It shall be unlawful for the *owner* of any *dwelling unit* or structure who has received a compliance order or upon whom a notice of violation has been served to sell, transfer, mortgage, lease or otherwise dispose of such *dwelling unit* or structure to another until the

provisions of the compliance order or notice of violation have been complied with, or until such owner or the owner's authorized agent shall first furnish the grantee, transferee, mortgagee or lessee a true copy of any compliance order or notice of violation issued by the *code official* and shall furnish to the *code official* a signed and notarized statement from the grantee, transferee, mortgagee or lessee, acknowledging the receipt of such compliance order or notice of violation and fully accepting the responsibility without condition for making the corrections or repairs required by such compliance order or notice of violation.

IPMC [A] 108.2 Closing of vacant structures. If the structure is vacant and unfit for human habitation and *occupancy*, and is not in danger of structural collapse, the *code official* is authorized to post a placard of condemnation on the *premises* and order the structure closed up so as not to be an attractive nuisance. Upon failure of the owner or the owner's authorized agent to close up the *premises* within the time specified in the order, the *code official* shall cause the *premises* to be closed and secured through any available public agency or by contract or arrangement by private persons and the cost thereof shall be charged against the real estate upon which the structure is located and shall be a lien upon such real estate and may be collected by any other legal resource.

IPMC [A] 108.2.1 Authority to disconnect service utilities. The *code official* shall have the authority to authorize disconnection of utility service to the building, structure or system regulated by this code and the referenced codes and standards set forth in Section 102.7 in case of emergency where necessary to eliminate an immediate hazard to life or property or when such utility connection has been made without approval. The *code official* shall notify the serving utility and, whenever possible, the owner or the owner's authorized agent and *occupant* of the building, structure or service system of the decision to disconnect prior to taking such action. If not notified prior to disconnection the owner, the owner's authorized agent or *occupant* of the building structure or service system shall be notified in writing as soon as practical thereafter.

IPMC [A] 108.3 Notice. Whenever the *code official* has *condemned* a structure or equipment under the provisions of this section, notice shall be posted in a conspicuous place in or about the structure affected by such notice and served on the owner, the owner's authorized agent or the person or persons responsible for the structure or equipment in accordance with Section 107.3. If the notice pertains to equipment, it shall also be placed on the *condemned* equipment. The notice shall be in the form prescribed in Section 107.2.

IPMC [A] 108.4 Placarding. Upon failure of the owner or the owner's authorized agent or person responsible to comply with the notice provisions within the time given, the *code official* shall post on the *premises* or on defective equipment a placard bearing the word "Condemned" and a statement of the penalties provided for occupying the *premises*, operating the equipment or removing the placard.

IPMC [A] 108.5 Prohibited occupancy. Any occupied structure *condemned* and placarded by the *code official* shall be vacated as ordered by the *code official*. Any person who shall occupy a placarded *premises* or shall operate placarded equipment, and any owner, the owner's authorized agent or any person responsible for the *premises* who shall let anyone occupy a placarded *premises* or operate placarded equipment shall be liable for the penalties provided by this code.

IPMC [A] 108.6 Abatement methods. The owner, the owner's authorized agent, operator or *occupant* of a building, *premises* or equipment deemed unsafe by the *code official* shall abate or cause to be abated or corrected such unsafe conditions either by repair, rehabilitation, demolition or other *approved* corrective action.

IPMC [A] 109.5 Costs of emergency repairs. Costs incurred in the performance of emergency work shall be paid by the jurisdiction. The legal counsel of the jurisdiction shall institute appropriate action against the *owner* of the *premises* or the owner's authorized agent where the unsafe structure is or was located for the recovery of such costs.

IPMC [A] 110.1 General. The *code official* shall order the *owner* of any *premises* or the owner's authorized agent, upon which is located any structure, which in the *code official* judgment after review is

so deteriorated or dilapidated or has become so out of repair as to be dangerous, unsafe, insanitary or otherwise unfit for human habitation or occupancy, and such that it is unreasonable to repair the structure, to demolish and remove such structure; or if such structure is capable of being made safe by repairs, to repair and make safe and sanitary, or to board up and hold for future repair or to demolish and remove at the *owner's* option; or where there has been a cessation of normal construction of any structure for a period of more than two years, the *code official* shall order the *owner* or the owner's authorized agent to demolish and remove such structure, or board up until future repair. Boarding the building up for future repair shall not extend beyond one year, unless *approved* by the building official.

IPMC [A] 110.3 Failure to comply. If the *owner* of a *premises* or the owner's authorized agent, fails to comply with a demolition order within the time prescribed, the *code official* shall cause the structure to be demolished and removed, either through an available public agency or by contract or arrangement with private persons, and the cost of such demolition and removal shall be charged against the real estate upon which the structure is located and shall be a lien upon such real estate.

IPMC [A] 112.2 Issuance. A stop work order shall be in writing and shall be given to the *owner* of the property, to the *owner's* authorized agent, or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.

Revise the International Wildland-Urban Interface Code as follows:

IWUIC [A] 101.6 Maintenance. All buildings, structures, landscape materials, vegetation, *defensible space* or other devices or safeguards required by this code shall be maintained in conformance to the code edition under which installed. The owner or the owner's authorized designated agent shall be responsible for the maintenance of buildings, structures, landscape materials and vegetation.

IWUIC [A] 105.1 Practical difficulties. When there are practical difficulties involved in carrying out the provisions of this code, the code official is authorized to grant modifications for individual cases on application in writing by the owner or a duly owner's authorized representative agent. The code official shall first find that a special individual reason makes enforcement of the strict letter of this code impractical, the modification is in conformance to the intent and purpose of this code, and the modification does not lessen any fire protection requirements or any degree of structural integrity. The details of any action granting modifications shall be recorded and entered into the files of the code enforcement agency.

IWUIC [A] 105.2 Technical assistance. To determine the acceptability of technologies, processes, products, facilities, materials and uses attending the design, operation or use of a building or premises subject to the inspection of the code official, the code official is authorized to require the owner, the owner's authorized agent, or the person in possession or control of the building or premises to provide, without charge to the jurisdiction, a technical opinion and report. The opinion and report shall be prepared by a qualified engineer, specialist, laboratory or fire safety specialty organization acceptable to the code official and the or the owner's authorized agent and shall analyze the fire safety of the design, operation or use of the building or premises, the facilities and appurtenances situated thereon and fuel management for purposes of establishing fire hazard severity to recommend necessary changes.

IWUIC [A] 109.2.2 Service of orders and notices. Orders and notices authorized or required by this code shall be given or served on the owner, the owner's authorized agent, operator, occupant or other person responsible for the condition or violation either by verbal notification, personal service, or delivering the same to, and leaving it with, a person of suitable age and discretion on the premises; or, if no such person is found on the premises, by affixing a copy thereof in a conspicuous place on the door to the entrance of said premises and by mailing a copy thereof to such person by registered or certified mail to the person's last known address.

Orders or notices that are given verbally shall be confirmed by service in writing as herein provided.

IWUIC [A] 109.3 Right of entry. Whenever necessary to make an inspection to enforce any of the provisions of this code, or whenever the code official has reasonable cause to believe that there exists in any building or on any premises any condition that makes such building or premises unsafe, the code official is authorized to enter such building or premises at all reasonable times to inspect the same or to perform any duty authorized by this code, provided that if such building or premises is occupied, the code official shall first present proper credentials and request entry; and if such building or premises is unoccupied, the code official shall first make a reasonable effort to locate the owner, the owner's authorized agent, or other persons having charge or control of the building or premises and request entry. If such entry is refused, the code official shall have recourse to every remedy provided by law to secure entry. Owners, the owner's authorized agent, occupants or any other persons having charge, care or control of any building or premises, shall, after proper request is made as herein provided, promptly permit entry therein by the code official for the purpose of inspection and examination pursuant to this code.

IWUIC [A] 109.4.1 General compliance. Orders and notices issued or served as provided by this code shall be complied with by the owner, the owner's authorized agent, operator, occupant or other person responsible for the condition or violation to which the corrective order or notice pertains.

If the building or premises is not occupied, such corrective orders or notices shall be complied with by the owner or the owner's authorized agent.

IWUIC [A] 109.4.5.2 Notice. Where an unsafe condition is found, the code official shall serve on the owner, owner's authorized agent or person in control of the building, structure or premises, a written notice that describes the condition deemed unsafe and specifies the required repairs or improvements to be made to abate the unsafe condition, or that requires the unsafe structure to be demolished within a stipulated time. Such notice shall require the person thus notified, or their designee, to declare within a stipulated time to the code official acceptance or rejection of the terms of the order.

IWUIC [A] 109.4.5.2.1 Method of service. Such notice shall be deemed properly served if a copy thereof is (a) delivered to the owner or the owner's authorized agent personally; (b) sent by certified or registered mail addressed to the owner or the owner's authorized agent at the last known address with the return receipt requested; or (c) delivered in any other manner as prescribed by local law. If the certified or registered letter is returned showing that the letter was not delivered, a copy thereof shall be posted in a conspicuous place in or about the structure affected by such notice. Service of such notice in the foregoing manner upon the owner's authorized agent or upon the person responsible for the structure shall constitute service of notice upon the owner.

IWUIC [A] 109.4.5.3 Placarding. Upon failure of the owner, the owner's authorized agent, or person responsible to comply with the notice provisions within the time given, the code official shall post on the premises or on defective equipment a placard bearing the word "UNSAFE" and a statement of the penalties provided for occupying the premises, operating the equipment or removing the placard.

IWUIC [A] 109.4.5.4 Abatement. The owner, the owner's authorized agent, operator or occupant of a building, structure or premises deemed unsafe by the code official shall abate or correct or cause to be abated or corrected such unsafe conditions either by repair, rehabilitation, demolition or other *approved* corrective action.

IWUIC [A] 113.2 Authority to disconnect service utilities. The code official shall have the authority to authorize disconnection of utility service to the building, structure or system regulated by this code and the referenced codes and standards set forth in Section 102.4 in case of emergency where necessary to eliminate an immediate hazard to life or property or when such utility connection has been made without the release required by Section 113.1. The code official shall notify the serving utility and whenever possible the owner or the owner's authorized agent and occupant of the building, structure or service system of the decision to disconnect prior to taking such action if not notified prior to disconnection. The owner, the owner's authorized agent or occupant of the building, structure or service system shall be notified in writing as soon as practical thereafter.

IWUIC [A] 114.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, to the owner's authorized agent or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work will be permitted to resume.

Revise the International Zoning Code as follows:

IZC [A] 103.3 Maintenance. All buildings or uses, both existing and new, and all parts thereof, shall be maintained. The owner or owner's authorized designated agent shall be responsible for the maintenance of buildings and parcels of land. To determine compliance with this section, the code official shall be permitted to cause any structure or use to be inspected.

IZC [A] 107.7.3 Variance review criteria. The board of adjustment shall be permitted to approve, approve with conditions or deny a request for a variance. Each request for a variance shall be consistent with the following criteria:

1. Limitations on the use of the property due to physical, topographical and geologic features.
2. The grant of the variance will not grant any special privilege to the property owner or the owner's authorized agent.
3. The applicant can demonstrate that without a variance there can be no reasonable use of the property.
4. The grant of the variance is not based solely on economic reasons.
5. The necessity for the variance was not created by the property owner or the owner's authorized agent.
6. The variance requested is the minimum variance necessary to allow reasonable use of the property.
7. The grant of the variance will not be injurious to the public health, safety or welfare.
8. The property subject to the variance request possesses one or more unique characteristics generally not applicable to similarly situated properties.

IZC [A] 109.1 Hearings. Upon receipt of an application in proper form, the code official shall arrange to advertise the time and place of public hearing. Such advertisement shall be given by at least one publication in a newspaper of general circulation within the jurisdiction. Such notice shall state the nature of the request, the location of the property, and the time and place of hearing. Reasonable effort shall also be made to give notice by regular mail of the time and place of hearing to each surrounding property owner or the owner's authorized agent; the extent of the area to be notified shall be set by the code official. A notice of such hearing shall be posted in a conspicuous manner on the subject property.

PART II – IECC-COMMERCIAL

Revise the International Energy Conservation Code-Commercial as follows:

IECC C108.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, or to the owner's authorized agent, or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work will be permitted to resume.

PART III – IECC-RESIDENTIAL

Revise the International Energy Conservation Code-Residential as follows:

IECC R108.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, or to the owner's authorized agent, or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work will be permitted to resume.

PART IV – IRC

Revise the International Residential Code as follows:

IRC R104.6 Right of entry. Where it is necessary to make an inspection to enforce the provisions of this code, or where the *building official* has reasonable cause to believe that there exists in a structure or upon a premises a condition which is contrary to or in violation of this code which makes the structure or premises unsafe, dangerous or hazardous, the *building official* or designee is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises be unoccupied, the *building official* shall first make a reasonable effort to locate the owner, the owner's authorized agent, or other person having charge or control of the structure or premises and request entry. If entry is refused, the *building official* shall have recourse to the remedies provided by law to secure entry.

IRC R105.1 Required. Any owner or owner's authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the *building official* and obtain the required *permit*.

IRC R110.3 Certificate issued. After the *building official* inspects the building or structure and finds no violations of the provisions of this code or other laws that are enforced by the department of building safety, the *building official* shall issue a certificate of occupancy which shall contain the following:

1. The building *permit* number.
2. The address of the structure.
3. The name and address of the owner or the owner's authorized agent.
4. A description of that portion of the structure for which the certificate is issued.
5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code.
6. The name of the *building official*.
7. The edition of the code under which the *permit* was issued.
8. If an automatic sprinkler system is provided and whether the sprinkler system is required.
9. Any special stipulations and conditions of the building *permit*.

IRC R111.3 Authority to disconnect service utilities. The *building official* shall have the authority to authorize disconnection of utility service to the building, structure or system regulated by this code and the referenced codes and standards set forth in Section R102.4 in case of emergency where necessary to eliminate an immediate hazard to life or property or when such utility connection has been made without the approval required by Section R111.1 or R111.2. The *building official* shall notify the serving utility and whenever possible the owner or the owner's authorized agent and occupant of the building, structure or service system of the decision to disconnect prior to taking such action if not notified prior to disconnection. The owner, the owner's authorized agent, or occupant of the building, structure or service system shall be notified in writing as soon as practical thereafter.

IRC R114.1 Notice to owner or the owner's authorized agent. Upon notice from the *building official* that work on any building or structure is being prosecuted contrary to the provisions of this code or in an unsafe and dangerous manner, such work shall be immediately stopped. The stop work order shall be in writing and shall be given to the owner of the property involved, or to the owner's authorized agent or to the person doing the work and shall state the conditions under which work will be permitted to resume.

PART V – ISPCS

Revise the International Swimming Pool and Spa Code as follows:

ISPSC 102.3 Maintenance. All *aquatic vessel* and related mechanical, electrical and plumbing systems, both existing and new, and all parts thereof, shall be maintained in proper operating condition in accordance with the original design in a safe and sanitary condition. All devices or safeguards required by this code shall be maintained in compliance with the code edition under which they were installed.

The *owner* or the *owner's* authorized designated agent shall be responsible for maintenance of all systems. To determine compliance with this provision, the *code official* shall have the authority to require any system to be reinspected.

ISPSC 104.6 Right of entry. Where it is necessary to make an inspection to enforce the provisions of this code, or where the *code official* has reasonable cause to believe that there exists in a structure or upon a premises a condition which is contrary to or in violation of this code which makes the structure or premises unsafe, dangerous or hazardous, the *code official* is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises is unoccupied, the *code official* shall first make a reasonable effort to locate the owner, the owner's authorized agent or other person having charge or control of the structure or premises and request entry. If entry is refused, the *code official* shall have recourse to the remedies provided by law to secure entry.

ISPSC 104.8 Modifications. Wherever there are practical difficulties involved in carrying out the provisions of this code, the *code official* shall have the authority to grant modifications for individual cases, upon application of the owner or owner's authorized agent representative, provided the *code official* shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen sustainability, health, accessibility, life safety and structural requirements. The details of action granting modifications shall be recorded and entered in the files of the department of building safety.

ISPSC 105.1 When required. Any *owner*, or owner's authorized agent who desires to construct, enlarge, alter, *repair*, move, or demolish an *aquatic vessel* or to erect, install, enlarge, alter, repair, remove, convert or replace any system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the *code official* and obtain the required *permit* for the work.

ISPSC 105.2 Application for permit. Each application for a permit, with the required fee, shall be filed with the *code official* on a form furnished for that purpose and shall contain a general description of the proposed work and its location. The application shall be signed by the owner or ~~an~~ the owner's authorized agent. The permit application shall contain such other information required by the *code official*.

ISPSC 107.5 Stop work orders. Upon notice from the *code official*, work on any system that is being done contrary to the provisions of this code or in a dangerous or unsafe manner shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, or to the owner's authorized agent, or to the person doing the work. The notice shall state the conditions under which work is authorized to resume. Where an emergency exists, the *code official* shall not be required to give a written notice prior to stopping the work. Any person who shall continue any work in or about the structure after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars.

ISPSC 107.7.2 Authority to disconnect service utilities. The *code official* shall have the authority to authorize disconnection of utility service to the *aquatic vessel* regulated by the technical codes in case of an emergency, where necessary, to eliminate an immediate danger to life or property. Where possible, the owner or the owner's authorized agent and occupant of the building where the aquatic vessel is located shall be notified of the decision to disconnect utility service prior to taking such action. If not notified prior to disconnecting, the owner or the owner's authorized agent or occupant of the building shall be notified in writing, as soon as practical thereafter.

Reason: The purpose for the proposal is to update the references to “applicant” and “owner” throughout the building code by changing them to the “owner or the owner’s authorized agent” where it is warranted. In Section 110.1, “the permit applicant” is changed to “the owner or the owner’s authorized agent” because the latter should be responsible to keep the work accessible and exposed for inspection. In Sections 1703.4.1 and 1707.1, “the applicant” is changed to “the owner or the owner’s authorized agent” because the latter should be responsible for the costs of required tests, reports and investigations. In Sections 1703.6 and 1704.2.4, “the applicant” is changed to “the owner or the owner’s authorized agent” because the latter should be responsible for submitting required reports to the building official. In Section 1703.6.1, the applicant” is changed to “the owner or the owner’s authorized agent” for consistency with Section 1704.2 that requires the latter to employ the approved agencies. In Section 1803.6, the “owner or authorized agent” is changed to the “permit applicant” because it should be permissible for the latter to submit the geotechnical report with the other submittal documents at the time of permit application.

The 2012 IBC contains additional references to “owner” but, based on the context in which they are used, it is not considered appropriate or useful to revise the language in conjunction with this proposal (e.g., from “the owner” to “the owner or the owner’s authorized agent”). See Sections 101.4.4, 104.6, 111.2, 112.3, 116.3, 116.4, 402.3, 913.4, 1107.4-Exc. 1, 1607.7.4, 3108.2, 3307.1, 3412.4, 3412.4.1, G101.2, G105.6-Item 3, K103.1 and L101.3.

The 2012 IBC contains additional references to “applicant” but, based on the context in which they are used, it is also not considered appropriate or useful to revise the language in conjunction with this proposal (e.g., from “the applicant” to “the owner or the owner’s authorized agent”). See Sections 104.10.1-Item 5, 105.1.1, 105.3, 107.3.1, 109.3, 109.5, 1612.3.1, 1612.3.2, 1704.2.3, 1704.3, G103.3, G103.4, G103.5.1, G103.6, G104.2, G105.7-Item 5 and J104.1.

All instances in the 2012 IBC of “applicant” and “owner,” other than listed above, are included in this proposal.

Cost Impact: The code change proposal will not increase the cost of construction.

Staff analysis: This proposal for IBC indicate a correlative change throughout the code for the changes in Chapter 1. If this proposal is approved, similar revisions will be completed in the other chapters of the codes where the terms similar to “owner and owner’s authorized agent”.

Public Hearing Results

PART I - IADMIN

Committee Action:

Approved as Submitted

Committee Reason: The proposal provides a consistent and proper designation of “owner and owner’s authorized agent” throughout the codes. The proposal will eliminate the confusion called by so many different terms being used in the codes to mean the same person.

Assembly Action:

None

PART II – IECC – Commercial HEARD BY IECC COMMERCIAL COMMITTEE

Committee Action:

Approved as Submitted

Committee Reason: Provides consistency in use of terminology within the code and with the use of the terms in the other International Codes.

Assembly Action:

None

PART III – IECC – Residential HEARD BY IECC RESIDENTIAL COMMITTEE

Committee Action:

Approved as Submitted

Committee Reason: This proposed language would clarify the intent of the code.

Assembly Action:

None

PART IV - IRC HEARD BY IRC COMMITTEE

Committee Action:

Approved as Submitted

Committee Reason: The committee approved this proposed code change because they felt that it clarifies who is referenced and distinguishes authorized as a legal status.

Assembly Action:

None

**PART V - ISPSC
HEARD BY THE ISPSC COMMITTEE**

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement.

Assembly Action:

None

Final Hearing Results

ADM22-13, Part I	AS
ADM22-13, Part II	AS
ADM22-13, Part III	AS
ADM22-13, Part IV	AS
ADM22-13, Part V	AS

Code Change No: ADM23-13

Original Proposal

Section: PART I - IBC: [A] 104.11; IEBC: [A] 104.11 IFC: [A] 104.9; IFGC: [A] 105.2; IMC: [A] 105.2; IPC: [A] 105.2; IPSDC: [A] 105.2; IPMC: [A] 105.2; IWUIC: [A] 105.3
PART II - IRC: R104.11;
PART III - ISPSC 104.9

THIS IS A 3 PART CODE CHANGE. PARTS I WILL BE HEARD BY THE ADMINISTRATIVE PROVISIONS COMMITTEE AS ONE CODE CHANGE. PART II WILL BE HEARD BY THE RESIDENTIAL CODE COMMITTEE. PART III WILL BE HEARD BY THE SWIMMING POOL AND SPA CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Larry Wainright, Qualtim, representing Structural Building Components Association (lwainright@qualtim.com)

PART I – IBC; IEBC; IFC; IFGC; IMC; IPC; IPSDC; IPMC; IWUIC

Revise the International Building Code as follows:

IBC [A] 104.11 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety. Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons the alternative was not approved.

Revise the International Existing Building Code as follows:

IEBC [A] 104.11 Alternative materials, design and methods of construction, and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design, or method of construction shall be approved where the *code official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability, and safety. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons the alternative was not approved.

Revise the International Fire Code as follows:

IFC [A] 104.9 Alternative materials and methods. The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. The *fire code official* is authorized to approve an alternative material or method of construction where the *fire code official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, *fire resistance*, durability and safety. Where the alternative

material, design or method of construction is not approved, the fire code official shall respond in writing, stating the reasons the alternative was not approved.

Revise the International Fuel Gas Code as follows:

IFGC [A] 105.2 Alternative materials, methods, appliances and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material or method of construction shall be *approved* where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons the alternative was not approved.

Revise the International Mechanical Code as follows:

IMC [A] 105.2 Alternative materials, methods, equipment and appliances. The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material or method of construction shall be *approved* where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons the alternative was not approved.

Revise the International Plumbing Code as follows:

IPC [A] 105.2 Alternative materials, methods and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material or method of construction shall be *approved* where the code official finds that the proposed alternative material, method or equipment complies with the intent of the provisions of this code and is at least the equivalent of that prescribed in this code. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons the alternative was not approved.

Revise the International Private Sewage Disposal Code as follows:

IPSDC [A] 105.2 Alternative materials, methods and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material or method of construction shall be approved where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons the alternative was not approved.

Revise the International Property Maintenance Code as follows:

IPMC [A] 105.2 Alternative materials, methods and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material or method of construction shall be *approved* where the *code official* finds that the proposed

design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons the alternative was not approved.

Revise the International Wildland-Urban Interface Code as follows:

IWUIC [A] 105.3 Alternative materials or methods. The code official, in concurrence with approval from the *building official* and fire chief, is authorized to approve alternative materials or methods, provided that the code official finds that the proposed design, use or operation satisfactorily complies with the intent of this code and that the alternative is, for the purpose intended, at least equivalent to the level of quality, strength, effectiveness, fire resistance, durability and safety prescribed by this code. Approvals under the authority herein contained shall be subject to the approval of the *building official* whenever the alternate material or method involves matters regulated by the *International Building Code*.

The code official shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use. The details of any action granting approval of an alternate shall be recorded and entered in the files of the code enforcement agency. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons the alternative was not approved.

PART II – IRC

Revise the International Residential Code as follows:

IRC R104.11 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material, design or method of construction shall be *approved* where the *building official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code. Compliance with the specific performance-based provisions of the International Codes in lieu of specific requirements of this code shall also be permitted as an alternate. Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons the alternative was not approved.

PART III – ISPSC

Revise the International Swimming Pool and Spa Code as follows:

ISPSC 104.9 Alternative materials, methods and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material or method of construction shall be approved where the *code official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, durability and safety. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons the alternative was not approved.

Reason: the language added is similar to that included at 105.3.1 when a permit application is rejected. This proposed change assumes that the non-approval of an alternative method is not the same as the non-approval of a permit, i.e., the permit application may have been approved but an alternative method might not be approved until a later date. However, the reasons for responding to the applicant in writing are the same, as noted in the Commentary to section 105.3.1: 'In order to ensure effective communication and due process of law, the reasons for denial of an application for a permit are required to be in writing. Further, the language is coordinated across all of the I-codes for consistency of enforcement.'

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing Results

PART I - IADMIN

Committee Action:

Approved as Submitted

Committee Reason: The additional language protects the designer, clarifies the decisions and helps in the appeals process. It is good practice for the code official to respond in writing to keep accountability for alternative materials.

Assembly Action:

None

PART II – IRC

HEARD BY IRC COMMITTEE

Committee Action:

Approved as Submitted

Committee Reason: The committee approved this proposed code change because they felt that it is important to know the reason each time there is input given back. This is a learning experience on behalf of the design professional. The design professional understands what needs to be modified so the plans can be approved. It is important to have a paper trail for posterity.

Assembly Action:

None

PART III – ISPSC

HEARD BY THE ISPSC COMMITTEE

Committee Action:

Disapproved

Committee Reason: Requiring written reasons for disapproval for every alternative design, material or method will be a paperwork nightmare for smaller issues. The code official can make the determination as to when a response in writing is prudent.

Assembly Action:

None

Final Hearing Results

ADM23-13, Part I	AS
ADM23-13, Part II	AS
ADM23-13, Part III	D

Code Change No: ADM25-13

Original Proposal

Section: IFC: [A] 105.1.4 (New), [A] 105.1.5 (New)

Proponent: Anthony C. Apfelbeck, CBO, CFPS, City of Altamonte Springs Building/Fire Safety Division, representing self. (ACApfelbeck@Altamonte.org)

Add new text to the International Fire Code as follows:

IFC [A] 105.1.4 Emergency repairs. Where equipment replacement and repairs must be performed in an emergency situation, the permit application shall be submitted within the next working business day to the fire code official

IFC [A] 105.1.5 Repairs. Application or notice to the fire code official is not required for ordinary repairs to structures, equipment or systems. Such repairs shall not include the cutting away of any wall, partition or portion thereof, the removal or change of any required means of egress, or rearrangement of parts of a structure affecting the egress requirements; nor shall any repairs include addition to, alteration of, replace or relocation of any standpipe, fire protection water supply, automatic sprinkler system, fire alarm system or other work affecting fire protection or life safety.

Reason: The proposed Section 105.1.4 and 105.1.5 are identical to Sections 105.2.1 and 105.2.2 of the IBC with the exception that fire code official has replaced the term building official. This provision is needed in the IFC to address situations where emergency repairs and general repairs are required in addition to providing an allowance for ordinary repairs. The need in the IFC is similar to the need in the IBC. Both codes should match with similar provisions and direction to end users in dealing with these two types of issues.

Cost Impact: This code change will reduce the cost of construction. This change will cause both the IBC and IFC to match which will ease compliance and enforcement costs.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The added language will coordinate allowances in the IBC and IFC. This will allow for emergency repairs during non-business hours.

Assembly Action:

None

Final Hearing Results

ADM25-13

AS

Code Change No: ADM26-13

Original Proposal

Section: IFC: [A] 105.1.4 (New), [A] 105.1.4.1 (New); IFGC: [A] 106.1.1 (New), [A] 106.1.2 (New); IMC: [A] 106.1.1 (New), [A] 106.1.2 (New); IPC: [A] 106.1.1 (New), [A] 106.1.2 (New); IPSDC: [A] 106.1.1 (New), [A] 106.1.2 (New)

Proponent: Anthony C. Apfelbeck, CBO, CFPS, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Add new text to the International Fire Code as follows:

IFC [A] 105.1.4 Annual permit. In lieu of an individual construction permit for each alteration to an already approved system or equipment installation, the fire code official is authorized to issue an annual permit upon application therefor to any person, firm or corporation regularly employing one or more qualified tradespersons in the building, structure or on the premises owned or operated by the applicant for the permit.

IFC [A] 105.1.4.1 Annual permit records. The person to whom an annual permit is used shall keep a detailed record of alterations made under such annual permit. The fire code official shall have access to such records at all times or such records shall be filed with the fire code official as designated.

Revise the International Fuel Gas Code as follows:

IFGC [A] 106.1.1 Annual permit. In lieu of an individual construction permit for each alteration to an already approved system or equipment installation, the code official is authorized to issue an annual permit upon application therefor to any person, firm or corporation regularly employing one or more qualified tradespersons in the building, structure or on the premises owned or operated by the applicant for the permit.

IFGC [A] 106.1.2 Annual permit records. The person to whom an annual permit is used shall keep a detailed record of alterations made under such annual permit. The code official shall have access to such records at all times or such records shall be filed with the code official as designated.

Revise the International Mechanical Code as follows:

IMC [A] 106.1.1 Annual permit. In lieu of an individual construction permit for each alteration to an already approved system or equipment installation, the code official is authorized to issue an annual permit upon application therefor to any person, firm or corporation regularly employing one or more qualified tradespersons in the building, structure or on the premises owned or operated by the applicant for the permit.

IMC [A] 106.1.2 Annual permit records. The person to whom an annual permit is used shall keep a detailed record of alterations made under such annual permit. The code official shall have access to such records at all times or such records shall be filed with the code official as designated.

Revise the International Plumbing Code as follows:

IPC [A] 106.1.1 Annual permit. In lieu of an individual construction permit for each alteration to an already approved system or equipment installation, the code official is authorized to issue an annual permit upon application therefor to any person, firm or corporation regularly employing one or more

qualified tradespersons in the building, structure or on the premises owned or operated by the applicant for the permit.

IPC [A] 106.1.2 Annual permit records. The person to whom an annual permit is used shall keep a detailed record of alterations made under such annual permit. The code official shall have access to such records at all times or such records shall be filed with the code official as designated.

Revise the International Private Sewage Disposal Code as follows:

IPSDC [A] 106.1.1 Annual permit. In lieu of an individual construction permit for each alteration to an already approved system or equipment installation, the code official is authorized to issue an annual permit upon application therefor to any person, firm or corporation regularly employing one or more qualified tradespersons in the building, structure or on the premises owned or operated by the applicant for the permit.

IPSDC [A] 106.1.2 Annual permit records. The person to whom an annual permit is used shall keep a detailed record of alterations made under such annual permit. The code official shall have access to such records at all times or such records shall be filed with the code official as designated.

Reason: This proposed language is identical to the current language in section 105.1.1 and 105.1.2 of the IBC with the exception that the title of the code official is changes and that the list of systems have been removed from the types of permits. There is similar language in the IEBC, Section 105.1.1 and 105.1.2. The need for this language in the IFC and other codes is similar to the justification for it being present in the IBC. If annual permits can be issued for MEP system upon approval of the Building Official, annual permits should be able to be issued for fire systems regulated by the IFC upon the approval of the Fire Official.

The idea for this proposal was originally brought up as an issue for the IFC and fire code officials. However, once it was identified that there is Permit section in the IFGC, IMC, IPC and IPSDC, it seemed appropriate to extend this proposal.

Cost Impact: This code change will reduce the cost of construction. In situations where the issuance of annual permit for fire protection systems is appropriate, there will be a direct cost saving to the contractor in avoiding the need for individual permits.

Staff analysis: Permit sections are also found in the IWUIC and Pool codes.

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The additional language to the IFC, IFGC, IMC, IPC and IPSDC will coordinate with provisions in the IBC. This allowance will be handy for projects with continual work. If this option is used, the building owner will be responsible for providing records, such as inspections, so that compliance can be tracked by the jurisdiction.

Assembly Action:

None

Final Hearing Results

ADM26-13

AS

Code Change No: ADM30-13

Original Proposal

Section: PART I - IFC: [A] 105.4.5; IWUIC: [A] 108.10;
PART II - IECC: C103.4;
PART III - IECC: R103.4

THIS IS A 3 PART CODE CHANGE. PARTS I WILL BE HEARD BY THE ADMINISTRATIVE PROVISIONS COMMITTEE AS ONE CODE CHANGE. PART II WILL BE HEARD BY THE ENERGY CONSERVATION CODE-COMMERICAL COMMITTEE. PART III WILL BE HEARD BY THE ENERGY CONSERVATION CODE-RESIDENTIAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Anthony C. Apfelbeck, CBO, CFPS, City of Altamonte Springs Building/Fire Safety Division, representing self. (ACApfelbeck@Altamonte.org)

PART I –IFC; IWUIC

Revise the International Fire Code as follows:

IFC [A] 105.4.5 ~~Corrected documents~~ Amended construction documents. ~~Where field conditions necessitate any substantial change from the approved construction documents, the fire code official shall have the authority to require the corrected construction documents to be submitted for approval. Work shall be installed in accordance with the approved construction documents, and any changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents.~~

Revise the International Wildland-Urban Interface Code as follows:

IWUIC [A] 108.10 Amended construction documents. Work shall be installed in accordance with the approved construction documents, and any changes made during construction that are not in compliance with the *approved* documents shall be resubmitted for approval as an amended set of construction documents.

PART II – IECC-COMMERCIAL

Revise the International Energy Conservation Code-Commercial as follows:

IECC C103.4 Amended construction documents. Work shall be installed in accordance with the approved construction documents, and any changes made during construction that are not in compliance with the *approved* construction documents shall be resubmitted for approval as an amended set of construction documents.

PART III – IECC-RESIDENTIAL

Revise the International Energy Conservation Code-Residential as follows:

IECC R103.4 Amended construction documents. Work shall be installed in accordance with the approved construction documents, and any changes made during construction that are not in compliance with the *approved* construction documents shall be resubmitted for approval as an amended set of construction documents.

Reason: The proposed language is from 107.4 in the IBC which better describes the intent of the section. This proposal correlates the IFC requirement with the IBC so users, contractors and designers are subject to the same code provision in both codes. There is no justification for differing language in the IFC as opposed to the IBC on this topic. The current language in IFC 105.4.5, to submit corrected documents, is too specific based on the sole fact of “when field conditions necessitate. . .” Clearly, this not the only reason that revised construction documents would be needed. As an example, the owner may choose to make a revision, a design professional may value engineer a design or a contractor may change materials from the original approved construction documents. All of these items are reasons that necessitate an amended construction document submittal under the IBC but currently do not under the IFC. This proposal will match the IBC and IFC language is broad enough to addresses any condition that may cause the installation to not be in compliance with the approved construction documents.

Cost Impact: This proposal will not increase the cost of construction. The IBC already requires amended construction documents per this language.

Staff analysis: The proposed language is found in IBC Section 107.4, IEBC Section 106.4 and IRC Section R106.4.

Public Hearing Results

PART I - IADMIN

Committee Action: **Approved as Submitted**

Committee Reason: The proposed language will coordinate the IBC, IFC and IWUIC. The added language will improve consistency in document preparation. There was a suggestion that perhaps the amended construction documents should be for “substantial” rather than “any” changes. This might be interpreted to require revised drawings for minor corrections dealing with construction issues.

Assembly Action: **None**

**PART II – IECC – Commercial
HEARD BY IECC COMMERCIAL COMMITTEE**

Committee Action: **Disapproved**

Committee Reason: The proposal doesn't bring clarity to the code.

Assembly Action: **None**

**PART III – IECC – Residential
HEARD BY IECC RESIDENTIAL COMMITTEE**

Committee Action: **Approved as Submitted**

Committee Reason: This proposed language better states the intent of this section.

Assembly Action: **None**

Public Comment(s)

Part II - Public Comment:

Donald Vigneau, representing Northeast Energy Efficiency Partnerships Inc., requests Approval as Submitted.

Commenter’s Reason: The approvals of ADM 30-13 Parts I & III for IBC, IWUIC and IRC will not be consistent with IECC CE unless this vote is overturned. There is no legitimate reason the provisions in the other codes should not coordinate in the energy code.

Final Hearing Results

ADM30-13, Part I	AS
ADM30-13, Part II	D
ADM30-13, Part III	AS

Code Change No: ADM31-13

Original Proposal

Section: IFC: [A] 105.6.30 (New), [A] 105.6.39

THIS CHANGE WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

Proponent: Chad P. Lawry, Deputy Fire Marshal, Vancouver Fire Department, representing Vancouver Fire Marshal's Office (chad.lawry@cityofvancouver.us)

Revise the International Fire Code as follows:

IFC [A] 105.6 Required operational permits. *(No change to text)*

IFC [A] 105.6.30 Motor fuel-dispensing facilities. *An operational permit is required for the operation of automotive, marine and fleet motor fuel-dispensing facilities.*

(Renumber subsequent sections)

IFC [A] 105.6.39 Repair garages and motor fuel-dispensing facilities. *An operational permit is required for the operation of repair garages and automotive, marine and fleet motor fuel-dispensing facilities.*

Reason: This is a simple division of a combined permit into two separate permits.

Currently the permit provides a perceived "authorization" for one or both regulated activities regardless of which specific activity triggered the permit at the time of the inspection. A permitted repair garage proprietor may believe that after the inspection they are allowed to dispense fuel without permits or inspections.

For example, we had a grocery store in Vancouver Washington with fuel dispensing that used their fire code permit for fuel dispensing to justify conducting automotive repair shop in violation of their certificate of occupancy and local zoning ordinances.

Cost Impact: None

Staff analysis: The section numbering choice is to maintain the alphabetic listing under the operational permits.

Public Hearing Results

Committee Action:
HEARD BY THE IFC COMMITTEE

Approved as Submitted

Committee Reason: The code change provides a needed clarification that a separate operational permit is required to operate a motor fuel-dispensing facility.

Assembly Action:

None

Final Hearing Results

ADM31-13

AS

Code Change No: ADM32-13

Original Proposal

Section: IFC: [A] 105.7.9 (New)

THIS CHANGE WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

Add new text to the International Fire Code as follows:

IFC [A] 105.7.9 Gates and barricades across fire apparatus access roads. A construction permit is required for the installation of or modification of a gate or barricade across a fire apparatus access road.

(ReNUMBER subsequent sections)

Reason: The proposal requires that gates and barricades across fire access lanes require a construction permit. The permit is necessary to provide the fire code official the ability to review and ensure that access requirements are met.

Current code requirements for gates include method of locking/securing the gate or barricade in an approved manner, proper dimensions and opening width of the gate or barricade, and proper devices for operation of the gate or barricade.

Cost Impact: The code change proposal will increase the cost of construction if the jurisdiction requires a fee for the permit.

Public Hearing Results

Committee Action:
HEARD BY THE IFC COMMITTEE

Approved as Submitted

Committee Reason: The code change will provide the fire code official with the needed ability to review plans and specifications for fire apparatus access road gates or barricades.

Assembly Action:

None

Final Hearing Results

ADM32-13

AS

Code Change No: ADM33-13

Original Proposal

Section: IFC: [A] 105.7.11, [A] 105.7.12, [A] 105.7.13, [A] 105.7.14

THIS CHANGE WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

Proponent: Anthony C. Apfelbeck, CBO, CFPS, City of Altamonte Springs Building/Fire Safety Division, representing self. (ACApfelbeck@Altamonte.org)

Revise the International Fire Code as follows:

IFC [A] 105.7.11 LP-gas. A construction permit is required for installation of or modification to an LP-gas system. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

IFC [A] 105.7.12 Private fire hydrants. A construction permit is required for the installation or modification of private fire hydrants. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

IFC [A] 105.7.13 Solar photovoltaic power systems. A construction permit is required to install or modify solar photovoltaic power systems. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

IFC [A] 105.7.14 Spraying or dipping. A construction permit is required to install or modify a spray room, dip tank or booth. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

Reason: The above subcategories of construction permits in 105.7 are the only ones that require a permit for modifications but do not have an exception for routine maintenance in accordance with the code. Other similar sections, such as those for standpipes, in 105.7.15, fire pumps in 105.7.7 and fire alarms in 105.7.6 already provide this exception. The inclusion of the proposed text will make the sections above consistent with the other subcategory language in 105.7.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:
HEARD BY THE IFC COMMITTEE

Approved as Submitted

Committee Reason: The code change provides a needed correlation with other permit sections that exclude maintenance work from the permit requirement.

Assembly Action:

None

Final Hearing Results

ADM33-13

AS

Code Change No: ADM35-13

Original Proposal

Section: IFC: 105.7.13 (New)

THIS CHANGE WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

Proponent: Bob D. Morgan, P.E., Fort Worth Fire Department, representing the Fire Advisory Board to the North Central Texas Council of Governments

Revise as follows:

IFC 105.7.13 Smoke control or exhaust systems. Construction permits are required for installation of or alteration to smoke control or exhaust systems. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

(Renumber subsequent sections)

Reason: Section 105.7.17 adds construction permit requirements for smoke control and exhaust systems, which are required fire protection systems by Chapter 9 of the fire code to ensure proper design and installation of such systems.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action:
HEARD BY THE IFC COMMITTEE

Approved as Modified

Modification:

Further modify the proposal as follows:

IFC 105.7.13 Smoke control or smoke exhaust systems. Construction permits are required for installation of or alteration to smoke control or smoke exhaust systems. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

Committee Reason: The committee agreed that a construction permit is needed to provide the fire code official with the ability to review plans and specifications for new or modified smoke control or smoke exhaust systems. The modification clarifies the text to reduce the likelihood of misapplication of the requirement to ordinary exhaust systems.

Assembly Action:

None

Final Hearing Results

ADM35-13

AM

Code Change No: ADM43-13

Original Proposal

Section: PART I - IFC: [A] 107.2.1, [A] 107.3 (New),
PART II – IFC: 406.2, 408.5.2, 408.10.2, 507.5.2, 507.5.3, 604.3.2, 604.5.1.1, 604.5.2.1, 606.6,
606.15, 609.3.3.3, 703.1, 703.4, 901.6.2, 901.6.2.1, 904.5, 904.6, 904.7, 904.8, 904.9, 904.10,
907.8, 907.8.2, 907.8.5, 909.20.2, 912.6, 913.5, 913.5.2, 913.5.3, 1030.8, 2006.5.3.2.2,
2006.6.4, 2305.2.1, 2306.2.1.1, 2808.6, 5003.2.9, 5003.3.1.1, 5603.2, 5704.2.11.5.1,
5706.5.4.5, 5806.4.8.2; IBC [F] 904.5, 904.6, 904.7, 904.8, 904.9, 904.10

THIS IS A 2 PART CODE CHANGE. PARTS I WILL BE HEARD BY THE ADMINISTRATIVE PROVISIONS COMMITTEE. PART II WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee
(cbaldassarra@rjagroup.com)

PART I – Administration

Revise the International Fire Code as follows:

IFC [A] 107.2 Testing and operation. Equipment requiring periodic testing or operation to ensure maintenance shall be tested or operated as specified in this code.

~~**IFC [A] 107.2.1 Testing and inspection records.** Required test and inspection records shall be available to the *fire code official* at all times or such records as the *fire code official* designates shall be filed with the *fire code official*.~~

IFC [A] ~~107.2.2~~ 107.2.1 Reinspection and testing. (No change to current text)

IFC [A] 107.3 Recordkeeping. A record of the periodic inspections, tests, servicing, and other operations and maintenance shall be maintained on the premises or other *approved* location for a minimum of 3 years, or the interval where a different period of time is specified in this code or referenced standards. Records shall be made available for inspection by the *fire code official*, and a copy of the records shall be provided to the *fire code official* upon request.

The *fire code official* has the authority to prescribe the form and format of such recordkeeping. The *fire code official* has the authority to require that certain required records be filed with the *fire code official*.

(Renumber subsequent sections)

PART II – IFC

Revise the International Fire Code as follows:

IFC 406.2 Frequency. Employees shall receive training in the contents of fire safety and evacuation plans and their duties as part of new employee orientation and at least annually thereafter. Records of training shall be kept and made available to the *fire code official* upon request maintained.

IFC 408.5.2 Staff training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Records of instruction shall be maintained. Such instruction shall be

reviewed by the staff at least every two months. A copy of the plan shall be readily available at all times within the facility.

IFC 408.10.2 Staff training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Records of instruction shall be maintained. Such instruction shall be reviewed by the staff at least every two months. A copy of the plan shall be readily available at all times within the facility.

Revise the International Fire Code as follows:

IFC 507.5.2 Inspection, testing and maintenance. Fire hydrant systems shall be subject to periodic tests as required by the *fire code official*. Fire hydrant systems shall be maintained in an operative condition at all times and shall be repaired where defective. Additions, repairs, *alterations* and servicing shall comply with *approved* standards. Records of tests and required maintenance shall be maintained.

IFC 507.5.3 Private fire service mains and water tanks. Private fire service mains and water tanks shall be periodically inspected, tested and maintained in accordance with NFPA 25 at the following intervals:

1. Private fire hydrants (all types): Inspection annually and after each operation; flow test and maintenance annually.
2. Fire service main piping: Inspection of exposed, annually; flow test every 5 years.
3. Fire service main piping strainers: Inspection and maintenance after each use.

Records of inspections, testing and maintenance shall be maintained.

Revise the International Fire Code as follows:

IFC 604.3.2 ~~Written record~~ Records. ~~Written records~~ Records of the inspection, testing and maintenance of emergency and standby power systems shall include the date of service, name of the servicing technician, a summary of conditions noted and a detailed description of any conditions requiring correction and what corrective action was taken. Such records shall be ~~kept on the premises served by the emergency or standby power system and be available for inspection by the fire code official~~ maintained.

IFC 604.5.1.1 Activation test record. ~~Records of tests shall be maintained on the premises for a minimum of three years and submitted to the fire code official upon request.~~ The record shall include the location of the emergency lighting tested, whether the unit passed or failed, the date of the test, and the person completing the test.

IFC 604.5.2.1 Power test record. ~~Records of tests shall be maintained on the premises for a minimum of three years and submitted to the fire code official upon request.~~ The record shall include the location of the emergency lighting tested, whether the unit passed or failed, the date of the test, and the person completing the test.

IFC 606.6 Testing of equipment. Refrigeration equipment and systems having a refrigerant circuit containing more than 220 pounds (100 kg) of Group A1 or 30 pounds (14 kg) of any other group refrigerant shall be subject to periodic testing in accordance with Section 606.6.1. ~~A written record of required testing~~ Records of tests shall be maintained ~~on the premises.~~ Tests of emergency devices or systems required by this chapter shall be conducted by persons trained and qualified in refrigeration systems.

IFC 606.15 Records. ~~A written record shall be kept of refrigerant quantities brought into and removed from the premises shall be maintained. Such records shall be available to the fire code official.~~

IFC 609.3.3.3 Records. Records for inspections shall state the individual and company performing the inspection, a description of the inspection and when the inspection took place. Records for cleanings shall

state the individual and company performing the cleaning and when the cleaning took place. Such records shall be completed after each inspection or cleaning, and maintained on the premises for a minimum of three years and be copied to the fire code official upon request.

Revise the International Fire Code as follows:

IFC 703.1 Maintenance. The required *fire-resistance rating* of fire-resistance-rated construction (including walls, firestops, shaft enclosures, partitions, *smoke barriers*, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members and fire-resistant joint systems) shall be maintained. Such elements shall be visually inspected by the *owner* annually and properly repaired, restored or replaced when damaged, altered, breached or penetrated. Records of inspections and repairs shall be maintained. Where concealed, such elements shall not be required to be visually inspected by the *owner* unless the concealed space is accessible by the removal or movement of a panel, access door, ceiling tile or similar movable entry to the space. Openings made therein for the passage of pipes, electrical conduit, wires, ducts, air transfer openings and holes made for any reason shall be protected with *approved* methods capable of resisting the passage of smoke and fire. Openings through fire-resistance-rated assemblies shall be protected by self- or automatic- closing doors of *approved* construction meeting the fire protection requirements for the assembly.

IFC 703.4 Testing. Horizontal and vertical sliding and rolling fire doors shall be inspected and tested annually to confirm proper operation and full closure. ~~A written record~~ Records of inspections and testing shall be maintained and be available to the fire code official.

Revise the International Fire Code as follows:

IFC 901.6.2 Records. Records of all system inspections, tests and maintenance required by the referenced standards shall be maintained ~~on the premises for a minimum of three years and shall be copied to the fire code official upon request.~~

IFC 901.6.2.1 Records information. Initial records shall include the name of the installation contractor, type of components installed, manufacturer of the components, location and number of components installed per floor. Records shall also include the manufacturers' operation and maintenance instruction manuals. Such records shall be maintained ~~on the premises~~ for the life of the installation.

IFC 904.5 (IBC [F] 904.5) Wet-chemical systems. Wet-chemical extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 17A and their listing. Records of inspections and testing shall be maintained.

IFC 904.6 (IBC [F] 904.6) Dry-chemical systems. Dry-chemical extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 17 and their listing. Records of inspections and testing shall be maintained.

IFC 904.7 (IBC [F] 904.7) Foam systems. Foam-extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 11 and NFPA 16 and their listing. Records of inspections and testing shall be maintained.

IFC 904.8 (IBC [F] 904.8) Carbon dioxide systems. Carbon dioxide extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 12 and their listing. Records of inspections and testing shall be maintained.

IFC 904.9 (IBC [F] 904.9) Halon systems. Halogenated extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 12A and their listing. Records of inspections and testing shall be maintained.

IFC 904.10 (IBC [F] 904.10) Clean-agent systems. Clean-agent fire-extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 2001 and their listing. Records of inspections and testing shall be maintained.

IFC 907.8 Inspection, testing and maintenance. The maintenance and testing schedules and procedures for fire alarm and fire detection systems shall be in accordance with Sections 907.8.1 through 907.8.5 and NFPA 72. Records of inspection, testing and maintenance shall be maintained.

IFC 907.8.2 Testing. Testing shall be performed in accordance with the schedules in NFPA 72 or more frequently where required by the *fire code official*. Records of testing shall be maintained.

Exception: Devices or equipment that are inaccessible for safety considerations shall be tested during scheduled shutdowns where *approved* by the *fire code official*, but not less than every 18 months.

IFC 907.8.5 Inspection, testing and maintenance ~~Maintenance, inspection and testing.~~ The building *owner* shall be responsible to maintain the fire and life safety systems in an operable condition at all times. Service personnel shall meet the qualification requirements of NFPA 72 for ~~maintaining, inspecting and testing~~ inspection, testing and maintenance of such systems. ~~A written record~~ Records of inspection, testing and maintenance shall be maintained and shall be made available to the *fire code official*.

IFC 909.20.2 Written record ~~Records.~~ Records of smoke control system testing and maintenance shall be maintained ~~on the premises~~. The ~~written~~ record shall include the date of the maintenance, identification of the servicing personnel and notification of any unsatisfactory condition and the corrective action taken, including parts replaced.

IFC 912.6 Inspection, testing and maintenance. All fire department connections shall be periodically inspected, tested and maintained in accordance with NFPA 25. Records of inspection, testing and maintenance shall be maintained.

IFC 913.5 Inspection, testing and maintenance. Fire pumps shall be inspected, tested and maintained in accordance with the requirements of this section and NFPA 25. Records of inspection, testing and maintenance shall be maintained.

IFC 913.5.2 Generator sets. Engine generator sets supplying emergency or standby power to fire pump assemblies shall be periodically tested in accordance with NFPA 110. Records of testing shall be maintained.

IFC 913.5.3 Transfer switches. Automatic transfer switches shall be periodically tested in accordance with NFPA 110. Records of testing shall be maintained.

Revise the International Fire Code as follows:

IFC 1030.8 Inspection, testing and maintenance. All two-way communication systems for *areas of refuge* shall be inspected and tested on a yearly basis to verify that all components are operational. When required, the tests shall be conducted in the presence of the *fire code official*. Records of inspection, testing and maintenance shall be maintained.

Revise the International Fire Code as follows:

IFC 2006.5.3.2.2 Documentation Records. The airport fueling-system operator shall maintain records of all training administered to its employees. ~~These records shall be made available to the *fire code official* on request.~~

IFC 2006.6.4 Testing. Emergency fuel shutoff devices shall be operationally tested at intervals not exceeding three months. The fueling-system operator shall maintain ~~suitable~~ testing records ~~of these tests~~.

Revise the International Fire Code as follows:

IFC 2305.2.1 Inspections. Flammable and *combustible liquid* fuel-dispensing and containment equipment shall be periodically inspected where required by the *fire code official* to verify that ~~it~~ the equipment is in proper working order and not subject to leakage. Records of inspections shall be maintained.

IFC 2306.2.1.1 Inventory control for underground tanks. Accurate daily inventory records shall be maintained and reconciled on underground fuel storage tanks for indication of possible leakage from tanks and piping. The records ~~shall be kept at the premises or made available for inspection by the fire code official within 24 hours of a written or verbal request~~ and shall include records for each product showing daily reconciliation between sales, use, receipts and inventory on hand. Where there is more than one system consisting of tanks serving separate pumps or dispensers for a product, the reconciliation shall be ascertained separately for each tank system. A consistent or accidental loss of product shall be immediately reported to the *fire code official*.

Revise the International Fire Code as follows:

IFC 2808.6 Static pile protection. Static piles shall be monitored by an *approved* means to measure temperatures within the static piles. Internal pile temperatures shall be monitored and recorded weekly. ~~Such records shall be kept on file at the facility and made available for inspection~~ maintained. An operational plan indicating procedures and schedules for the inspection, monitoring and restricting of excessive internal temperatures in static piles shall be submitted to the *fire code official* for review and approval.

Revise the International Fire Code as follows:

IFC 5003.2.9 Testing. The equipment, devices and systems listed in Section 5003.2.9.1 shall be tested at the time of installation and at one of the intervals listed in Section 5003.2.9.2. ~~Written~~ Records of the tests conducted or maintenance performed shall be maintained.

Exceptions:

1 through 5 (*No change to current text*)

IFC 5003.3.1.1 Records. ~~Accurate records shall be kept~~ Records of the unauthorized discharge of hazardous materials by the permittee shall be maintained.

Revise the International Fire Code as follows:

IFC 5603.2 Transaction record. The permittee shall maintain a record of all transactions involving receipt, removal, use or disposal of *explosive materials*. ~~Such a record~~ records shall be maintained for a period of five years, ~~and shall be furnished to the fire code official for inspection upon request~~.

Exception: Where only Division 1.4G (consumer fireworks) are handled, records need only be maintained for a period of three years.

Revise the International Fire Code as follows:

IFC 5704.2.11.5.1 Inventory control. Daily inventory records ~~shall be maintained~~ for underground storage tank systems shall be maintained.

IFC 5706.5.4.5 Commercial, industrial, governmental or manufacturing. Dispensing of Class II and III motor vehicle fuel from tank vehicles into the fuel tanks of motor vehicles located at commercial, industrial, governmental or manufacturing establishments is allowed where permitted, provided such dispensing operations are conducted in accordance with the following:

1 through 13 (*No change to current text*)

14. Persons responsible for dispensing operations shall be trained in the appropriate mitigating actions in the event of a fire, leak or spill. Training records shall be maintained by the dispensing company ~~and shall be made available to the fire code official upon request.~~

15 through 25 (*No change to current text*)

Revise the International Fire Code as follows:

IFC 5806.4.8.2 Corrosion protection. The vacuum jacket shall be protected by *approved* or *listed* corrosion-resistant materials or an engineered cathodic protection system. Where cathodic protection is utilized, an *approved* maintenance schedule shall be established. Exposed components shall be inspected at least twice a year. ~~Maintenance~~ Records of maintenance and inspection events shall be ~~recorded and those records shall be maintained on the premises for a minimum of three years and made available to the fire code official upon request.~~

Reason: This proposed change is a result of the CTC's investigation of the area of study entitled "NIST Charleston Sofa Store Fire Recommendations". The scope of the activity is noted as:

Review the NIST and other investigative reports on the fire that occurred on the evening of June 18, 2007 in the Sofa Super Store in Charleston, South Carolina to identify issues that can be addressed by the International Codes.

In connection with their investigation, NIST analyzed the fire ground, consulted with other experts, and performed computer simulations of fire growth alternatives. Based on these analyses, NIST concluded that the following sequence of events is likely to have occurred. A fire began in packing material and discarded furniture outside an enclosed loading dock area. The fire spread to the loading dock, then into both the retail showroom and warehouse spaces. During the early stages of the fire in the two latter locations, the fire spread was slowed by the limited supply of fresh air. This under-ventilation led to generation of a large mass of pyrolyzed and only partially oxidized effluent. The smoke and combustible gases flowed into the interstitial space below the roof and above the suspended ceiling of the main retail showroom. As this space filled with unburned fuel, the hot smoke also seeped through the suspended ceiling into the main showroom and formed a hot smoke layer below the suspended ceiling. Up to this time, the extent of fire spread into the interstitial space was not visible to fire fighters in the store. If the fire spread had been visible to the fire fighters in the store, it would have provided a direct indication of a fire hazard in the showroom. Meanwhile, the fire at the back of the main showroom and the gas mixture below the suspended ceiling were both still fuel rich. When the front windows were broken out or vented, the inflow of additional air allowed the heat release rate of the fire to intensify rapidly and added air to the layer of unburned fuel below the suspended ceiling enabling the ignition of the unburned fuel/air mixture. The fire swept from the rear to the front of the main showroom extremely quickly, and then into the west and east showrooms. Nine fire fighters were killed in the Sofa Super Store fire. NIST developed eleven recommendations to help mitigate such future losses.

Recommendation 2(c) of the NIST report recommended that that all state and local jurisdictions implement aggressive and effective fire inspection and enforcement programs that address detailed recordkeeping.

Following a review of recommendation 2(c) of the NIST report, changes are proposed to Section 107.2 and 49 other sections of the International Fire Code that address recordkeeping.

The proposed change to Section 107.2 accomplishes several things with regard to recordkeeping. Most significantly, it standardizes recordkeeping requirements for periodic inspection, testing, servicing and other operational and maintenance requirements of the International Fire Code.

The change to Section 107.2 would now make it clear that records must be maintained on the premises or other approved location and that copies of records must be provided to the fire code official upon request. The change would also make clear that records must be maintained for a period of not less than 3 years unless a different time interval were specified in the code or a referenced standard, and that the fire code official is authorized to prescribe the form and format of such records.

The changes proposed to the other sections of the International Fire Code are intended to make clear what records must be maintained.

This proposal is submitted by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty-five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

Cost Impact: The code change proposed will not increase the cost of construction.

Staff analysis: Recordkeeping of maintenance and inspections is also addressed in the ICCPC, IPC and IWUIC.

Public Hearing Results

PART I - IADMIN

Committee Action:

Approved as Submitted

Committee Reason: This requirement for records allows for a format acceptable to the fire officials and at the same time allows for alternatives. This is the first step towards coordination throughout the IFC requirements for all types of records.

Assembly Action:

None

PART II – IFC

HEARD BY THE IFC COMMITTEE

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed that the code change creates needed standardization of record keeping requirements for periodic inspection, testing, servicing and other operational and maintenance requirements of the IFC, makes it clear that records must be maintained on the premises or other approved location for a period of not less than 3 years and that copies of records must be provided to the fire code official upon request.

Assembly Action:

None

Final Hearing Results

ADM43-13, Part I	AS
ADM43-13, Part II	AS

Code Change No: ADM55-13

Original Proposal

Section: PART I - IBC: 202, IFC: 202, IFGC: 202, IMC: 202, IPC: 202, IPMC: 202, IWUIC: 202
PART II - IECC: C202;
PART III - IECC: R202 (IRC N1101.9);
PART IV - IRC: R202;
PART V - ISPSC 202.

THIS IS A 5 PART CODE CHANGE. PARTS I WILL BE HEARD BY THE ADMINISTRATIVE PROVISIONS COMMITTEE AS ONE CODE CHANGE. PART II WILL BE HEARD BY THE ENERGY CONSERVATION CODE-COMMERCIAL COMMITTEE. PART III WILL BE HEARD BY THE ENERGY CONSERVATION CODE-RESIDENTIAL COMMITTEE. PART IV WILL BE HEARD BY THE RESIDENTIAL CODE COMMITTEE. PART V WILL BE HEARD BY THE SWIMMING POOL AND SPA CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

Proponent: Philip Brazil, P.E., Reid Middletonw, Inc., representing Washington Association of Building Officials, Technical Code Development (pbrazil@reidmiddleton.com)

PART I – IBC; IFC; IFGC; IMC; IPC; IPMC; IWUIC

Revise the International Building Code as follows:

IBC SECTION 202 DEFINITIONS

[A] APPROVED. Acceptable to the *building official* ~~or authority having jurisdiction.~~

[A] PERMIT. An official document or certificate issued by the ~~authority having jurisdiction which~~ building official that authorizes performance of a specified activity.

Revise the International Fire Code as follows:

IFC SECTION 202 DEFINITIONS

[A] APPROVED. Acceptable to the *fire code official*.

[A] PERMIT. An official document or certificate issued by the ~~authority having jurisdiction which~~ fire code official that authorizes performance of a specified activity.

Revise the International Fuel Gas Code as follows:

IFGC SECTION 202 DEFINITIONS

[A] APPROVED. Acceptable to the *code official* ~~or authority having jurisdiction.~~

Revise the International Mechanical Code as follows:

IMC SECTION 202

DEFINITIONS

[A] **APPROVED.** Acceptable to the *code official* ~~or authority having jurisdiction.~~

Revise the International Plumbing Code as follows:

IPC SECTION 202 DEFINITIONS

[A] **APPROVED.** Acceptable to the *code official* ~~or authority having jurisdiction.~~

Revise the International Property Maintenance Code as follows:

IPMC SECTION 202 DEFINITIONS

[A] **APPROVED.** Acceptable to ~~Approved by~~ the *code official*.

Revise the International Wildland-Urban Interface Code as follows:

IWUICC SECTION 202 DEFINITIONS

[A] **APPROVED.** Acceptable to the code official ~~Approval by the code official as the result of review, investigation or tests conducted by the code official or by reason of accepted principles or tests by national authorities, or technical or scientific organizations.~~

PART II – IECC-COMMERCIAL

Revise the International Energy Conservation Code-Commercial as follows:

IECC SECTION C202 GENERAL DEFINITIONS

APPROVED. Acceptable to ~~Approval by~~ the code official ~~as the result of investigation and tests conducted by him or her, or by reason of accepted principles or tests by national recognized organizations.~~

PART III – IECC-RESIDENTIAL

Revise the International Energy Conservation Code-Residential as follows:

IECC SECTION R202 (IRC N1101.9) GENERAL DEFINITIONS

APPROVED. Acceptable to ~~Approval by~~ the code official ~~as the result of investigation and tests conducted by him or her, or by reason of accepted principles or tests by national recognized organizations.~~

PART IV – IRC

Revise the International Residential Code as follows:

IRC SECTION R202 DEFINITIONS

APPROVED. Acceptable to the *building official*.

PERMIT. An official document or certificate issued by the ~~authority having jurisdiction~~ building official that authorizes performance of a specified activity.

PART V – ISPC

Revise the International Swimming Pool and Spa Code as follows:

**ISPC SECTION 202
DEFINITIONS**

APPROVED. Acceptable to the *code official* ~~or authority having jurisdiction~~.

PERMIT. An official document or certificate issued by the ~~authority having jurisdiction~~ building official that authorizes performance of a specified activity.

Reason: The purpose for the proposal is to clarify the meaning of the definitions for “approved” and “permit” by specifying the building official rather than the “authority having jurisdiction.” The provisions of the building code consistently identify the building official as the official in charge of administration and enforcement of the building code. The only instances of “authority having jurisdiction” in the 2012 IBC are in this proposal.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing Results

PART I - IADMIN

Committee Action:

Approved as Submitted

Committee Reason: The phrase ‘authority having jurisdiction’ is already addressed in the definition for code official, therefore, it can be removed from the definition for the term permit and approved. This revision would coordinate the codes and is preferred to the options for the term ‘approved’ offered in ADM53 and ADM 54.

Assembly Action:

None

**PART II – IECC – Commercial
HEARD BY IECC COMMERCIAL COMMITTEE**

Committee Action:

Disapproved

Committee Reason: Current text provides the code official guidance regarding what approved means and how something is ‘approved’. This proposal removes that guidance.

Assembly Action:

None

**PART III – IECC – Residential
HEARD BY IECC RESIDENTIAL COMMITTEE**

Committee Action:

Disapproved

Committee Reason: The proposed text would diminish guidance to the code official regarding needed information for approval.

Assembly Action:

None

**PART IV - IRC
HEARD BY IRC COMMITTEE**

Committee Action:

Disapproved

Committee Reason: The committee disapproved this code change proposal because the authority having jurisdiction issues the permit and the building official is the representative of that authority.

Assembly Action: **None**

**PART V - ISPSC
HEARD BY THE ISPSC COMMITTEE**

Committee Action: **Disapproved**

Committee Reason: The permitting of pools might not be controlled by the building official. This proposal removes the flexibility for other authorities having jurisdiction to do permitting and to approve items.

Assembly Action: **None**

Public Comment(s)

Part II - Public Comment:

Maureen Traxler, City of Seattle Department of Planning & Development, representing Washington Association of Building Officials Technical Code Development Committee, requests Approval as Submitted.

Commenter's Reason: This proposal would make the definition of "approved" in the IECC consistent with the definition in the Building, Fire, Fuel Gas, Mechanical, Plumbing, Property Maintenance and Wildland Urban Interface codes as approved in Part I of this proposal. The committees disapproved these 2 parts of the proposal because they felt that building officials need guidance to make approvals. However, the other codes do not include the language the Energy Code Committees found necessary. We can see no reason building officials would need additional guidance to make approvals under the Energy Code. The language provides minimal guidance in any case. It doesn't require anything other than what a building official would normally do. "Accepted principles" and "tests by national recognized organizations" are typical standards for approvals. The deleted language allows "investigations" without defining what constitutes an investigation. Presumably making a phone call or reviewing manufacturer information could be considered investigation.

Part III - Public Comment:

Maureen Traxler, City of Seattle Department of Planning & Development, representing Washington Association of Building Officials Technical Code Development Committee, requests Approval as Submitted.

Commenter's Reason: This proposal would make the definition of "approved" in the IECC consistent with the definition in the Building, Fire, Fuel Gas, Mechanical, Plumbing, Property Maintenance and Wildland Urban Interface codes as approved in Part I of this proposal. The committees disapproved these 2 parts of the proposal because they felt that building officials need guidance to make approvals. However, the other codes do not include the language the Energy Code Committees found necessary. We can see no reason building officials would need additional guidance to make approvals under the Energy Code. The language provides minimal guidance in any case. It doesn't require anything other than what a building official would normally do. "Accepted principles" and "tests by national recognized organizations" are typical standards for approvals. The deleted language allows "investigations" without defining what constitutes an investigation. Presumably making a phone call or reviewing manufacturer information could be considered investigation.

Part IV - Public Comment:

Maureen Traxler, City of Seattle Department of Planning & Development, representing Washington Association of Building Officials Technical Code Development Committee, requests Approval as Submitted.

Commenter's Reason: The provisions of the International Codes consistently identify the building official as the official in charge of administration and enforcement of the codes. See IRC Section 104 reprinted below. The term "authority having jurisdiction" is not defined and is not used anywhere else in the International Codes. Using it in the definition makes code officials vulnerable to challenges to their authority. It's important that the code state clearly and unequivocally that the code official has ultimate authority to make approvals. This change will make the IRC definitions consistent with the definitions in 7 other codes that were approved in Part I— IBC; IFBC; IFGC; IMC; IPC; IPMC; IWUIC.

The reason for disapproval of this part of the proposal misinterprets Chapter 1 of the IRC. Section 104 clearly gives the code official authority sole responsibility to administer this code.

**SECTION R104
DUTIES AND POWERS OF THE BUILDING OFFICIAL**

R104.1 General. The *building official* is hereby authorized and directed to enforce the provisions of this code. The *building official* shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies and procedures shall be in conformance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.

R104.2 Applications and permits. The *building official* shall receive applications, review *construction documents* and issue permits for the erection and alteration of buildings and structures, inspect the premises for which such permits have been issued and enforce compliance with the provisions of this code.

Part V - Public Comment:

Maureen Traxler, City of Seattle Dept of Planning & Development, representing Washington Association of Building Officials Technical Code Development Committee, requests Approval as Modified by this Public Comments.

Modify the proposal as follows:

**ISPSC SECTION 202
DEFINITIONS**

APPROVED. Acceptable to the *code official*.

PERMIT. An official document or certificate issued by the building code official that authorizes performance of a specified activity.

Commenter's Reason: The provisions of the codes consistently identify the code official as the person in charge of administration and enforcement of the codes. See ISPSC Section 104 reprinted below. The term "authority having jurisdiction" is not defined and is not used anywhere else in the International Codes. Using it in the definition makes code officials vulnerable to challenges to their authority. It's important that the code state clearly and unequivocally that the code official has ultimate authority to make approvals and issue permits. This change will make the ISPSC definitions consistent with the definitions in 7 other codes that were approved in Part I— IBC; IFC; IFGC; IMC; IPC; IPMC; IWUIC.

The reason for disapproval of this part of the proposal misinterprets Chapter 1 of the ISPSC. Section 104 clearly gives the code official authority sole authority to administer this code. Even if other agencies issue permits related to pools and spas, the code official retains responsibility for enforcing the ISPSC and issuing permits under the International Codes. If other agencies issue permits in some jurisdictions, the code official, by definition, may authorize others to perform duties. "**CODE OFFICIAL.** The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative." Disapproval of this proposal would result in inconsistency within the ISPSC between the definition and Section 104, as well as making this Code inconsistent with the other codes.

**SECTION 104
DUTIES AND POWERS OF THE CODE OFFICIAL**

104.1 General. The *code official* is hereby authorized and directed to enforce the provisions of this code. The code official shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies and procedures shall be in compliance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.

104.2 Applications and permits. The code official shall receive applications, review construction documents and issue permits for the erection, alteration, demolition and moving of aquatic vessels, related mechanical, electrical, plumbing systems, to inspect the premises for which such permits have been issued and enforce compliance with the provisions of this code.

Final Hearing Results

ADM55-13, Part I	AS
ADM55-13, Part II	D
ADM55-13, Part III	D
ADM55-13, Part IV	D
ADM55-13, Part V	D

Code Change No: ADM62-13

Original Proposal

ADM62-13								
IBC, IECC, IEBC, IFC, IFGC, IgCC, IMC, IPC, IPMC, IRC, and the ISPSC								
<p>The following table provides a comprehensive list of all standards that the respective standards promulgators have indicated have been, or will be, updated from the listing in the 2012 Editions of the International Codes. According to Section 4.5.1 of ICC Council Policy #CP 28, Code Development Policy, the updating of standards referenced by the Codes shall be accomplished administratively by the Administrative code development committee. Therefore, referenced standards that are to be updated for the 2015 edition of any of the I-Codes are listed in this single code change proposal. Note that the table below indicates the change to the standard, and the code or codes in which each standard appears. The list includes standards that the promulgators have already updated or will have updated by December 1, 2014.</p> <p><i>*4.5.1 Standards referenced in the I-Codes: The updating of standards referenced by the Codes shall be accomplished administratively by the Administrative code development committee in accordance with these full procedures except that the deadline for availability of the updated standard and receipt by the Secretariat shall be December 1 of the third year of each code cycle. The published version of the new edition of the Code which references the standard will refer to the updated edition of the standard. If the standard is not available by the deadline, the edition of the standard as referenced by the newly published Code shall revert back to the reference contained in the previous edition and an errata to the Code issued. Multiple standards to be updated may be included in a single proposal.</i></p>								
AA		Aluminum Association						
Standard Reference Number	Title	Referenced in Code(s):						
ADM 1-2010 2015	Aluminum Design Manual: Part I Specification for Aluminum Structures	IBC						
AAMA		American Architectural Manufacturers Association						
Standard Reference Number	Title	Referenced in Code(s):						
450-09 10	Voluntary Performance Rating Method for Muller Fenestration Assemblies	IRC						
506-08 11	Voluntary Specifications for Hurricane Impact and Cycle Testing of Fenestration Products	IRC						
711-07 13	Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products	IRC						
1402-86 09	Standard Specification for Aluminum Siding, Soffit and Fascia	IBC						

ACCA		Air Conditioning Contractors of America						
Standard Reference Number	Title	Referenced in Code(s):						
Manual D-09 <u>2011</u>	Residential Duct Systems	IMC	IRC					
Manual J- 2011	Residential Load Calculation - Eighth Edition	IRC	IECC-R					
Manual S- 40 <u>13</u>	Residential Equipment Selection	IRC	IECC-R					
180- 2008 <u>2012</u>	Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems	IMC	IRC					
183-2007 (reaffirmed 2011)	Peak Cooling and Heating Load Calculations in Buildings Except Low-Rise Residential Buildings	IMC	IECC					
ACI		American Concrete Institute						
Standard Reference Number	Title	Referenced in Code(s):						
216.1- 07 <u>14</u>	Standard Method Code Requirements for Determining Fire Resistance of Concrete and Masonry Construction Assemblies	IBC						
304.2R- 04 <u>96</u>	Placing Concrete by Pumping Methods (Reapproved 2008)	ISPSC						
305.1- 06 <u>14</u>	Specification for Hot Weather Concreting	ISPSC						
308.1- 98 <u>11</u>	Standard Specification for Curing Concrete	ISPSC						
318-44 <u>14</u>	Building Code Requirements for Structural Concrete	IBC	IRC	ISPSC				
332- 40 <u>14</u>	Residential Code Requirements for Structural Concrete Construction	IRC						
506.2- 95 <u>13</u>	Specification for Shotcrete	ISPSC						
530-44 <u>13</u>	Building Code Requirements for Masonry Structures	IBC	IRC					
530.1-44 <u>13</u>	Specifications for Masonry Structures	IBC	IRC					
AF&PA AWC		American Forest & Paper Association American Wood Council						
Standard Reference Number	Title	Referenced in Code(s):						
AF&PA AWC STJR— 2012 <u>2015</u>	Span Tables for Joists and Rafters	IBC	IRC					
ANSI/AF&PA AWC WFCM— 2012 <u>2015</u>	Wood Frame Construction Manual for One- and Two-Family Dwellings	IBC	IRC					
ANSI/AWC NDS- 2012 <u>2015</u>	National Design Specification (NDS) for Wood Construction - with 2012 Supplement	IBC	IRC					
ANSI/AF&PA AWC SDPWS— 2008 <u>2015</u>	Special Design Provisions for Wind and Seismic	IBC						
AF&PA AWC WCD No. 4-2003	Wood Construction Data-Plank and Beam Framing for Residential Buildings	IBC						

ANSI/AF&PA- AWC PWF—2007-2015	Permanent Wood Foundation Design Specification	IBC	IRC						
AHRI	Air Conditioning, Heating and Refrigeration Institute								
Standard Reference Number	Title	Referenced in Code(s):							
210/240-2008 <u>with Addenda 1 and 2</u>	<u>Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment</u>	IECC-C							
310/380-2004 (CSA - C744-04)	Standard for Packaged Terminal Air-Conditioners and Heat Pumps	IECC-C							
340/360-2007 <u>with Addendum 2</u>	<u>Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment</u>	IECC-C							
365 (I-P)-2009	Commercial and Industrial Unitary Air-Conditioning Condensing Units	IECC-C							
366 (SI)-2009	Commercial and Industrial Unitary Air-Conditioning Condensing Units	IECC-C							
400-2001 <u>with Addenda 1 and 2</u>	Liquid to Liquid Heat Exchangers <u>with Addendum 2</u>	IECC-C							
440-2008	<u>Performance Rating of Room Fan-Coils</u>	IECC-C							
460-2005	<u>Performance Rating of Remote Mechanical-Draft Air-Cooled Refrigerant Condensers</u>	IECC-C							
550/590-03 2011 <u>with Addendum 1</u>	<u>Performance Rating of Water-Chilling Packages and Heat Pump Water-Heating Packages Using the Vapor Compression Cycle with Addenda</u>	IECC-C							
700- 2006 2011 <u>with Addendum 1</u>	<u>Purity Specifications for Fluorocarbon and Other Refrigerants</u>	IECC-C							
870-2009 05	<u>Performance Rating of Direct Geexchange Heat Pumps</u>	IECC-C							
1160-08 (I-P) 09	Performance Rating of Heat Pump z21.56	IECC-C	ISPSC						
11601 (SI)- 08 -2011	Performance Rating of Heat Pump Pool Heaters	IECC-C	ISPSC						
13256-1(2005) (2011)	Water-Source Heat Pumps— Water-to-Air and Brine-to-Air Heat Pumps – Testing and Rating for Performance: Part 1—	IECC-C							
13256-2(1998) (2011)	Water-source Heat Pumps Water-to-Water and Brine-to-water Heat Pumps - Testing and Rating For Performance: Part 2:	IECC-C							

AISI									
American Iron and Steel Institute									
Standard Reference Number	Title	Referenced in Code(s):							
<u>AISI S100-07/S2-40 12</u>	North American Specification for the Design of Cold Formed Steel Structural Members with Supplement 2, dated 2010 <u>Supplement 2, dated 2012</u>	IBC	IRC						
<u>AISI S110-07/S1-09 (2012)</u>	Standard for Seismic Design of Cold-Formed Steel Structural Systems-Special Moment Frames, <u>2007</u> with Supplement 1, dated 2009, <u>(2012)</u>	IBC							
<u>AISI S200-07 2012</u>	North American Standard for Cold-Formed Steel Framing - General Provisions	IBC							
<u>AISI S210-07 2012</u>	North American Standard for Cold-formed Steel Framing-Floor and Roof System Design, <u>2007</u> , <u>(2012)</u>	IBC							
<u>AISI S211-07/S1-12 (2012)</u>	North American Standard for Cold-Formed Steel Framing-Wall Stud Design, <u>2007</u> , including Supplement 1, dated 2012, <u>(2012)</u>	IBC							
<u>AISI S212-07 (2012)</u>	North American Standard for Cold-Formed Steel Framing-Header Design, <u>2007</u> , <u>(2012)</u>	IBC							
<u>AISI S213-07/S1-09 (2012)</u>	North American Standard for Cold-Formed Steel Framing-Lateral Design, with Supplement 1, dated 2009, <u>(2012)</u>	IBC							
<u>AISI S214-07 12</u>	North American Standard for Cold-Formed Steel Framing - Truss Design with Supplement 2, dated 2008 , <u>2012</u>	IBC							
<u>AISI S230-07-07/S2-08/S3-12 (2012)</u>	Standard for Cold-formed Steel Framing-Prescriptive Method for One- and Two-family Dwellings, <u>2007</u> , with Supplement 2 3, dated 2008 dated 2012, <u>(2012)</u>	IRC	IBC						
AITC									
American Institute of Timber Construction (Please note that the AITC is no longer promulgating ICC standards. Standards previously promulgated by AITC are now being handled by APA and WCLIB.)									
Standard Reference Number	Title	Referenced in Code(s):							
ALI									
Automotive Lift Institute									
Standard Reference Number	Title	Referenced in Code(s):							

ALI/ALCTV-2006 2011	Standard for Automotive Lifts - Safety Requirements for Construction, Testing, and Validation (ANSI)	IBC							
AMCA	Air Movement and Control Association International								
Standard Reference Number	Title	Referenced in Code(s):							
205-40 12	Energy Efficiency Classification for Fans	IgCC							
220-05 08	Laboratory Methods of Testing Air Curtain Units for Aerodynamic Performance Rating	IgCC							
500D-40 12	Laboratory Methods for Testing Dampers for Rating	IECC-C							
ANSI	American National Standards Institute								
Standard Reference Number	Title	Referenced in Code(s):							
Z97.1- 09 2014	Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test	IBC	IRC						
ANSI A137.1-88 2012	American National Standard Specifications for Ceramic Tile	IBC	IRC						
Z21.50/CSA 2.22-2007 2012	Vented Gas Fireplaces	IRC	IFGC	IgCC					
Z21.88/CSA 2.33-09 2015	Vented Gas Fireplace Heaters	IRC	IFGC	IgCC					
LC 1/CSA 6.26-2005 2013	Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST)	IFGC							
LC 4/CSA 6.32-2007 2012	Press-Connect Metallic Fittings for Use in Fuel Gas Distribution Systems	IFGC	IRC						
Z21.1-2005 2010	Household Gas Cooking Appliances	IFGC	IRC						
Z21.5.1/CSA 7.1-2006 2014	Gas Clothes Dryers - Volume I - Type 1 Clothes Dryer	IFGC	IRC						
Z21.5.2/CSA 7.2-2005 2014	Gas Clothes Dryers - Volume II - Type 2 Clothes Dryer	IFGC							
Z21.10.1/CSA 4.1-2009 2012	Gas Water Heaters - Volume I - Storage Water Heaters with Input Ratings of 75,000 Btu per Hour or Less	IFGC	IRC						
Z21.10.3/CSA 4.3-2004 2011	Gas Water Heaters - Volume III - Storage Water Heaters with Input Ratings Above 75,000 Btu per Hour, Circulating or Instantaneous	IFGC	IRC						
Z21.11.2-2007 2011	Gas-Fired Room Heaters - Volume II - Unvented Room Heaters	IFGC	IRC						
Z21.13/CSA 4.9-2010 2011	Gas-Fired Low Pressure Steam and Hot Water Boilers	IFGC	IRC						
A21.40.1/CSA 2.91-96 (R2002 2011)	Gas-Fired Heat Activated Air Conditioning and Heat Pump Appliances	IFGC	IRC						
Z21.40.2/CSA 2.92-96 (R2002 2011)	Air-Conditioning and Heat Pump Appliances (Thermal Combustion)	IFGC	IRC						
Z21.42-1993 (R2002) 2014	Gas-Fired Illuminating Appliances	IFGC	IRC						

Z21.47/CSA 2.3-2007 2012	Gas-Fired Central Furnaces	IFGC	IRC						
Z21.50/CSA 2.22-2006 2012	Vented Gas Fireplaces	IFGC	IRC						
Z21.56/CSA 4.7-2007 2013	Gas-Fired Pool Heaters	IFGC	ISPSC	IRC					
Z21.58/CSA 1.6-2003 2013	Outdoor Cooking Gas Appliances	IFGC	IRC						
Z21.60/CSA 2.26-2003 2012	Decorative Gas Appliances for Installation in Solid-fuel Burning Fireplaces	IFGC	IRC						
Z21.80/CSA 6.22-2003 (R2008) 2011	Line Pressure Regulators	IFGC	IRC						
Z21.84-2002 2012	Manually-lighted, Natural Gas Decorative Gas Appliances for Installation in Solid Fuel Burning Fireplaces	IFGC	IRC						
Z21.88/CSA 2.33-2009 2015	Vented Gas Fireplace Heaters	IFGC	IRC						
Z21.97-2009 2012	Outdoor Decorative Appliances	IFGC	IRC						
Z83.4/CSA 3.7-2003 2012	Non-Recirculating Direct Gas-fired Industrial Air Heaters	IFGC							
Z83.6-90 (R1998) withdrawn replaced with Z83.19 & Z83.20	Gas-fired Infrared Heaters	IFGC	IRC						
Z83.11/CSA 1.8-2006 2013	Gas Food Service Equipment	IFGC							
Z83.18-2004 2012	Recirculating Direct Gas-fired Industrial Air Heaters	IFGC							
Z83.19-2001 (R2005 2009)	Gas-fired High Intensity Infrared Heaters	IFGC	IRC						
Z124.1-95-replaced with CSA B45.5-11/ IAPMO Z124-11	Plastic Bathtub Units Plumbing Fixtures	IPC	IRC						
Z124.1.2-2005-replaced with CSA B45.5-11/ IAPMO Z124-11	Plastic Bathtub and Shower Units Plumbing Fixtures	IPC	IRC						
Z124.2-95-replaced with CSA B45.5-11/ IAPMO Z124-11	Plastic Shower Receptors and Shower Stalls Plumbing Fixtures	IPC	IRC						
Z124.3-95-replaced with CSA B45.5-11/ IAPMO Z124-11	Plastic Lavatories Plumbing Fixtures	IPC	IRC						
Z124.4-96-replaced with CSA B45.5-11/ IAPMO Z124-11	Plastic Water Closet Bowls and Tanks Plumbing Fixtures	IPC	IRC						
Z124.6-97 replaced with CSA B45.5-11/ IAPMO Z124-11	Plastic Sinks Plumbing Fixtures	IPC	IRC						
Z124.7-97 replaced with IAPMO Z124.7-2012	Prefabricated Plastic Spa Shells	ISPSC							
Z124.9-94-replaced with CSA B45.5-11/ IAPMO Z124-11	Plastic Urinal Fixtures Plumbing Fixtures	IPC	IRC						
APA	APA -The Engineered Wood Association								
Standard Reference Number	Title	Referenced in Code(s):							
ANSI/AITC A 190.1 – 07 12	Structural Glued-Laminated Timber	IBC	IRC	IgCC					
APA E30-03 11	Engineered Wood Construction Guide	IRC							
APA PDS 04 12	Panel Design Specification	IBC							
APA PDS Supplement 5-08 12	Design and Fabrication of All-Plywood Beams (revised 2008 2013)	IBC							

APA PDS Supplement 1- 90 12	Design and Fabrication of Plywood Curved Panels (revised 1995 2013)	IBC							
APA PDS Supplement 4- 90 12	Design and Fabrication of Plywood Sandwich Panels (revised 1993 2013)	IBC							
APA PDS Supplement 3- 90 12	Design and Fabrication of Plywood Stressed-skin Panels (revised 1996 2013)	IBC							
APA PDS Supplement 2- 92 12	Design and Fabrication of Glued Plywood-lumber Beams (revised 1998 2013)	IBC							
EWS R540- 02 12	Builders Tips: Proper Storage and Handling of Glulam Beams	IBC							
EWS S475- 04 07	Glued Laminated Beam Design Tables	IBC							
EWS S560- 03 10	Field Notching and Drilling of Glued Laminated Timber Beams	IBC							
EWS T300- 05 07	Glulam Connection Details	IBC							
EWS X440- 03 08	Product Guide - Glulam	IBC							
API	API –American Petroleum Institute								
Standard Reference Number	Title	Referenced in Code(s):							
Publ 2009 <u>7th Edition</u> (2002, R2012)	Safe Welding and Cutting Practices in Refineries, Gas Plants and Petrochemical Plants	IFC							
Publ 2023 <u>3rd Edition</u> (R2001, R2006)	Guide for Safe Storage and Handling of Heated Petroleum-Derived Asphalt Products and Crude Oil Residue	IFC							
Publ 2028 <u>3rd Edition</u> (2002, R2012)	Flame Arrestors in Piping Systems	IFC							
Publ 2201 <u>5th Edition</u> (2003, 2010)	Procedures for Welding or Hot Tapping on Equipment in Service	IFC							
RP 651 (1997) <u>3rd Edition</u> (2007)	Cathodic Protection of Aboveground Petroleum Storage Tanks	IFC							
RP 752 (2003) <u>3rd Edition</u> (2009)	Management of Hazards Associated with Location of Process Plant Buildings, CMA Manager's Guide	IFC							
RP 1604 (1996) <u>3rd Edition</u> , R2010)	Closure of Underground Petroleum Storage Tanks	IFC							
RP 1615 (1996) <u>6th Edition</u> (2011)	Installation of Underground Petroleum Storage Systems	IFC							
RP 2001 (2005) <u>9th Edition</u> (2012)	Fire Protection in Refineries	IFC							
RP 2350 (2005) <u>4th Edition</u> (2012)	Overfill Protection for Storage Tanks in Petroleum Facilities, 3rd Edition	IFC							
RP 2003 (1998) <u>7th Edition</u> (2008)	Protection Against Ignitions Arising out of Static, Lightening, and Stray Currents	IFC							
Spec 12P <u>3rd Edition</u> (1995) (Reaffirmed 2009)	Specification for Fiberglass Reinforced Plastic Tanks	IFC							
Std 653 (2004) <u>4th Edition</u> (2009) (2009)	Tank Inspection, Repair, Alteration and Reconstruction	IFC							
Std 2015 <u>6th Edition</u> (2001, R2006)	Safe Entry and Cleaning of Petroleum Storage Tanks	IFC							

Std 2000 6 th Edition (4998) 2009	Venting Atmosphere and Low-pressure Storage Tanks: Nonrefrigerated and Refrigerated	IFC							
APHA		American Public Health Association							
Standard Reference Number	Title	Referenced in Code(s):							
2005 2012	Standard Methods for Examination of Water and Waste water 24 th 2nd Edition	IgCC							
APSP		The Association of Pool & Spa Professionals							
Standard Reference Number	Title	Referenced in Code(s):							
ANSI/NSPI APSP/ICC 3-99 2013	Standard for Permanently Installed Residential Spas	IRC							
ANSI/NSPI APSP/ICC 4-2007 2012	Standard for Above-ground/On-ground residential swimming pools	IRC							
ANSI/NSPI APSP/ICC 5-2003 2011	Standard for Residential In-Ground Swimming Pools	IRC							
ANSI/NSPI APSP/ICC 6-2009 2013	Standard for Residential Portable Spas	IRC							
ANSI/APSP/ICC 7-06 2013	Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins	IBC	IRC	ISPSC					
ANSI/APSP/ICC 14-11	Portable Spa Energy Efficiency Standard	IPSPC							
ANSI/APSP/ICC 15-11	Standard for Energy Efficiency for Residential Inground Swimming Pools and Spas <u>with Addenda A Approved 2013</u>	ISPSC							
ANSI/APSP/ICC16-11	Standard for Suction Fittings for Use in Swimming Pools, Wading Pools, Spas and Hot Tubs	ISPSC							
ASABE		American Society of Agricultural & Biological Engineers							
Standard Reference Number	Title	Referenced in Code(s):							
EP 559.1 4997 W/Corr. 1 DEC 1996 (R2008) AUG2010	Design Requirements and Bending Properties for Mechanically Laminated Wood Column Assemblies	IBC							
EP 486.4 2 DEC 1999 (R2005) OCT2012	Shallow Post and Pier Foundation Design	IBC							
EP542-FEB1999 99(R2009)	Procedures for Using and Reporting Data Obtained with the Soil Cone Penetrometer	IgCC							

S313.3-99 FEB1999 (R2009)	Soil Cone Penetrometer	IgCC							
ASCE/SEI		American Society of Civil Engineers/Structural Engineers Institute							
Standard Reference Number	Title	Referenced in Code(s):							
5-44 13	Building Code Requirements for Masonry Structures	IBC	IRC						
6-11 13	Specification for Masonry Structures	IBC	IRC						
7-10	Minimum Design Loads for Buildings and Other Structures with Supplement No. 1	IBC	IEBC	IRC					
8-02 14	Standard Specification for the Design of Cold-formed Stainless Steel Structural Members	IBC							
24-05 13	Flood Resistant Design and Construction	IBC	ISPSC	IRC					
29-05 14	Standard Calculation Methods for Structural Fire Protection	IBC							
31-03 41-13 Note: will be incorporated into ASCE 41-13	Seismic Evaluation and Retrofit Rehabilitation of Existing Buildings	IEBC							
32-01	Design and Construction of Frost Protected Shallow Foundations	IBC	IRC						
41-06 13	Seismic Evaluation and Retrofit Rehabilitation of Existing Buildings	IEBC							
ASHRAE		American Society of Heating, Refrigerating and Air Conditioning Engineers							
Standard Reference Number	Title	Referenced in Code(s):							
15-2010 2013	Safety Standard for Refrigeration Systems	IMC							
34-2010 2013	Designation and Safety Classification of Refrigerants	IRC	IMC						
52.2-2007 2012	Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size	IgCC							
55-2004 2010	Thermal Environmental Conditions on Human Occupancy	IgCC							
62.1-2010 2013	Ventilation for Acceptable Indoor Air Quality	IMC	IECC	IEBC	IgCC				
90.1-2010 2013	Energy Standard for Buildings Except Low-Rise Residential Buildings including Addendum G (ANSI/ASHRAE/IESNA 90.1-2007)	IECC	IgCC						

140-2040 <u>11</u>	Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs	IECC							
146- 2006 <u>2011</u>	Testing for Rating Pool Heaters	IECC							
180- 08 <u>2012</u>	Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems	IMC							
ANSI/ASHRAE/ACCA 183-2007 (RA2011)	Peak Cooling and Heating Load Calculations in Buildings, Except Low-rise Residential Buildings	IECC							
ASHRAE- 2004 <u>2012</u>	HVAC Systems and Equipment Handbook - 2004	IMC	IECC						
ASHRAE- 2009 <u>2013</u>	ASHRAE Handbook of Fundamentals	IRC	IECC-R	IMC					
13256-1(2005) 1998 (RA 2012)	Water-source Heat Pumps - Testing and Rating for Performance - Part 1: Water-to-Air and Brine-to-Air Heat Pumps (ANSI/ASHRAE/IESNA 90.1-2004)	IECC							
ASME	American Society of Mechanical Engineers								
Standard Reference Number	Title	Referenced in Code(s):							
ASME A17.1/CSA B44— 2007 <u>2013</u>	Safety Code for Elevators and Escalators	IBC	IFC	IEBC	IRC	IPMC			
A112.1.3-2000(Reaffirmed 2005 <u>11</u>)	Air Gap Fittings for Use with Plumbing Fixtures, Appliances, and Appurtenances	IPC	IRC						
A112.3.4-2000 (Reaffirmed 2004) replaced with ASME A112.3.4-2013/CSA B45.9-13	Macerating Toilet Systems and Related Components	IPC	IRC						
A112.4.1- 1993 (Reaffirmed 2002) - <u>2009</u>	Water Heater Relief Valve Drain Tubes	IPC	IRC						
A112.4.2- 2003 (R2008) <u>2009</u>	Water Closet Personal Hygiene Devices	IPC							
A112.4.3-1999 (Reaffirmed 2004 <u>10</u>)	Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System	IPC	IRC						
A112.6.1M-1997 (Reaffirmed 2002 <u>08</u>)	Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use	IPC	IRC						
A112.6.2-2000 (Reaffirmed 2004 <u>10</u>)	Framing-Affixed Supports for Off-the-Floor Water Closets with Concealed Tanks	IPC	IRC						
A112.6.3-2001(Reaffirmed 2007)	Floor and Trench Drains	IPC	IRC						
A112.6.7- 2001(Reaffirmed 2007) - <u>2010</u>	Enameled and Epoxy Coated Cast Iron and PVC Plastic Sanitary Floor Sinks	IPC							
A112.6.9- <u>2005 (R2010)</u>	Siphonic Roof Drains	IPC							
ASME A112.18.1- 2005 <u>2012</u> / CSA B125.1- 2005 <u>2012</u>	Plumbing Supply Fittings	IPC	IRC						
ASME A112.18.2- 2005 <u>2011</u> / CSA B125.2- 2005 <u>2011</u>	Plumbing Waste Fittings	IPC	IRC						
ASME A112.19.1-2013/ CSA B45.2- 08 <u>13</u>	Enameled Cast-Iron and Enameled Steel Plumbing Fixtures	IPC	IRC						

ASME A112.19.2-2008 <u>2013</u> / CSA B45.1-08 <u>13</u>	Ceramic Plumbing Fixtures	IPC	IRC					
ASME A112.19.3-2008/ CSA B45.4-08(R2013)	Stainless-Steel Plumbing Fixtures	IPC	IRC					
ASME A112.19.5-2011/ CSA/B45.15-09 <u>11</u>	Flush Valves and Spuds <u>Trim</u> for Water Closets, Urinals, Bowls and Tanks	IPC	IRC					
ASME A112.19.7-2012/ CSA B45.10-09 <u>2012</u>	Hydromassage Bathtubs Appliances Systems	IPC	IRC					
B16.1-2005 <u>2010</u>	Cast Gray Iron Pipe Flanges and Flanged Fittings, Classes 25, 125 and 250	IFGC						
B16.3-2006 <u>2011</u>	Malleable Iron Threaded Fittings Classes 150 and 300	IPC	IRC	IMC				
B16.4-2006 <u>2011</u>	Gray Iron Threaded Fittings Class 125 and 250	IPC	IRC					
B16.5-2003 <u>2009</u>	Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24	IMC						
B16.11-2005 <u>2011</u>	Forged Fittings, Socket-Welding and Threaded	IPC	IRC	IMC				
B16.12-1998 (Reaffirmed 2006)- <u>2009</u>	Cast Iron Threaded Drainage Fittings	IPC	IRC					
B16.15-2006 <u>2011</u>	Cast Bronze Threaded Fittings	IRC	IMC	IPC	IPSPC			
B16.18-2001 (Reaffirmed 2005)- <u>2012</u>	Cast Copper Alloy Solder Joint Pressure Fittings	IPC	IBC	IRC	IMC	IFC		
B16.20-1998(Reaffirmed 2007)-	Metallic Gaskets for Pipe Flanges: Ring-Joint, Spiral-Wound, and Jacketed	IFGC						
B16.22-2001(Reaffirmed 2005) (R2010)	Wrought Copper and Copper Alloy Solder Joint Pressure Fittings	IPC	IBC	IRC	IFC	IMC		
B16.23-2002 (Reaffirmed 2006) <u>2011</u>	Cast Copper Alloy Solder Joint Drainage Fittings: DWV	IPC	IRC	IMC				
B16.24-2006 <u>2011</u>	Cast Copper Alloy Pipe Flanges and Flanged Fittings: Class 150, 300, 400, 600, 900, 1500 and 2500	IMC						
B16.26-2006 <u>2011</u>	Cast Copper Alloy Fittings for Flared Copper Tubes	IPC	IRC	IMC				
B16.29-2007 <u>2012</u>	Wrought Copper and Wrought-Copper-Alloy Solder Joint Drainage Fittings - (DWV)	IPC	IRC	IMC				
B16.33-2002(Reaffirmed 2007) <u>2012</u>	Manually Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig (Sizes 1/2 through 2)	IFGC	IRC					
B31.1-2007 <u>2012</u>	Power Piping	IFC						
B31.3-2004 <u>2012</u>	Process Piping	IBC	IFC					
B31.4-2006 <u>2012</u>	Pipeline Transportation Systems for Liquid Hydrocarbons and other Liquids	IFC						
B31.9-08 <u>2011</u>	Building Services Piping	IFC	IMC					
ASSE 1016/ASME A112.1016/CSA B125.16-2011 is a replacement for ASSE 1016-2010	Performance Requirements for <u>Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations</u>	IPC	IRC	lgCC				
BPVC-2007 <u>2010/2011 addenda</u>	Boiler & Pressure Vessel Code	IFC	IMC	IFGC	IRC			
CSD-1-2009 <u>2011</u>	Controls and Safety Devices for Automatically Fired Boilers	IMC						

ASPE		American Society of Plumbing Engineers						
Standard Reference Number	Title	Referenced in Code(s):						
45-2007 2013	Siphonic Roof Drainage Systems	IPC						
ASSE		American Society of Sanitary Engineering						
Standard Reference Number	Title	Referenced in Code(s):						
4016-2010 ASSE 1016/ASME A112.1016/CSA B125.16-2011	Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	IPC	IRC	IgCC				
ASTM		ASTM International						
Standard Reference Number	Title	Referenced in Code(s):						
A53/A 53M-07-12	Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless	IPC	IMC	IRC	IFGC			
A74-09 12	Specification for Cast Iron Soil Pipe and Fittings	IPC	IRC	IPSDC				
A82/A 2M-05a 07	Specification for Steel Wire, Plain, for Concrete Reinforcement	IRC						
A106/A 106M-08 11	Specification for Seamless Carbon Steel Pipe for High-Temperature Service	IMC	IRC	IFGC				
A123/A 123M-02 12	Specification of Zinc (Hot-Dip Galvanized) Coating on Iron and Steel Products	IBC						
A126-04(2009)	Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings	IMC	IRC					
A153/A153M-05 09	Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware	IBC	IRC					
A182-10a- 12A	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings and Valves and Parts for High-Temperature Service	ISPSC						
A185/A 185M-06E04 07	Specification for Steel Welded Wire Reinforcement, Plain for Concrete	IBC						
A240/A 240M-09 12	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for General Applications	IBC	IRC	IPSPC				
A252-98(2007) 10	Specification for Welded and Seamless Steel Pipe Piles	IBC						
A283/A 283M-03(2007) 12	Specification for Low and Intermediate Tensile Strength Carbon Steel Plates	IBC						
A307-07b 10	Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength	IBC	IRC					
A312/A 312M-08a 12A	Specification for Seamless, and Welded, and Heavily Cold Worked Austenitic Stainless Steel	IPC	IRC	ISPSC				

	Pipes								
A377-03 <u>2003(2008)e1*</u>	Index of Specification for Ductile-Iron Pressure Pipe	IRC							
A403-40a <u>12</u>	Standard Specification for Wrought Austenitic Stainless Steel Pipe Fittings	ISPSC							
A416/A 416M-06 <u>12A</u>	Specification for Steel Strand, Uncoated Seven-Wire for Prestressed Concrete	IBC							
A420/A 420M-07 <u>10A</u>	Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service	IMC							
A421/A 421M- 05 <u>10</u>	Specification for Uncoated Stress-Relieved Steel Wire for Prestressed Concrete	IBC							
A435/A 435M-90 (2007) <u>2012</u>	Specification for Straight-Beam Ultrasonic Examination of Steel Plates	IBC							
A463M/A 463M-06 <u>10</u>	Specification for Steel Sheet, Aluminum-Coated, by the Hot Dip Process	IBC	IRC						
A480/A480M-06b <u>12</u>	Specification for General Requirements for Flat-Rolled Stainless and Heat-/Resisting Steel Plate, Sheet and Strip	IBC							
A496-05 <u>07</u>	Specification for Steel Wire, Deformed for Concrete Reinforcement	IBC							
A497 A497M-06e01 <u>07</u>	Specification for Steel Welded Reinforcement Deformed for Concrete	IBC							
A510-08 <u>11</u>	Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, Alloy Steel	IBC	IRC						
A572/A 572M-07 <u>12</u>	Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel	IBC							
A588/A 588M-05 <u>40</u>	Specification for High-Strength Low-Alloy Structural Steel with 50 ksi (345 Mpa) Minimum Yield Point, with Atmospheric Corrosion Resistance	IBC							
A615/A 615M-09 <u>12</u>	Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement	IBC	IRC						
A653/A 653M-08 <u>11</u>	Specification for Steel Sheet, Zinc-Coated Galvanized or Zinc-Iron Alloy-Coated Galvannealed by the Hot-Dip Process	IBC	IRC						
A690/690M-07(2012)	Standard Specification for High Strength Low-Alloy Nickel, Copper Phosphorus Steel H-Piles and Sheet Piling with Atmospheric Corrosion Resistance for Use in Marine Environments	IBC							
A706/A 706M-09B	Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement	IBC	IRC						
A722/A 722M-07 <u>12</u>	Specification for Uncoated High-Strength Steel Bar for Prestressing Concrete	IBC							

A733-2003(2009)e1*	Specification for Welded and Seamless Carbon Steel and Austenitic Stainless Steel Pipe Nipples	IPC						
A755/A 755M-03(2008) 2011	Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process and Prepainted by the Coil-coating Process for Exterior Exposed Building Products	IBC	IRC					
A767/A 767M-05 09	Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement	IBC						
A775/A 775M-07b	Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process and Prepainted by the Coil-coating Process for Exterior Exposed Building Products	IBC						
A778-01(2009)e1	Specification for Welded Unannealed Austenitic Stainless Steel Tubular Products	IPC	IRC					
A792/A 792M-08 10	Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process	IBC	IRC					
A875/A 875M-06 10	Standard Specification for Steel Sheet Zinc-5%, Aluminum Alloy-Coated by the Hot-Dip Process	IBC	IRC					
A888-09 11	Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Application	IPC	IPSDC	IRC				
A913/A 913M-07 11	Specification for High-Strength Low-Alloy Steel Shapes of Structural Quality, Produced by Quenching and Self-Tempering Process (QST)	IBC						
A924/A 924M-08a 2010a	Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot Dip Process	IBC	IRC					
A951/A951M-06 11	Specification for Steel Wire Masonry Joint Reinforcement	IRC						
A992/A 992M-06a 11	Standard Specification for Structural Shapes	IBC						
A996/A 996M-2009b	Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement	IRC						
A1003/A 1003M-08 12	Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-formed Framing Members	IRC						
A1008/A1008M-07 12	Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, Solution Hardened and Bake Hardenable	IBC						
B42-02e04 10	Specification for Seamless Copper Pipe, Standard Sizes	IPC	IBC	IRC	IFC			
B43-98(2004) 09	Specification for Seamless Red Brass Pipe, Standard Sizes	IPC	IBC	IRC	IFC	IMC		
B68-02 11	Specification for Seamless Copper Tube, Bright Annealed	IBC	IFC	IMC				
B75-02 11	Specification for Seamless Copper Tube	IPC	IPSDC	IRC	IMC			

B88-03 09	Specification for Seamless Copper Water Tube	IPC	IBC	IPSDC	IRC	IMC	IFC	IPSPC
B101-07 12	Specification for Lead-Coated Copper Sheet and Strip for Building Construction	IBC	IRC					
B135-08a 10	Specification for Seamless Brass Tube	IRC	IMC					
B152/B 152M-06a 09	Specification for Copper Sheet, Strip Plate and Rolled Bar	IPC						
B209-07 10	Specification for Aluminum and Aluminum-Alloy Steel and Plate	IBC	IRC					
B210-04 12	Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes	IFGC						
B227-04 10	Specification for Hard-Drawn Copper-Clad Steel Wire	IRC						
B241/B 241M-02 10	Specification for Aluminum and Aluminum-Alloy, Seamless Pipe and Seamless Extruded Tube	IFGC						
B251-02e04 10	Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube	IPC	IPSDC	IBC	IFC	IRC	IMC	
B302-07 12	Specification for Threadless Copper Pipe, Standard Sizes	IPC	IRC	IMC				
B370-09 12	Specification for Cold-Rolled Copper Sheet and Strip for Building Construction	IBC	IRC					
B447-07 12a	Specification for Welded Copper Tube	IPC	IRC					
B633-07 11	Specification for Electrodeposited Coatings of Zinc on Iron and Steel	IRC						
B687-99(2005)e04 (2011)	Specification for Brass, Copper, and Chromium-Plated Pipe Nipples	IPC						
B695-04(2009)	Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel	IBC	IRC					
B813-00(2009) 10	Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube	IPC	IPSDC	IRC	IMC			
B828-02(2010)	Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings	IPC	IPSDC	IRC				
C4-04e04 (2009)	Specification for Clay Drain Tile and Perforated Clay Drain Tile	IPC	IPSDC	IRC				
C5-03 10	Specification for Quicklime for Structural Purposes	IBC	IRC					
C14-07 11	Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe	IPC	IPSDC	IRC				
C22/C 22M-00(2005)e04 (2010)	Specification for Gypsum	IBC	IRC					
C27-98(2008)	Specification for Standard Classification of Fireclay and High-Alumina Refractory Brick	IBC	IRC					
C28/C 28M-00(2005) 10	Specification for Gypsum Plasters	IBC	IRC					
C31/C 31M-08b 12	Practice for Making and Curing Concrete Test Specimens in the Field	IBC						
C33/C33M-08 11a	Specification for Concrete Aggregates	IBC	IRC					

C34-03 10	Specification for Structural Clay Load-Bearing Wall Tile	IBC	IRC					
C35-01(2005)/C35M-1995(2009)	Specification for Inorganic Aggregates for Use in Gypsum Plaster	IBC	IRC					
C36/C 36M-03 Withdrawn Replaced	Specification for Gypsum Wallboard	IBC						
C37/C 37M-04 Withdrawn Replaced	Specification for Gypsum Lath	IBC						
C42/C 42M-04 12	Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete	IBC						
C55-06e04 2011	Specification for Concrete Building Brick	IBC	IRC					
C56-05 2010	Specification for Structural Clay Non-Load-Bearing Tile	IBC						
C59/C 59M-00(2006)	Specification for Gypsum Casting Plaster and Molding Plaster	IBC	IRC					
C61/C 61M-00(2006) (2011)	Specification for Gypsum Keene's Cement	IBC	IRC					
C62-08 12	Specification for Building Brick (Solid Masonry Units Made From Clay or Shale)	IBC	IRC					
C67-08 12	Test Methods of Sampling and Testing Brick and Structural Clay Tile	IBC						
C73-05 10	Specification for Calcium Silicate Face Brick (Sand-Lime Brick)	IBC	IRC					
C76-08a 12a	Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe	IPC	IPSDC	IRC				
C90-08 12	Specification for Loadbearing Concrete Masonry Units	IBC	IRC	IECC				
C91-05 12	Specification for Masonry Cement	IBC	IRC					
C94/C 94M-09 12	Specification for Ready-Mixed Concrete	IBC	IRC					
C109/C 109M-05 2001b	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)	IBC						
C126-99(2005) 12	Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units	IBC						
C129-06 11	Specification for Nonload-bearing Concrete Masonry Units	IBC	IRC					
C140-08a 2012a	Test Method Sampling and Testing Concrete Masonry Units and Related Units	IBC	IRC					
C143/C 143M-08 2010a	Test Method for Slump of Hydraulic Cement Concrete	IRC						
C145-85 <i>Withdrawn Combined</i>	Specification for Solid-Load Bearing Concrete Masonry Units	IRC						
C150-07-12	Specification for Portland Cement	IBC	IRC					
C172/C172M-08 10	Practice for Sampling Freshly Mixed Concrete	IBC						

C199-84 (2005) (2011)	Test Method for Pier Test for Refractory Mortars	IBC	IRC				
C203-5a (2012)	Standard Test Methods for Breaking Load and Flexural Properties of Block-type Thermal Insulation	IRC					
C206-03(2009)	Specification for Finishing Hydrated Lime	IBC					
C207-06 2011	Specification for Hydrated Lime for Masonry Purposes	IBC	IRC				
C208-2008a 12	Specification for Cellulosic Fiber Insulating Board	IBC	IRC				
C212-00(2006)10	Specification for Structural Clay Facing Tile	IBC					
C216-07a 12	Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale)	IBC	IRC				
C270-08a 12a	Specification for Mortar for Unit Masonry	IBC	IRC				
C272-01(2007)/C272M-12	Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions	IRC					
C273/C273M-07a 11	Standard Test Method for Shear Properties of Sandwich Core Materials	IRC					
C296-00(2004) /C296M-00(2009)e1	Specification for Asbestos-Cement Pressure Pipe	IPC	IRC				
C315-07(2011)	Specification for Clay Flue Liners and Chimney Pots	IBC	IRC	IMC	IFGC		
C317/C 317M-00(2005) 2010	Specification for Gypsum Concrete	IBC					
C330-05/C330-2009	Specification for Lightweight Aggregates for Structural Concrete	IBC					
C331-05 /C331M-2010	Specification for Lightweight Aggregates for Concrete Masonry Units	IBC					
C406-06e04 /C406M-2010	Specification for Roofing Slate	IBC	IRC				
C411-05 11	Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation	IRC	IMC				
C425-04(2009)	Specification for Compression Joints for Vitrified Clay Pipe and Fittings	IPC	IPSDC	IRC			
C428/C428M-05(200611)e1	Specification for Asbestos-Cement Nonpressure Sewer Pipe	IPC	IPSDC	IRC			
C443-05a-12	Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets	IPC	IPSDC	IRC			
C472-99(2004) (2009)	Specification for Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete	IBC					
C473-07 12	Test Methods for Physical Testing of Gypsum Panel Products	IBC					
C474-05 12	Test Methods for Joint Treatment Materials for Gypsum Board Construction	IBC					
C475/C 475M-02(2007) 12	Specification for Joint Compound and Joint Tape for Finishing	IBC	IRC				

	Gypsum Wall Board							
C476-08 10	Specification for Grout for Masonry	IRC						
C496/C496M-96 11	Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens	IEBC						
C503-08a 10	Specification for Marble Dimension Stone (Exterior)	IBC						
C508/C508M-00(2004) (2009)e1	Specification for Asbestos-Cement Underdrain Pipe	IPC	IRC					
C514-04(2009)e1	Specification for Nails for the Application of Gypsum Board	IBC	IRC					
C516-08a	Specification for Vermiculite Loose Fill Thermal Insulation	IBC						
C518-04 10	Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	IBC	IECC					
C547-07e1 12	Specification for Mineral Fiber Pipe Insulation	IBC						
C549-06(2012)	Specification for Perlite Loose Fill Insulation	IBC						
C552-07 12b	Standard Specification for Cellular Glass Thermal Insulation	IBC	IRC					
C557-03(2009)e01	Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing	IBC	IRC					
C564-08 12	Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings	IPC	IPSDC	IRC				
C568-08a 10	Specification for Limestone Dimension Stone	IBC						
C578-08b12a	Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation	IBC	IRC					
C587-04(2009)	Specification for Gypsum Veneer Plaster	IBC	IRC					
C595/C95M-08a 2012e1	Specification for Blended Hydraulic Cements	IBC	IRC					
C615/C615M-03 2011	Specification for Granite Dimension Stone	IBC						
C616/C616M-08a 2010	Specification for Quartz Dimension Stone	IBC						
C629-08 2010	Specification for Slate Dimension Stone	IBC						
C630/C 630M-03 <i>Withdrawn replaced by C1396/C1396M-11</i>	Specification for Water-Resistant Gypsum Backing Board	IBC	IRC					
C635/C635M-07 12	Specification for the Manufacturer, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings	IBC						
C645-08a 11A	Specification for Nonstructural Steel Framing Members	IBC	IRC					
C652-09 12	Specification for Hollow Brick (Hollow Masonry Units Made from Clay or Shale)	IBC	IRC					
C685/C 685M-07 11	Specification for Concrete Made by Volumetric Batching and	IRC						

	Continuous Mixing							
C700-07a 11	Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated	IPC	IPSDC	IRC				
C726-05e4 12	Standard Specification for Mineral Wool Roof Insulation Board	IBC						
C728-05(2010)	Standard Specification for Perlite Thermal Insulation Board	IBC	IRC					
C744-08 11	Specification for Prefaced Concrete and Calcium Silicate Masonry Units	IBC						
C754-08 11	Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products	IBC						
C836/C836M-06 12	Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course	IBC	IRC					
C840-08 11	Specification for Application and Finishing of Gypsum Board	IBC						
C841-03(2008)E1	Specification for Installation of Interior Lathing and Furring	IBC						
C842-05(2010)E1	Specification for Application of Interior Gypsum Plaster	IBC						
C843-99(2006) (2012)	Specification for Application of Gypsum Veneer Plaster	IBC	IRC					
C844-04(2010)	Specification for Application of Gypsum Base to Receive Gypsum Veneer Plaster	IBC	IRC					
C847-09 12	Specification for Metal Lath	IBC	IRC					
C887-05(2010)	Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar	IBC	IRC					
C897-05(2009)	Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters	IBC	IRC					
C920-08 11	Standard Specification for Elastomeric Joint Sealants	IBC	IRC	IgCC				
C926-06 12A	Specification for Application of Portland Cement-Based Plaster	IBC	IRC					
C931/C 931M-04 <i>Withdrawn Replaced by C1396/C1396M-11</i>	Specification for Exterior Gypsum Soffit Board	IBC						
C932-06	Specification for Surface-Applied Bonding Compounds Agents for Exterior Plastering	IBC						
C933-07b 11	Specification for Welded Wire Lath	IBC						

C946-94 (2004) 10	Specification for Practice for Construction of Dry-stacked, Surface-Bonded Walls	IBC						
C954-07 11	Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 inch (0.84 mm) to 0.112 inch (2.84 mm) in Thickness	IBC	IRC					
C955-09 11C	Standard Specification for Load-bearing Transverse and Axial Steel Studs, Runners Tracks, and Bracing or Bridging, for Screw Application of Gypsum Panel Products and Metal Plaster Bases	IBC	IRC					
C956-04(2010)	Specification for Installation of Cast-in-Place Reinforced Gypsum Concrete	IBC						
C957-06 10	Specification for High-Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Integral Wearing Surface	IBC	IRC					
C989/C989M-06 12A	Specification for Ground Granulated Blast-Furnace Slag Cement for Use in Concrete and Mortars	IBC						
C1007-08a-11a	Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories	IBC						
C1019-09 11	Test Method for Sampling and Testing Grout	IBC						
C1029-08 10	Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation	IBC	IRC					
C1032-06(2011)	Specification for Woven Wire Plaster Base	IBC	IRC					
C1047-09 10A	Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base	IBC	IRC					
C1053-00(2005) (2010)	Specification for Borosilicate Glass Pipe and Fittings for Drain, Waste, and Vent (DWV) Applications	IPC						
C1063-08 12C	Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster	IBC	IRC					
C1088-09	Specification for Thin Veneer Brick Units Made From Clay or Shale	IBC						
C1072-06 11	Standard Text Method for Measurement of Masonry Flexural Bond Strength	IBC						
C1107/C1107-08 11	Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)	IRC						

C1116/C1116M-08a 10	Standard Specification for Fiber - Reinforced Concrete and Shotcrete	IRC						
C1157-08a 11	<u>Standard Performance Specification for Hydraulic Cement</u>	IBC						
C1167-03 11	Specification for Clay Roof Tiles	IBC	IRC					
C1173-08 10	Specification for Flexible Transition Couplings for Underground Piping Systems	IPC	IPSDC	IRC				
C1178/C 1178M-06 11	Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel	IBC	IRC					
C1186-08	Specification for Flat Non-asbestos Fiber Cement Sheets	IBC	IRC					
C1218/C1218M-99(2008)	Test Method for Water-Soluble Chloride in Mortar and Concrete	IBC						
C1240-05 12	Specification for Silica Fume Used in Cementitious Mixtures	IBC						
C1261-07 10	Specification for Firebox Brick for Residential Fireplaces	IBC	IRC					
C1277-08 11	Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings	IPC	IPSDC	IRC				
C1278/C1278M-07a(2011)	Specification for Fiber-Reinforced Gypsum Panels	IBC	IRC					
C1280-09 12A	Specification for Application of <u>Exterior Gypsum Panel Products for Use as Sheathing</u>	IBC						
C1283-07a 11	Practice for Installing Clay Flue Lining	IBC	IRC					
C1288-99(2004)e1 2010	Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets	IBC	IRC					
C1289-08-12a	Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board	IBC	IRC					
C1314-07 11A	Test Method for Compressive Strength of Masonry Prisms	IBC						
C1325-08b	Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cement Interior Substrate Sheets Backer Units	IBC	IRC					
C1328/C1328M-05 12	Specification for Plastic (Stucco Cement)	IBC	IRC					

C1364-07 10B	Standard Specification for Architectural Cast Stone	IBC						
C1371-04A(2010)E1	Standard Test Method For Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers	IECC	IgCC					
C1373/C1373-03 11	Standard Practice for Determination of Thermal Resistance of Attic Insulation Systems Under Simulated Winter Conditions	IECC						
C1396/1396M-06a 11	Specification for Gypsum Ceiling Board	IBC	IRC					
C1405-08 12	Standard Specification for Glazed Brick (Single Fired, Solid Brick Units)	IBC						
C1492-03(2009)	Standard Specification for Concrete Roof Tile	IBC	IRC					
C1513-04 12	Standard Specification for Concrete Roof Tile	IRC						
C1540-08 11	Specification for Heavy Duty Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings	IPC						
C1611/C 1611M-05-09BE1	Standard Test Method for Slump Flow of Self-Consolidating Concrete	IBC						
C1629/C1692M-06(2011)	Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels	IBC						
C1658/C1658-06 12	Standard Specification for Glass Mat Gypsum Panels	IBC	IRC					
C1563-08	Standard Test Method for Gaskets for Use in Connection with Hub and Spigot Cast Iron Soil Pipe and Fittings for Sanitary Drain, Waste, Vent and Storm Piping Applications	IPC						
D25-09(2005)12	Specification for Round Timber Piles	IBC						
D56-05(2010)	Test Method for Flash Point by Tag Closed Tester	IBC						
D86-09 2011b	Test Method for Distillation of Petroleum Products at Atmospheric Pressure	IBC	IFC					
D92-05a 12	Test Method for Flash and Fire Points by Cleveland Open Cup Tester	IFC						
D93-08 11	Test Method for Flash Point by Pensky-Martens Closed Cup Tester	IBC	IFC	IMC				

D226/D226M-06 09	Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing	IBC	IRC				
D227/D227M-03(2011)E1	Specification for Coal-Tar-Saturated Organic Felt Used in Roofing and Waterproofing	IBC	IRC				
D635-06 10	Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position	IBC					
D1003-07 11e1	Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics	IECC					
D1248-05 12	Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable	IRC					
D1557-07 12	Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb/ft ³ (2,700kN-m/m ³))	IBC					
D1593-09	Non-rigid vinyl chloride plastic film and sheeting	ISPSC					
D1621-04a 10	Standard Test Method for Compressive Properties Of Rigid Cellular Plastics	IRC					
D1623-03 09	Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics	IRC					
D1693-08 12	Test Method for Environmental Stress-Cracking of Ethylene Plastics	IRC	IMC				
D1784-08 11	Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds	IRC					
D1785-06 12	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80 and 120	IPC	IMC	IRC	ISPSC		
D1863/D1863M-05(2011)E1	Specification for Mineral Aggregate Used on Built-Up Roofs	IBC	IRC				
D1869-95 (2005)e1 (2010)	Specification for Rubber Rings for Asbestos-Cement Pipe	IPC	IPSDC	IRC			
D1929-96(2001)e01-12	Test Method for Determining Ignition Properties Temperature of Plastics	IBC					
D1970/D1970M-09 11	Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roof Underlayment for Ice Dam Protection	IBC	IRC				
D2126-04 09	Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging	IRC					
D2216-05 10	Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass	IBC					
D2235-04 (2011)	Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings	IPC	IPSDC	IMC	IRC		

D2239-03 12	Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter	IPC	IRC					
D2241-05 09	Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR-Series)	IPC	IRC	IMC	ISPSC			
D2412-02(2008) 11	Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading	IRC	IMC					
D2487-06(2011) 2011	Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)	IBC						
D2513-08(2012) 12	Specification for Thermoplastic Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings	IRC	IMC	IFGC				
D2559-04 12A	Standard Specification for Adhesives for Structural Laminated Bonded Structural Wood Products for Use under Exterior (West Use) Exposure Conditions	IRC						
D2564-04(2012) 12	Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems	IPC	IPSDC	IRC	IMC			
D2626/D2626M-04(2012)E1	Specification for Asphalt-Saturated and Coated Organic Felt Base Sheet Used in Roofing	IBC	IRC					
D2661-08 11	Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings	IPC	IPSDC	IRC				
D2665-09 12	Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	IPC	IPSDC	IRC				
D2672-96a(2003) (2009)	Specification for Joints for IPS PVC Pipe Using Solvent Cement	IPC	IRC	ISPSC				
D2683-04 10	Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing	IPC	IRC	IMC				
D2729-03 11	Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	IRC	IPC	IPSDC				
D2737-03 12E1	Specification for Polyethylene (PE) Plastic Tubing	IPC	IRC					
D2822/D2822M-05(2011)E1	Specification for Asphalt Roof Cement, Asbestos Containing	IBC	IRC					
D2823/D2823M-05 (2011)E1	Specification for Asphalt Roof Coatings, Asbestos Containing	IBC	IRC					
D2824-06(2012)E1	Specification for Aluminum-Pigmented Asphalt Roof Coatings, Non-fibered, Asbestos Fibered, and Fibered without Asbestos	IRC	IBC					
D2837-08 11	Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products	IRC	IMC					
D2843-99(2004)e04 10	Test for Density of Smoke from the Burning or Decomposition of Plastics	IBC						
D2846/D 2846M-09BE1	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic	IPC	IRC	IMC	ISPSC			

	Hot- and Cold-Water Distribution Systems							
D2855-96(2002) (2010)	Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings	IPC	IPSDC	IRC				
D2859-06 (2011)	Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials	IBC	IFC					
D2898-(04) 10	Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing	IBC	IRC	IWUIC				
D2949-04a(2008) 10	Specification for 3.25-in. Outside Diameter Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	IPC	IPSDC	IRC				
D2974-07a-A	Standard Test Methods for Moisture, Ash and Organic Matter of Peat and other Organic Soils	IgCC						
D3035-08 12	Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter	IPC	IRC	IMC				
D3139-98(2005) 2011	Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals	IPC						
D3161/D3161M-09 12	Test Method for a Wind Resistance of Asphalt Shingles (Fan Induced Method)	IBC	IRC					
D3200-74(2005) 2012	Standard Specification and Test Method for Establishing Recommended Design Stresses for Round Timber Construction Poles	IBC						
D3201-08AE1	Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Based Products	IBC	IRC	IWUIC				
D3261-03 12	Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings Plastic Pipe and Tubings	IMC	IPC					
D3278-1996(2004)e1 (2011)	Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus	IBC	IFC	IMC				
D3311-08 11	Specification for Drain, Waste and Vent (DWV) Plastic Fittings Patterns	IPC	IRC					
D3350-08 12	Specification for Polyethylene Plastics Pipe and Fittings Materials	IRC	IMC					
D3462/3462M-09 10A	Specification for Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules	IBC	IRC					
D3679-09 11	Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding	IBC	IRC					
D3689-07	Test Methods for Deep Foundations Piles Under Static Axial Tensile Load	IBC						
D3737-08 09E1	Practice for Establishing Allowable Properties for Structural Glued Laminated Timber (Glulam)	IBC	IRC					
D3805/D3805M-97(2003)e1 (2009)	Standard Guide for Application of Aluminum-Pigmented Asphalt Roof Coatings	IBC						
D3909/D3909M-97b(2004) 2012e1	Specification for Asphalt Roll Roofing (Glass Felt) Surfaced with Mineral Granules	IBC	IRC	IWUIC				
D3957-06 09	Standard Practices for Establishing Stress Grades for Structural Members Used In Log	IBC	IRC					

	Buildings							
<u>D4022/D4022M-2007(2012)E1</u>	Specification for Coal Tar Roof Cement, Asbestos Containing	IBC	IRC					
<u>D4068-04 09</u>	Specification for Chlorinated Polyethylene (CPE) Sheeting for Concealed Water-Containment Membrane	IPC	IRC					
<u>D4272-08a 09</u>	Test Method for Total Energy Impact of Plastic Films by Dart Drop	IBC						
<u>D4318-05 10</u>	Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils	IBC	IRC					
<u>D4434/D4434M-09 12</u>	Specification for Poly (Vinyl Chloride) Sheet Roofing	IBC	IRC					
<u>D4479/D4479M-07(2012)E1</u>	Specification for Asphalt Roof Coatings - Asbestos-Free	IBC	IRC					
<u>D4551-96 (2008)e1 12</u>	Specification for Poly (Vinyl Chloride) (PVC) Plastic Flexible Concealed Water-Containment Membrane	IPC	IRC					
<u>D4586/D4586M-07(2012)E1</u>	Specification for Asphalt Roof Cement, Asbestos-Free	IBC	IRC					
<u>D4601/D4601M-08 042012E1</u>	Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing	IBC	IRC					
<u>D4637/D4637M-08 12</u>	Specification for EPDM Sheet Used in Single-Ply Roof Membrane	IBC	IRC					
<u>D4829-08a 11</u>	Test Method for Expansion Index of Soils	IBC	IRC					
<u>D4869/D4869M-05(2011)e01</u>	Specification for Asphalt-Saturated (Organic Felt) Underlayment Used in Steep Slope Roofing	IBC	IRC					
<u>D4897/D4897M-01(2009)</u>	Specification for Asphalt-Coated Glass-Fiber Venting Base Sheet Used in Roofing	IBC	IRC					
<u>D4945-08 12</u>	Test Methods for High-Strain Dynamic Testing of Deep Foundations	IBC						
<u>D5019-07a</u> Withdrawn/no replacement	Specification for Reinforced CSM Polymeric Sheet Used in Roofing Membrane	IBC	IRC					
<u>D5055-40 12</u>	Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists	IBC	IRC	IgCC				
<u>D5197-09E1</u>	Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology)	IgCC						
<u>D5456-40 12</u>	Standard Specification for Evaluation of Structural Composite Lumber Products	IBC	IRC	IgCC				
<u>D5516-03 09</u>	Test Method of Evaluating the Flexural Properties of Fire-Retardant Treated Softwood Plywood Exposed to the Elevated Temperatures	IBC	IRC					
<u>D5643/D5643M-06 (2012)E1</u>	Specification for Coal Tar Roof Cement, Asbestos-Free	IBC	IRC					
<u>D5664-08 10</u>	Test Methods for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength	IBC	IRC					

	Properties of Fire-Retardant Treated Lumber						
D6162-2000a(2008)	Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements	IBC	IRC				
D6164/D6164M-05e1 11	Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements	IBC	IRC				
D6222/D6222M-08 11	Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements	IBC	IRC				
D6223D6223M-02(2009)E1	Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements	IBC	IRC				
D6662-09	Standard Specification for Polyolefin-Based Plastic Lumber Decking Boards	IWUIC					
D6694-08	Standard Specification for Liquid-applied Silicone Coating Used In Spray Polyurethane Foam Roofing Systems	IBC	IRC				
D6698-07 12	Standard Test Method for On-Line Measurement of Turbidity Below 5 NTU in Water	IgCC					
D6754/D6745M-02 10	Standard Specification for Ketone Ethylene Ester Based Sheet Roofing	IBC	IRC				
D6757-07	Standard Specification for Inorganic Underlayment Felt Containing Inorganic Fibers used in Steep-Slope Roofing Products	IBC	IRC				
D6878-08e1/D6878-11A	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing	IBC	IRC				
D6886-44 12	Standard Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis	IgCC					
D7032-08 10a	Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems (Guards or Handrails)	IRC	IWUIC				
D7158-08e1/D7158M 2011	Standard Test Method for Wind Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method)	IBC	IRC				
E84-09 2012c	Test Method for Surface Burning Characteristics of Building Materials	IBC	IFC	IRC	IMC		
E96/E96M-05 10	Test Method for Water Vapor Transmission of Materials	IBC	IRC				
E108-07a 2011	Test Methods for Fire Tests of Roof Coverings	IBC	IRC				
E119-2008a 2012a	Standard Test Methods for Fire Tests of Building Construction and Materials	IBC	IRC	IMC	IWUIC		

E136-09 <u>2012</u>	Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C	IBC	IRC	IMC	IWUIC			
E519-00e1-/E519M <u>2010</u>	Standard Test Method for Diagonal Tension (Shear) in Masonry Assemblages	IEBC						
E605-93(2006) (2011)	Test Method for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members	IBC						
E681-04 <u>2009</u>	Test Method for Concentration Limits of Flammability of Chemicals (Vapors and Gases)	IBC	IFC					
E736-00(2006) (2011)	Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members	IBC						
E779-03 <u>10</u>	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization	IECC	IgCC					
E814-08b <u>2011a</u>	Test Method of Fire Tests of Through-Penetration Firestops	IBC	IRC	IMC				
E970-08a <u>2010</u>	Test Method for Critical Radiant Flux of Exposed Attic Floor Insulation Using a Radiant Heat Energy Source	IBC	IRC					
E1300-07e04 <u>12AE1</u>	Practice for Determining Load Resistance of Glass in Buildings	IBC						
E1332-90(2003)	Standard Classification for the Determination of Outdoor-Indoor Transmission Class	IgCC						
E1354-09 <u>2011b</u>	Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter	IBC	IFC					
E1465-08A	Standard Practice for Radon Control Options for the Design and Construction of New Low-Rise Residential Buildings	IRC						
E1509-04 <u>12</u>	Standard Specification for Room Heaters, Pellet Fuel-Burning Type	IRC	IMC	IgCC				
E1529-06 <u>10</u>	Test Method for Determining Effects of Large Hydrocarbon Pool Fires on Structural Members and Assemblies	IFC						
E1537-07 <u>12</u>	Test Method for Fire Testing of Upholstered Furniture	IFC						
E1590-07 <u>12</u>	Test Method for Fire Testing of Mattresses	IFC						
E1592-05(2012)	Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference	IBC						
E1602-03 <u>02(2010)E1</u>	Guide for Construction of Solid Fuel-Burning Masonry Heaters	IBC	IRC					
E1643-40 <u>11</u>	Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders <u>used in Contact with Earth or Granular Fill Under Concrete Slabs</u>	IgCC						

E1677-05 <u>11</u>	Standard Specification for an Air Retarder (AR) Material or System for Low-Rise Framed Building Walls	IECC						
E1966-07A(2011)	Test Method for Fire resistant Joint Systems	IBC	IFC					
E1980-04 <u>11</u>	Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-sloped Opaque Surfaces	IECC	IgCC					
E1996-09 <u>12</u>	Specification for Performance of Exterior Windows, Glazed Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes	IBC	IRC	IFC				
E2072-04 <u>10</u>	Standard Specification for Photoluminescent (Phosphorescent) Safety Markings	IBC	IFC					
E2174-09 <u>10AE1</u>	Standard Practice for On-Site Inspection of Installed Fire Stops	IBC	IEBC					
E2178-03 <u>11</u>	Standard Test Method for Air Permeance of Building Materials	IRC	IECC					
E2231-04 <u>09</u>	Standard Practice for Specimen Preparation and Mounting of Pipe and Duct Insulation Materials to Assess to Surface Burning Characteristics	IRC	IMC					
E2273-03(2011)	Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies	IBC	IRC					
E2307 -04 <u>12</u>	Standard Test Method for Determining Fire Resistance of a Perimeter Fire Barriers Joint System Between an Exterior Wall Assembly and a Floor Assembly Using the Intermediate-Scale, Multi-story Test Apparatus ¹ .	IBC						
E2336-04(2009)	Standard Test Methods Fire Resistive Grease Duct Enclosure Systems	IMC						
E2357-05 <u>11</u>	Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies	IECC						
E2393-09 <u>10A</u>	Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barrier	IBC	IEBC					
E2404—08 <u>12</u>	Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Vinyl Wall or Ceiling Coverings to Assess Surface Burning Characteristics	IBC	IFC					
E2568—09e1	Standard Specification of PB Exterior Insulation and Finish Systems (EIFS)	IBC	IRC					
E2573—07a <u>12</u>	Standard Practice for Specimen Preparation and Mounting of Site-fabricated Stretch Systems to Assess Surface Burning Characteristics	IBC	IFC					
E2599-09 <u>11</u>	Standard Practice for Specimen Preparation and Mounting of Reflective Insulation Materials and Vinyl Stretch Ceiling Materials Radiant Barrier for Building Applications to Assess	IBC						

	Surface Burning Characteristics							
E2634-08 <u>11</u>	Standard Specification for Flat Wall Insulating Concrete Form (ICF) Systems	IBC	IRC					
F409-02(2008) <u>12</u>	Specification for Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings	IPC	IRC					
F437-06 <u>09</u>	Specification for Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	IPC	IRC	IMC	ISPSC			
F438-04 <u>09</u>	Specification for Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40	IPC	IRC	IMC	ISPSC			
F439-06 <u>12</u>	Specification for Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	IPC	IRC	IMC	ISPSC			
F441/F 441M-02(2008) <u>12</u>	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80	IPC	IRC	IMC				
F442/F 442M-09(2005) <u>12</u>	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)	IPC	IRC	IMC				
F477-08 <u>10</u>	Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe	IPC	IPSDC	IRC				
F493-04 <u>10</u>	Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings	IPC	IRC	IMC				
F547-06 (2012)	Terminology of Nails for Use with Wood and Wood-based Materials	IBC						
F656-08 <u>10</u>	Specification for Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings	IPC	IPSDC	IRC				
F714-08 <u>12E1</u>	Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter	IPC	IRC	IMC				
F876-08 <u>10E1</u>	Specification for Crosslinked Polyethylene (PEX) Tubing	IPC	IRC	IMC				
F877-07 <u>11</u>	Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems	IPC	IRC	IMC				
F891-07 <u>10</u>	Specification for Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core	IPC	IPSDC	IRC				
F1055-08(2006) <u>11</u>	Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene and Crosslinked Polyethylene Pipe and Tubing	IPC	IRC	IMC				
F1281-07 <u>11</u>	Specification for Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX-AL-PEX)	IPC	IRC	IMC				

	Pressure Pipe							
F1282-06 10	Specification for Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure Pipe	IPC	IMC	IRC				
F1346-91 (2003) (2010)	Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs	IBC	IRC	IPMC	IgCC	ISPSC		
F1484-06 12	Standard Test Methods for Performance of Steam Cookers	IgCC						
F1488-03 09E1	Specification for Coextruded Composite Pipe	IPC	IPSDC	IRC	IgCC			
F1496-99(2005)e4 12	Standard Test Method for Performance of Convection Ovens	IgCC						
F1499-04(2008) 12	Specification for Coextruded Composite Drain, Waste, and Vent Pipe (DWV)	IPSDC						
F1667-05 11A E1	Specification for Driven Fasteners: Nails, Spikes, and Staples	IBC	IRC					
F1673-04(2005) 10	Standard Specification for Polyvinylidene Fluoride (PVDF) Corrosive Waste Drainage Systems	IPC						
F1807-08 12	Specifications for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing <u>and</u> SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	IPC	IRC	IMC				
F1924-06 12	Standard Specification for Plastic Mechanical Fittings for Use on Outside Diameter Controlled Polyethylene Gas Distribution Pipe and Tubing	IMC						
F1960-99 12	Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-linked Polyethylene (PEX) Tubing	IPC	IRC	IMC				
F1974-08 09	Specification for Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Composite Pressure Pipe	IPC	IRC	IMC				
F1986-01(2006) (2011)	Specification for Multilayer Pipe, Type 2, Compression Fittings and Compression Joints for Hot and Cold Drinking Water Systems	IPC	IRC					
F2080-08 09	Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Cross-linked Polyethylene (PEX) Pipe	IPC	IRC					

F2098-08	Standard Specification for Stainless Steel Clamps for <u>Securing SDR9 Cross-Linked Polyethylene (PEX) Tubing to Metal Insert and Plastic Insert Fittings</u>	IPC	IRC						
F2159-05 11	Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing <u>and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing</u>	IPC							
F2200-05 11B	Standard Specification for Automated Vehicular Gate Construction	IRC	IFC						
F2262-05 09	Standard Specification for Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene Tubing OD Controlled SDR9	IPC	IRC						
F2306/F 2306M-08 11	Specification for 12" to 60" 300 to 1500 mm annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications	IPC							
F2387-04(2012)	Standard Specification for Manufactured Safety Vacuum Release Systems, Swimming (SVRS) for Pools, Spas and Hot Tubs	IBC							
F2389-07-04 10	Specification for Pressure-Rated Polypropylene (PP) Piping Systems	IPC	IRC	IMC					
F2434-08 09	Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp ring for SDR9 Cross-Linked Polyethylene (PEX) Tubing and SDR9 Cross-Linked Polyethylene/Aluminum/Cross-Linked Polyethylene (PEX-AL-PEX) Tubing	IPC	IRC	IMC					
F2735-09	Standard Specification for <u>Plastic Insert Fittings</u> for SDR9 Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing	IMC	IPC	IRC					
F2769-09 10	Polyethylene of Raised Temperature (PE-RT) Plastic Hot and Cold-Water Tubing and Distribution Systems	IMC	IPC	IRC					
AWCI	The Association of the Wall & Ceiling Industries International								
Standard Reference Number	Title	Referenced in Code(s):							
12-B-98 04	Technical Manual 12-B Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire-Resistive Materials; an Annotated Guide, First Second Edition	IBC							
AWPA	American Wood Protection Association								
Standard Reference Number	Title	Referenced in Code(s):							

M4—08 11	Standard for the Care of Preservative-Treated Wood Products	IBC	IRC						
U1—11 14	USE CATEGORY SYSTEM: User Specification for Treated Wood except Section 6, Commodity Specification H	IBC	IRC						
AWS	American Welding Society								
Standard Reference Number	Title	Referenced in Code(s):							
A5.8-04M/A5.8:2011	Specifications for Filler Metals for Brazing and Braze Welding	IRC	IMC	IPC					
D1.3-98/D1.3M:2008	Structural Welding Code-Sheet Steel	IBC							
D1.4-1998 /D1.4M:2011	Structural Welding Code - Reinforcing Steel <u>Including Metal Inserts and Connections in Reinforced Concrete Construction</u>	IBC							
AWWA	American Water Works Association								
Standard Reference Number	Title	Referenced in Code(s):							
C104-99/A21.4-08	Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water	IRC	IPC						
C110/A21.10-03 12	Standard for Ductile-Iron and Gray-Iron Fittings, 3 in through 48 Inches for Water	IRC	IPC	IMC					
C111-09/A21.11-12	Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings	IPC	IFGC						
C115-A21.15-99 11	Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges	IRC	IPC	IMC					
C151/A21.51-02 09	Standard for Ductile-Iron Pipe, Centrifugally Cast for Water	IRC	IPC	IMC					
C153/A21.53-00 11	Standard for Ductile-Iron Compact Fittings for Water Service	IRC	IPC	IMC					
C510-00 07	Double Check Valve Backflow Prevention Assembly	IRC	IPC						
C511-00 07	Reduced-Pressure Principle Backflow Prevention Assembly	IRC	IPC						
C651-99 05	Disinfecting Water Mains	IPC							
C652-02 11	Disinfection of Water-Storage Facilities	IPC							
BHMA	Builders Hardware Manufacturers' Association								
Standard Reference Number	Title	Referenced in Code(s):							

A 156.19-2007 <u>2013</u>	Power Assist and Low Energy Power Operated Doors	IBC	IFC							
CDPH		California Department of Public Health								
Standard Reference Number	Title	Referenced in Code(s):								
CDPH Section 01350	EHLB Standard Method for the Testing and Evaluation of VOC Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1(2010)	IgCC								
CGA		Compressed Gas Association								
Standard Reference Number	Title	Referenced in Code(s):								
C-7 (2004) (2011)	Guide to Preparation of Precautionary Labeling and Marking of Compressed Gas Containers	IFC								
ANSI/CGA P-18-2006	Standard for Bulk Inert Gas Systems at Consumer Sites (an American National Standard)	IFC								
P-20 (2003) (2009)	Standard for Classification of Toxic Mixtures	IFC								
P-23 (2003) (2008)	Standard for Categorizing Gas Mixtures Containing Flammable and Nonflammable Components	IFC								
S-1.1 (2005) (2011)	Pressure Relief Device Standards - Part 1 - Cylinders for Compressed Gases	IFC	IFGC							
S-1.3 (2005) (2008)	Pressure Relief Device Standards - Part 3 - Stationary Storage Containers for Compressed Gases	IFC	IFGC							
CPA		Composite Panel Association								
Standard Reference Number	Title	Referenced in Code(s):								
A135.4-2004 <u>2012</u>	Basic Hardboard	IBC	IRC							
A135.5-2004 <u>2012</u>	Prefinished Hardboard Paneling	IBC	IRC							
A135.6-2006 <u>2012</u>	Hardboard Engineered Wood Siding	IBC	IRC							
A208.1-99 <u>2009</u>	Particleboard	IBC	IRC							
CRRC		Cool Roof Rating Council								
Standard Reference Number	Title	Referenced in Code(s):								
CRRC-1-2040 <u>12</u>	Cool Roof Rating Council Standard	IgCC								
CSA		Canadian Standards Association CSA Group								
Standard Reference Number	Title	Referenced in Code(s):								

ASME A17.1/CSA B44—2013	Safety Code for Elevators and Escalators	IBC	IFC	IEBC	IRC	IPMC				
ASME A112.18.1-2005 2012/ CSA B125.1-2005 2012	Plumbing Supply Fittings	IPC	IRC							
ASME A112.18.2-2005 2011/ CSA B125.2-2005 2011	Plumbing Waste Fittings	IRC	IPC							
ASME A112.19.1 2013/ CSA B45.2-08 13	Enameled Cast-Iron and Enameled Steel Plumbing Fixtures	IRC	IPC							
A112.19.2-2008 2013/ CSA B45.1-08 13	Ceramic Plumbing Fixtures	IPC	IRC							
ASME A112.19.3-2008/ CSA B45.4-08(R2013)	Stainless-Steel Plumbing Fixtures	IRC	IPC							
ASME A112.19.5-2011/ CSA/B45.15-09 11	Flush Valves and Spuds Trim for Water Closets, Urinals, Bowls and Tanks	IPC	IRC							
ASME A112.19.7-2012/ CSA B45.10-09 2012	Hydromassage Bathtubs Appliances Systems	IPC	IRC							
ASME A112.3.4-2013/CSA B45.9-99(R2008) 13	Macerating Systems and Related Components	IRC	IPC							
ASSE 1016/ASME A112.1016/CSA B125.16-2011 is a replacement for ASSE 1016-2010	Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	IPC	IRC	IgCC						
CSA B45.5-02 (R2008) 11/ IAPMO Z124-2011	Plastic Plumbing Fixtures	IRC	IPC							
B64.1.1-04 11	Vacuum Breakers, Atmospheric Type (AVB)	IRC	IPC							
B64.1.2-07 11	Pressure Vacuum Breakers (PVB)	IRC	IPC							
B64.1.3-07 11	Spill Resistant Pressure Vacuum Breakers (SRPVB)	IPC	IRC							
B64.2-04 11	Vacuum Breakers, Hose Connection Type (HCVP)	IRC	IPC							
B64.2.1-07 11	Vacuum Breakers, Hose Connection (HCVB) with Manual Draining Feature	IRC	IPC							
B64.2.1.1-07 11	Hose Connection Dual Check Vacuum Breakers (HCDVB)	IRC	IPC							
B64.2.2-04 11	Vacuum Breakers, Hose Connection Type (HCVP) with Automatic Draining Feature	IRC	IPC							
B64.3-07 11	Dual Check Valve Backflow Preventers Atmospheric Port (DCAP)	IRC	IPC							
B64.4-07 11	Reduced Pressure Principle Backflow Preventers (RP)	IRC	IPC							
B64.4.1-07 11	Reduced Pressure Principle for Fire Systems (RPF)	IRC	IPC							
B64.5-07 11	Double Check Backflow Preventers (DCVA)	IRC	IPC							
B64.5.1-07 11	Double Check Valve Backflow Preventers for Fire Systems (DCVAF)	IRC	IPC							
B64.6-07 11	Dual Backflow Preventers Check Valve (DuC)	IPC	IRC							
B64.7-07 11	Laboratory Faucet Vacuum Breakers (LFVB)	IRC	IPC							
B64.10.1-07 11	Manual for the Selection, Installation, Maintenance and Field Testing of Backflow Preventers	IPC								

	Devices								
B79-08 (R2013)	Commercial and Residential Drains, and Cleanouts	IPC							
CSA B125.3-2005 12	Plumbing Fittings	IRC	IPC						
B137.1-05 13	Polyethylene (PE) Pipe , Tubing and Fittings for Cold Water Pressure Services	IRC	IPC						
B137.2-05 13	Polyvinylchloride PVC Injection-Moulded Gasketed Fittings for Pressure Applications	IRC	IPC	ISPSC					
B137.3-05 13	Rigid Poly (Vinyl Chloride) (PVC) Pipe for Pressure Applications	IRC	IPC	IPSDC					
B137.5-05 13	Cross-Linked Polyethylene (PEX) Tubing Systems for Pressure Applications	IRC	IPC						
B137.6-05 13	Chlorinated Polyvinylchloride CPVC Pipe, Tubing and Fittings for Hot and Cold Water Distribution Systems	IRC	IPC	ISPSC					
B137.9-02 13	Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure-Pipe Systems	IRC	IPC	IMC					
B137.10M-05 13	Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX-AL-PEX) Composite Pressure-Pipe Systems	IRC	IPC	IMC					
B137.11-05 13	Polypropylene (PP-R) Pipe and Fittings for Pressure Applications	IRC	IPC						
B181.1-06 11	Acrylonitrile-butadiene-stryrene (ABS) Drain, Waste, and Vent Pipe and Pipe Fittings	IRC	IPC	IPSDC					
B181.2-06 11	Polyvinylchloride PVC Drain, and chlorinated polyvinylchloride (CPVC) Drain, Waste, and Vent Pipe and Pipe Fittings	IRC	IPC	IPSDC					
B181.3-06 11	Polyolefin and polyvinylidene fluoride (PVDF) Laboratory Drainage Systems	IRC	IPC						
B182.1- 06 11	Plastic drain and sewer pipe and pipe fittings	IPC	IPSDC						
B182.2-06 11	PSM type polyvinylchloride (PVC) sewer pipe and fittings	IRC	IPC	IPSDC					
B182.4-06 11	Profile polyvinylchloride PVC Sewer Pipe and Fittings	IRC	IPC	IPSDC					
B182.6-06 11	Profile Polyethylene (PE) Sewer Pipe and Fittings for leak proof sewer applications	IRC	IPC						
B182.8-06 11	Profile Polyethylene (PE) Storm Sewer and Drainage Pipe and Fittings	IRC	IPC						
B356-00(2005) 10	Water Pressure Reducing Valves for Domestic Water Supply Systems	IPC	IRC						
B481.1-07 12	Testing and Rating of Grease Interceptors Using Lard	IPC							
B602-05 10	Mechanical Couplings for Drain, Waste, and Vent Pipe and Sewer Pipe	IRC	IPC	IPSDC					
CAN/CSA A257.1M-92 2009	Circular Concrete Culvert, Storm Drain, Sewer Pipe and Fittings	IRC	IPC	IPSDC					

CAN/CSA A257.2M-92 2009	Reinforced Circular Concrete Culvert, Storm Drain, Sewer Pipe and Fittings	IRC	IPC	IPSDC						
CAN/CSA A257.3M-92 2009	Joints for Circular Concrete Sewer and Culvert Pipe, Manhole Sections, and Fittings Using Rubber Gaskets	IRC	IPC	IPSDC						
B137.11-05 13	Polypropylene (PP-R) Pipe and Fittings for Pressure Applications	IRC	IPC							
B45.3-02 (R2008)	Porcelain Enameled Steel Plumbing Fixtures	IRC	IPC							
0437-Series-93 (R2006)	Standards on OSB and Waferboard (Reaffirmed 2001)	IRC								
ANSI CSA America FC 1-2003 2012 to be relocated under ANSI	Stationary Fuel Cell Power Systems	IFGC	IMC	IRC						
CAN/CSA B366.1-2009 2011	Solid-Fuel-Fired Central Heating Appliances	IgCC								
B483.1-07 14	Drinking Water Treatment Systems	IRC	IPC							
CSA C22.2 No. 218.1-M89(R2006 2011)	Spas, Hot Tubs and Associated Equipment	ISPSC								
C22.2 No. 236 05 -11 (R2009) M89(R2006)	Heating and Cooling Equipment (binational standard with UL 1995)	ISPSC								
C22.2 No. 108-01 (R2010)	Liquid Pump	ISPSC								
CTI	Cooling Technology Institute									
Standard Reference Number	Title	Referenced in Code(s):								
STD-201 (2009 11)	Standard for Certification of Water Cooling Tower Thermal Performance	IECC								
DASMA	Door and Access Systems Manufacturers									
Standard Reference Number	Title	Referenced in Code(s):								
105-92(R2004) -13	Test Method for Thermal Transmittance and Air Infiltration of Garage Doors	IECC								
107-97 (R2004 2012)	Room Fire Test Standard for Garage Doors Using Foam Plastic Insulation	IBC								
108-05 12	Standard Method for Testing Sectional Garage Doors and Rolling Doors: Determination of Structural Performance Under Uniform Static Air Pressure Difference	IBC	IRC							
115-05 12	Standard Method for Testing Sectional Garage Doors and Rolling Doors: Determination of Structural Performance Under Missile Impact and Cyclic Wind	IBC	IRC							

	Pressure									
FEMA		Federal Emergency Management Agency								
Standard Reference Number	Title	Referenced in Code(s):								
FEMA P646-08 12	Guidelines for Design of Structures for Vertical Evacuation from Tsunamis	IBC								
FEMA- FA/ TB-2-08	Flood-D damage Resistant Materials Requirements	IRC								
FIA TB 11—04 FEMA-TB 11—01	Crawlspace Construction for Buildings Located in Special Flood Hazard Area	IBC	IRC							
FM		FM Global								
Standard Reference Number	Title	Referenced in Code(s):								
FM 4470 2009, 2013	Approval Standard for Single-Ply Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction Covers.	IBC								
4474-04 11	American National Standard for Evaluating the Simulated Wind Uplift Resistance of Roof/Ceiling Assemblies, -Plastic Interior Finish Materials, Plastic Exterior Building Panels, Wall/Ceiling Coating Systems, Interior or Exterior Finish Systems Using Static Positive and/or Negative Differential Pressures	IBC								
4880 (2006) 2010	Approval Standard for Class 1 Rating of Evaluating Insulated Wall or Wall and Roof/Ceiling Panels, Assemblies, Plastic Interior Finish Materials, Plastic Exterior Building, Wall/Ceiling or Coatings Systems, Interior or and Exterior Finish Systems	IBC	IRC							
GA		Gypsum Association								
Standard Reference Number	Title	Referenced in Code(s):								
GA 216-07 13	Application and Finishing of Gypsum Panel Products	IBC								

GA-253-07 <u>12</u>	Recommended Standard Specification for the Application of Gypsum Sheathing	IRC								
GA-600-09 <u>12</u>	Fire- Resistance Design Manual, 48 th 20 th Edition	IBC								
HPVA	Hardwood Plywood and Veneer Association									
Standard Reference Number	Title	Referenced in Code(s):								
HP-1-2009 <u>2013</u>	Standard for Hardwood and Decorative Plywood	IBC	IRC	IgCC						
IAPMO	International Association of Plumbing and Mechanical Officials									
Standard Reference Number	Title	Referenced in Code(s):								
CSA B45.5-11/ IAPMO Z124-2011 replaces ANSI Z124.1, 1.2, 2, 3, 4, 6, 9	Plastic Plumbing Fixtures	IRC	IPC							
IAPMO Z124.7-2012 replaces ANSI Z124.7-97	Prefabricated Plastic Spa Shells	ISPSC								
ICC	International Code Council									
Standard Reference Number	Title	Referenced in Code(s):								
ICC A117.1-09 <u>14</u>	Accessible and Usable Buildings and Facilities	IBC	IFC	IZC	IEBC	IRC				
IBC-42 <u>15</u>	International Building Code	IRC	IFC	IMC	IPC	IPSDC	IFGC	IECC		IEBC IWUIC
IECC-42 <u>15</u>	International Energy Conservation Code	IBC	IRC	IMC	IPC	IFGC	IgCC	ISPSC		
IEBC-42 <u>15</u>	International Existing Building Code	IBC	IMC	IPMC	IgCC					
IFC-42 <u>15</u>	International Fire Code	IBC	IRC	IMC	IPC	IFGC	IECC	IEBC		IPMC
IFGC-42 <u>15</u>	International Fuel Gas Code	IBC	IRC	IFC	IMC	IPC	IECC	IEBC		IPMC
IMC-42 <u>15</u>	International Mechanical Code	IBC	IRC	IFC	IPC	IFGC	IECC	IEBC		IPMC
ICCPC-42 <u>15</u>	International Performance Code	IgCC								
IPC-42 <u>15</u>	International Plumbing Code	IBC	IRC	IFC	IMC	IPSDC	IFGC	IEBC		IPMC
IPSDC-42 <u>15</u>	International Private Sewage Disposal Code	IBC	IPC	IRC						
IPMC-42 <u>15</u>	International Property Maintenance Code	IBC	IRC	IFC	IEBC					
IRC-42 <u>15</u>	International Residential Code	IBC	IFC	IMC	IFGC	IEBC	IPC	IPMC		IgCC
IWUIC-42 <u>15</u>	International Wildland-Urban Interface Code	IBC	IFC							
IZC-42 <u>15</u>	International Zoning Code	IBC	IMC							
ICC 500-08 <u>14</u>	ICC/NSSA Standard on the Design and Construction of Storm Shelters	IBC	IRC							

ICC 600-08 14	Standard for Residential Construction In High Wind Regions	IBC	IRC						
ICC 700-2008 12	National Green Building Standard	IgCC							
IgCC-42 15	International Green Construction Code	IBC	ICCPC	IEBC	IECC	IFC	IFGC	IMC	IPC
IES		Illuminating Engineering Society							
Standard Reference Number	Title	Referenced in Code(s):							
TM-15-07 11	Luminaire Classification System for Outdoor Luminaires	IgCC							
IIAR		International Institute of Ammonia Refrigeration							
Standard Reference Number	Title	Referenced in Code(s):							
2-99 2014 (Addendum A-2005)	Addendum A to Equipment, Design, and Installation of Ammonia Mechanical Refrigerating Systems	IMC							
ISEA		International Safety Equipment Association							
Standard Reference Number	Title	Referenced in Code(s):							
ANSI/ISEA Z358.1-98 2009	Emergency Eyewash and Shower Equipment	IPC							
MSS		Manufacturers Standardization Society of the Valve and Fittings Industry							
Standard Reference Number	Title	Referenced in Code(s):							
MSS SP-6-04 2012	Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings	IFGC							
ANSI MSS SP-58 4993 2009	Pipe Hangers and Supports –Materials, Design, Manufacture, Selection, Application, and Installation	IRC	IFGC						
SP-69-2002 ANSI/MSS SP-58-2009	Pipe Hangers and Supports – <u>Materials, Design, Manufacture, Selection and Application and Installation</u> <i>(SP69 will be withdrawn in 2014 and ANSI MSS SP-58-2009 replaces it)</i>	IMC							
NFPA		National Fire Protection Association							
Standard Reference Number	Title	Referenced in Code(s):							

10-40 <u>13</u>	Standard for Portable Fire Extinguishers	IFC	IBC						
13-40 <u>13</u>	Standard for the Installation of Sprinkler Systems	IFC	IBC						
13D-40 <u>13</u>	Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes	IFC	IRC	IBC					
13R- 40 <u>13</u>	Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies Up to and Including Four Stories in Height	IFC	IBC	IEBC					
14-40 <u>13</u>	Standard for the Installation of Standpipe, Private Hydrants and Hose Systems	IFC	IBC						
15-12	Standard for the Water Spray Fixed Systems for Fire Protection	IFC							
16-11	Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems	IFC	IBC						
17-09 <u>13</u>	Standard for Dry Chemical Extinguishing Systems	IFC	IBC						
17A-09 <u>13</u>	Standard for Wet Chemical Extinguishing Systems	IFC	IBC						
20- 40 <u>13</u>	Standard for the Installation of Stationary Pumps for Fire Protection	IFC	IBC						
22-08 <u>13</u>	Standard for the Water Tanks for Private Fire Protection	IFC							
24- 40 <u>13</u>	Standard for the Installation of Private Fire Service Mains and Their Appurtenances	IFC							
25-44 <u>13</u>	Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems	IFC	IPMC						
30A-42 <u>15</u>	Code for Motor Fuel Dispensing Facilities and Repair Garages	IFC	IMC	IFGC					
30B-42 <u>15</u>	Code for the Manufacture and Storage of Aerosol Products	IFC							
31-44 <u>15</u>	Standard for the Installation of Oil-Burning Equipment	IFC	IRC	IMC	IBC				

32-44 <u>15</u>	Drycleaning Plants	IFC	IBC						
33-44 <u>15</u>	<u>Standard for Spray Application Using Flammable or Combustible Materials</u>	IFC							
34-44 <u>15</u>	<u>Standard for Dipping and Coating Processes Using Flammable or Combustible Liquids</u>	IFC							
35-44 <u>15</u>	<u>Standard for Manufacture of Organic Coatings</u>	IFC							
37-40 <u>14</u>	Installation and Use of Stationary Combustion Engines and Gas Turbines	IMC	IFGC						
40-44 <u>15</u>	Standard for the Storage and Handling of Cellulose Nitrate Film	IFC	IBC						
45-44 <u>15</u>	Standard on Fire Protection for Laboratories Using Chemicals	IMC							
50-04 replaced with 55-13 that incorporates NFPA 50	Bulk Oxygen Systems at Consumer Sites <u>Compressed Gases and Cryogenic Fluids Code</u>	IPC							
51- 07 13	<u>Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes</u>	IFC	IPC	IFGC					
51A-12	<u>Standard for Acetylene Cylinder Charging Plants</u>	IFC							
52-40 <u>13</u>	Vehicular Fuel <u>Gaseous</u> System Code	IFC							
55-40 <u>13</u>	Standard for the Storage, Use and Handling of Compressed Gases and Cryogenic Fluids Code in Portable and Stationary Containers Cylinders and Tanks	IFC							
58-44 <u>13</u>	Liquefied Petroleum Gas Code	IFC	IBC	IRC	IMC	IFGC			
59A 40 <u>13</u>	<u>Standard for the Production, Storage and Handling of Liquefied Natural Gas (LNG)</u>	IFC							
61- 08 13	Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities	IFC	IBC						

69-08 <u>14</u>	Standard on Explosion Prevention Systems	IFC	IMC						
72- 40 <u>13</u>	National Fire Alarm and Signaling Code	IFC	IBC	IRC	IMC	IEBC	IgCC	IWUIC	
80- 40 <u>13</u>	Standard for Fire Doors and Other Opening Protectives	IFC	IBC						
82-09 <u>14</u>	Standard on Incinerators, Waste and Linen Handling Systems and Equipment, 2009 Edition	IMC	IFGC	IBC	IRC				
85-11	Boiler and Construction Combustion Systems Hazards Code	IFC	IBC	IRC	IFGC				
86-44 <u>15</u>	Standard for Ovens and Furnaces	IFC							
88A-44 <u>15</u>	Standard for Parking Structures	IFGC							
91-40 <u>15</u>	Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids	IMC							
92B-09 <u>12</u>	Smoke Control Management Systems in Malls, Atria, and Large Spaces	IFC	IBC	IMC					
96-44 <u>13</u>	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operation	IMC							
99-42 <u>15</u>	Health Care Facilities Code	IBC	IFC	IEBC	IBC				
101-42 <u>15</u>	Life Safety Code	IBC	IFC	IEBC					
105-40 <u>15</u>	Installation Standard of for Smoke Door Assemblies and Other Opening Protectives	IBC	IFC						
110-40 <u>15</u>	Standard for Emergency and Standby Power Systems	IFC	IBC	IECC					
111-40 <u>15</u>	Standard on Stored Electrical Energy Emergency and Standby Power Systems	IFC	IECC	IBC					
120-40 <u>15</u>	Standard for Fire Prevention and Control in Coal Mines	IFC	IBC						
160-44 <u>15</u>	Standard for the Use of Flame Effects Before an Audience	IFC							
170-09 <u>15</u>	Standard for Fire Safety and Emergency Symbols	IFC	IBC						

204-07 15	Standard for Smoke and Heat Venting	IFC							
211-40 13	Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances	IFC	IBC	IRC	IMC	IFGC			
221-09 15	Standard for High Challenge Fire Walls, Fire Walls and Fire Barrier Walls, 2009 Edition	IBC							
241-09 13	Standard for Safeguarding Construction, Alteration, and Demolition Operations	IFC							
253-44 15	Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source	IBC	IFC						
259-08 13	Standard Test Method for Potential Heat of Building Materials	IBC	IRC						
260-09 13	Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture	IFC							
261-09 13	Standard Method of Test for Determining Resistance of Mock-Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes	IFC							
262-44 15	Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces	IMC							
274-09 13	Standard Test Method to Evaluate Fire Performance Characteristics of Pipe Insulation	IMC							
275-40 13	Standard Method of Fire Tests for the Evaluation of Thermal Barriers Used Over Foam Plastic Insulation	IBC	IRC						
285-11	Standard Fire Test Method for the Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible	IBC							

	Components								
286-44 15	Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth	IFC	IBC	IRC					
288-12	Standard Methods of Fire Tests of Floor Horizontal Fire Door Assemblies Installed in Horizontally Fire-Resistance-Rated Floor Systems	IBC							
289-09 13	Standard Method of Fire Test for Individual Fuel Packages	IFC	IBC						
318-09 15	Standard for the Protection of Semiconductor Fabrication Facilities	IFC							
385- 07 12	Standard for Tank Vehicles for Flammable and Combustible Liquids	IFC							
407-12	Standard for Aircraft Fuel Servicing	IFC							
409-44 15	Aircraft Hangers	IFC	IBC	IFGC					
430-04 400-13	Storage of Liquid and Solid Oxidizers Hazardous Material Code	IFC							
484-42 15	Standard for Combustible Metals	IFC	IBC						
490-10 400-13	Storage of Ammonium Nitrate Hazardous Material Code	IFC							
495-40 13	Explosive Materials Code	IFC							
498-40 13	Standard for Safe Havens and Interchange Lots for Vehicles Transporting Explosives	IFC							
501-40 13	Standard on Manufactured Housing	IRC							
505-44 13	Fire Safety Standard Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations	IFC							
654-06 13	Standard for Prevention of Fire & Dust Explosions from the Manufacturing, Processing, and	IBC	IFC						

	Handling of Combustible Particulate Solids								
655-12	<u>Standard for the Prevention of Sulfur Fires and Explosions</u>	IBC	IFC						
664-12	<u>Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities</u>	IBC	IFC						
701-10	<u>Standard Methods of Fire Tests for Flame-Propagation of Textiles and Films</u>	IFC	IBC						
703- 42 15	<u>Standard for Fire Retardant Treated Wood and Fire Retardant Coatings for Building Materials</u>	IFC							
704-12	<u>Standard System for the Identification of the Hazards of Materials for Emergency Response</u>	IFC	IMC	IBC					
720- 09 15	<u>Standard for the Installation of Carbon Monoxide (CO) Warning Equipment Dwelling Units</u>	IFC	IBC	IRC					
750-40 13	<u>Standard on Water Mist Fire Protection Systems</u>	IFC	IMC	IFGC					
853-40 15	<u>Installation of Stationary Fuel Cell Power Systems</u>	IRC							
1122- 08 13	<u>Code for Model Rocketry</u>	IFC							
1123-40 13	<u>Code for Fireworks Display</u>	IFC							
1124- 08 13	<u>Code for the Manufacturing, Transportation, Storage and Retail Sales of Fireworks and Pyrotechnic Articles</u>	IFC	IBC						
1125-12	<u>Code for the Manufacture of Model Rocket and High Power Rocket Motors</u>	IFC							
1126-44 15	<u>Standard for the Use of Pyrotechnics Before a Proximate Audience</u>	IFC							
1127- 08 13	<u>Code for High Power Rocketry</u>	IFC							
1142-12	<u>Standard on Water Supply for Suburban and Rural Fire Fighting</u>	IFC							
2001-12	<u>Standard on Clean Agent Fire Extinguishing</u>	IFC	IBC						

	Systems									
NSF		NSF International								
Standard Reference Number	Title	Referenced in Code(s):								
3-2008 2010	Commercial Warewashing Equipment	IPC	IgCC							
14-2008e 2011	Plastics Piping System Components and Related Materials	IRC	IPC	ISPSC						
18-2007 2012	Manual Food and Beverage Dispensing Equipment	IPC								
40-2000 2012	Residential Wastewater Treatment Systems	IPSDC								
41-1999 2011	Nonliquid Saturated Treatment Systems (Composing Toilets)	IPSDC								
42-2007ae 2011	Drinking Water Treatment Units - Aesthetic Effects	IRC	IPC							
44-2007 2012	Residential Cation Exchange Water Softeners	IRC	IPC	IgCC						
50-2009 2012	Equipment for Swimming Pools, Spas, Hot Tubs, and other Recreational Water Facilities	IgCC	ISPSC							
53-2007a 2011a	Drinking Water Treatment Units - Health Effects	IRC	IPC							
58-2007 2012	Reverse Osmosis Drinking Water Treatment Systems	IRC	IPC	IgCC						
61-2008 2012	Drinking Water System Components - Health Effects	IRC	IPC	IgCC						
62-2007 2012	Drinking Water Distillation Systems	IPC								
350-2011	Onsite Residential and Commercial Water Reuse Treatment Systems	IgCC								
PCA		Portland Cement Association								
Standard Reference Number	Title	Referenced in Code(s):								
100-07 12	Prescriptive Design of Exterior Concrete Walls for One and Two-Family Dwellings (Pub. No. EB241)	IRC								
PCI		Prestressed Concrete Institute								

Standard Reference Number	Title	Referenced in Code(s):							
MNL 124-89 11	Design for Fire Resistance of Precast Prestressed Concrete	IBC							
PDI		Plumbing and Draining Institute							
Standard Reference Number	Title	Referenced in Code(s):							
PDI G101 (2003) 2012	Testing and Rating Procedure for Grease Interceptors with Appendix of Sizing and Installation Data	IPC							
PTI		Post-Tensioning Institute							
Standard Reference Number	Title	Referenced in Code(s):							
PTI DC -2007 10.5-12	Standard Requirements for Design and Analysis of Shallow Post-tensioned Concrete Foundation on Expansive Soils, Second Edition	IBC							
PTI DC 2007 10.5-12	Standard Requirements for Design and Analysis of Shallow Post-Tensioned Concrete Foundations on Expansive Soils, Third Edition	IBC							
RMI		Rack Manufacturers Institute							
Standard Reference Number	Title	Referenced in Code(s):							
ANSI/MH16.1-08 12	Specification for Design, Testing and Utilization of Industrial Steel Storage Racks	IBC							
SBCA		Structural Building Components Association							
Standard Reference Number	Title	Referenced in Code(s):							
BCSI-2008 2013	Building Component Safety Information Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected	IRC							

	Wood Trusses								
CFS-BCSI-2008	<u>Cold Formed Steel Building Component Safety Information (CFSBCSI) Guide to Good Practice for Handling, Installing & Bracing of Cold-formed Steel Trusses</u>	IRC							
SMACNA		Sheet Metal & Air Conditioning Contractors National Assoc. Inc.							
Standard Reference Number	Title	Referenced in Code(s):							
SMACNA- 85 2012	HVAC Air Duct Leakage Test Manual <u>2nd Edition</u>	IECC-C	IgCC						
SMACNA- ANSI-2005 2015	HVAC Duct Construction Standards - Metal and Flexible <u>4th Edition (ANSI)</u>	IMC							
SPRI		Single-Ply Roofing Institute							
Standard Reference Number	Title	Referenced in Code(s):							
ANSI/SPRI RP-4- 08 13	Wind Design Guide for Ballasted Single-ply Roofing Systems	IBC							
ANSI/SPRI/FM4435-ES-1- 03 11	Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems	IBC							
TIA		Telecommunications Industry Association							
Standard Reference Number	Title	Referenced in Code(s):							
222-G-2005	Structural Standards for Antenna Supporting Structures and Antennas, including - Addendum 1, 222-G-1 dated 2007, <u>and Addendum 2, 222-G-2 Dated 2009, Addendum 3, 222-3 dated 2013, and Addendum 4, 222-G-4 dated 2014</u>	IBC							
TMS		The Masonry Society							
Standard Reference Number	Title	Referenced in Code(s):							
216- 07 2013	Standard Method for Determining Fire Resistance of	IBC							

	Concrete and Masonry Construction Assemblies								
302-07 2012	Standard Method for Determining the Sound Transmission Class Rating for Masonry Walls	IBC	IRC	IgCC					
402-44 2013	Building Code for Masonry Structures	IBC	IRC						
403-40 2013	Direct Design Handbook for Masonry Structures	IBC	IRC						
602-44 2013	Specification for Masonry Structures	IBC	IRC						
TPI	Truss Plate Institute								
Standard Reference Number	Title	Referenced in Code(s):							
TPI 1-2007 2012	National Design Standards for Metal Plate Connected Wood Truss Construction	IBC	IRC						
UL	Underwriters Laboratories								
Standard Reference Number	Title	Referenced in Code(s):							
9-2009	Fire Tests of Window Assemblies, with Revisions through April 2005	IBC							
14B-2008	Sliding Hardware for Standard Horizontally Mounted Tin Clad Fire Doors with Revisions through July 2000	IBC							
14C-2006	Swinging Hardware for Standard Tin Clad Fire Doors Mounted Singly and in Pairs, <u>with revisions through December 2008</u>	IBC							
17-2008	Vent or Chimney Connector Dampers for Oil-Fired Appliances, <u>with Revisions through January 2010</u>	IRC	IMC						
80-2007	Steel Tanks for Oil-Burner Fuels and Other Combustible Liquids <u>with Revisions through August 2009</u>	IRC	IFC						

103- 2004 2010	Factory-Built Chimneys, for Residential Type and Building Heating Appliances with Revisions through July 2012	IBC	IMC	IFGC	IRC				
127- 08 2011	Factory-Built Fireplaces - with Revisions through January 2010	IBC	IRC	IMC					
142-06	Steel Aboveground Tanks for Flammable and Combustible Liquids with Revisions through February 2010	IFC							
174-04	Household Electric Storage Tank Water Heaters - with Revisions through May 2006 September 2012	IRC	IMC						
180- 03 2012	Liquid-level Indicating Guarges for Oil Burner Fuels- with revision through March 2007 and Other Combustible Liquids	IRC	IMC						
197- 2003 2010	Commercial Electric Cooking Appliances - with revisions through March 2006 June 2011	IMC							
217-2006	Single and Multiple Stations Smoke Alarms - with revisions through April 2010 2012	IBC	IRC	IFC					
263- 03 2011	Standard for Fire Test of Building Construction and Materials with revisions through October 2007	IBC	IRC	IWUIC	IMC				
294-1999	Access Control Systems Units with Revisions through September 2010	IBC	IFC						
300-2005 (R2010)	Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Equipment with Revisions through July 16, 2010	IBC	IFC						
305- 97 2012	Panic Hardware	IBC	IFC						
325-2002	Door, Drapery, Gate, Louver and Window Operators and Systems - with Revisions through	IBC	IFC	IRC					

	<u>February 2010</u> <u>January 2012</u>								
372-2007	Automatic Electrical Controls for Household and Similar Use - Part 2: Particular Requirements for Burner Ignition Systems and Components with revisions through <u>July 25, 2011</u> <u>2012</u>	ISPSC							
378-06	<u>Draft Equipment, with Revisions through January 2010</u>	IRC	IMC						
391- 2006 <u>2010</u>	Solid-Fuel and Combination-Fuel Central and Supplementary Furnaces	IMC							
412- 2004 <u>2011</u>	Refrigeration Unit Coolers - with Revisions through <u>January 2009</u> August 2012	IMC							
499-05	Electric Heating Appliances-with revisions through <u>January 2009</u> April 2012	IMC							
555-2006	Fire Dampers-with revisions through <u>May 2010</u> <u>2012</u>	IBC	IMC						
555S-1999	Smoke Dampers - with Revisions through <u>May 2010</u> <u>2012</u>	IBC	IMC						
641- 1995 <u>2010</u>	Type L Low-Temperature Venting Systems - <u>with Revisions through July 2009</u>	IBC	IRC	IMC	IFGC				
651- 05 <u>2011</u>	Schedule 40 and Schedule 80 Rigid PVC Conduit and Fittings with revisions through <u>March 2010</u> <u>2012</u>	IFGC	IRC						
705-2004 <u>Revision 5</u>	Standard for Power Ventilators <u>with revisions through March 2012</u>	IMC							
710B-2004 <u>2011</u>	Recirculating Systems <u>with Revisions through December 2009</u>	IBC	IFC	IMC					
723-08	Standard for Test for Surface Burning Characteristics of Building Materials <u>with Revisions through September 2010</u>	<u>IBC</u>	IFC	IWUIC	IRC				

726-1995	Oil-Fired Boiler Assemblies - with Revisions through April 2010 2011	IRC	IMC	IECC					
729-03	Oil-Fired Floor Furnaces with revisions through April 2010 August 2012	IRC	IMC						
730-03	Oil-Fired Wall Furnaces with revisions through April 2010 August 2012	IRC	IMC						
731-1995	Oil-Fired Unit Heaters with Revisions through April 2010 August 2012	IMC	IECC-C						
737-07 2011	Fireplaces Stoves- with Revisions through January 2010	IRC	IMC						
793-08	Automatically Operated Roof Vents For Smoke and Heat with Revisions through September 2011	IBC	IFC						
795-2006 2011	Commercial-Industrial Gas Heating Equipment with revisions through April 2010 September 2012	IRC	IFGC						
842-07	Valves for Flammable Fluids, with Revisions through April 2011	IRC	IMC						
858-05	Household Electric Ranges - with Revisions through May 2010 April 2012	IMC	IRC						
864-03	Standard for Control Units and Accessories for Fire Alarm Systems-with Revisions through February 2010 August 2012	IBC	IFC						
867-09 2011	Electrostatic Air Cleaners-with Revisions through February 2010	IMC							
873-2007	Temperature-Indicating and -Regulating Equipment, with revisions through July 25, 2011 2012	ISPSC							
875-09	Electric Day Bath Heaters with revisions through October 2009 November 2011	IMC	IRC						
896-1993	Oil-Burning Stoves - with Revisions	IRC	IMC						

	through May 2010 <u>August 2012</u>								
900-04	Air Filter Units- with revisions through November 2009 <u>February 2012</u>	IFC	IMC						
907- 94 2010	Fireplace Accessories - with revisions through July 2006 <u>April</u> <u>2010</u>	IMC							
924-06	Emergency Lighting and Power Equipment with revisions through January 2009 <u>February 2011</u>	IBC	IFC						
959- 2004 2010	Medium Heat Appliance Factory- Built Chimneys - with Revisions through June 2010	IRC	IMC	IFGC					
1004-1- 08 2012	Standard for Rotating Electrical Machines General Requirements with revisions through June 23, 2011	ISPSC							
1026- 07 2012	Electric Household Cooking and Food Services Appliances	IRC							
1037-99	Antitheft Alarms and Devices with <u>Revisions through</u> <u>December 2009</u>	IFC							
1040-1996	Fire Test of Insulated Wall Construction - with Revisions through September 2007 <u>October 2012</u>	IBC	IRC						
1042- 94 2009	Electric Baseboard Heating Equipment- with revisions through February 2008 <u>June 2010</u>	IRC							
1046- 00 2010	Grease Filters for Exhaust Ducts with <u>revisions through</u> <u>January 2012</u>	IMC							
1081-2008	Standard for Swimming Pool Pumps, Filters and Chlorinators, with revisions through March 31, 2010 <u>November 2011</u>	ISPSC							
1240-2005	Electric Commercial Clothes-Drying Equipment - with Revisions through October 2009 <u>February 2011</u>	IMC							
1261-2001	Electric Water Heaters for Pools and Tubs - with Revisions through	IRC	IMC	ISPSC					

	<u>June 16, 2010</u> <u>July 2012</u>								
1275-2005	Flammable Liquid Storage Cabinets with Revisions through May 2006 February 2010	IFC							
1315-95	Standard for Safety for Metal Waste Paper containers- with Revisions through August 2007 September 2012	IFC							
1363-2007	Relocatable Power Taps - with revisions through October 2009 September 2012	IFC							
1453-04	Electric Booster and Commercial Storage Tank Water Heaters - with Revisions through December 2009 <u>July 2011</u>	IRC	IMC						
1482-40 <u>2011</u>	Solid-Fuel Type Room Heaters	IBC	IRC	IMC	IgCC				
1563-2009	Standard for Electric Hot Tubs, Spas and Association Equipment with revisions through March 31, 2010 July 2012	ISPSC							
1673- 06 <u>2010</u>	Electric Space Heating Cables-with revision through July 2003 <u>October 2011</u>	IRC							
1693- 02 <u>2010</u>	Electric Radiant Heating Panels and Heating Panel Sets, <u>with Revisions through October 2011</u>	IRC							
1703-02	Flat-plate Photovoltaic Modules and Panels - with revisions through April 2008 <u>May 2012</u>	IBC							
1738- 06 <u>2010</u>	Venting Systems for Gas-Burning Appliances, Categories II, III and IV, <u>with Revisions through May 2011</u>	IRC	IFGC						
1741- 09 <u>2010</u>	Inverters, Converters, Controllers and Interconnection System Equipment with Distributed	IRC							

	Energy Resources- with revisions through November 2005								
1815-09 2012	Standard for Nonducted Heat Recovery Ventilators	IMC							
1897-2004 2012	Uplift Tests for Roof Covering Systems with revisions through May 2008	IBC							
1978-05 2010	Grease Ducts	IMC							
1994-04	Luminous Egress Path Marking Systems with Revisions through April 2010 November 2010	IBC	IFC						
1995-2005 2011	Heating and Cooling Equipment, with revisions through July 2009	IRC	IMC	ISPSC					
1996-04 2009	Electric Duct Heaters-with revisions through July 2009 November 2011	IRC	IMC						
2017-2008	Standards for General-Purpose Signaling Devices and Systems-with Revisions through October 2009 May 2011	IBC	IRC						
2024-2008 2011	Standard for Safety Optical-Fiber and Communications Cable Raceway with Revisions through April 2011	IMC							
2158-1997	For Electric Clothes Dryers - with Revisions through March 2009	IMC							
2158A-2006 2010	Outline of Investigation for Clothes Dryer Transition Duct	IRC	IMC						
2200-98 2012	Stationary Engine Generator Assemblies with Revisions through December 2009	IBC	IFC	IMC	IFGC				

2208-2005 2010	Solvent Distillation Units - with Revisions through December 2009 March 2011	IFC							
2221-2004 2010	Tests of Fire Resistive Grease Duct Enclosure Assemblies	IMC							
2335-04 2010	Fire Tests of Storage Pallets-with Revisions through March 2010 September 2012	IFC							
2518-02 2005	Air Dispersion System Materials	IMC							
2523-09	Standard for Solid Fuel-Fired Hydronic Heating Appliances, Water Heaters, and Boilers, with Revisions through October 2011	IRC	IgCC	IMC					
ULC/CAN		Underwriters Laboratories Canada							
Standard Reference Number	Title	Referenced in Code(s):							
CAN/ULC S102.2-1988 2010	Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies -with 2000 Revisions	IBC	IRC						
<p>Reason: The CP 28 Code Development Policy, Section 4.5.1 requires the updating of referenced standards to be accomplished administratively, and be processed as a Code Change Proposal for consideration by the Administrative Code Change Committee. In September 2012, a letter was sent to each developer of standard that is referenced in the International Codes, asking them to provide ICC with a list of their standards in order to update to the current edition. Above is the list of referenced standards that are to be updated based upon responses from standards developer.</p> <p>Public Hearing: Committee: AS AM D Assembly: ASF AMF DF</p>									

Public Hearing Results

Committee Action:

Approved as Modified

Errata to this proposal is contained in the [Updates to the 2013 Proposed Changes](http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf) posted on the ICC website. Please go to <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf> for more information

The following is errata that was not posted to the ICC website.

ASTM D5019, while withdrawn by ASTM, is still referenced in the IBC and IRC, so it will remain in the list of referenced standards. This standard will be removed from this update proposal.

ASTM	ASTM International	
Standard Reference Number	Title	Referenced in Code(s):
D5019-07a	Specification for Reinforced CSM Polymeric Sheet Used in Roofing Membrane	IBC, IRC

FM 4470 was indicated in the posted errata as being updated to 2013, however, the correct reference is 2012.

FM		FM Global	
Standard Reference Number	Title	Referenced in Code(s):	
FM 4470 2009 2012	Approval Standard for Single-Ply Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction.	IBC	

The following revisions are modifications to the proposal.

The following standards were in the automatic update code change proposals. Revise the referenced edition as follows.

AISI		American Iron and Steel Institute	
Standard Reference Number	Title	Referenced in Code(s):	
AISI S110-07/S1-09 (2012)	Standard for Seismic Design of Cold-Formed Steel Structural Systems-Special Moment Frames, 2007 with Supplement 1, dated 2009, (Reaffirmed 2012)	IBC	
AISI S210-07 [2012]	North American Standard for Cold-formed Steel Framing-Floor and Roof System Design, 2007, (Reaffirmed 2012)	IBC	
AISI S211-07/S1-12 (2012)	North American Standard for Cold-Formed Steel Framing-Wall Stud Design, 2007, including Supplement 1, dated 2012, (Reaffirmed 2012)	IBC	
AISI S212-07 (2012)	North American Standard for Cold-Formed Steel Framing-Header Design, 2007, (Reaffirmed 2012)	IBC	
AISI S213-07/S1-09 (2012)	North American Standard for Cold-Formed Steel Framing-Lateral Design, with Supplement 1, dated 2009, (Reaffirmed 2012)	IBC	
AISI S230-07-07/S2-08 /S3-12 (2012)	Standard for Cold-formed Steel Framing-Prescriptive Method for One- and Two-family Dwellings, 2007, with Supplement 2 3, dated 2008 dated 2012, (Reaffirmed 2012)	IBC, IRC	

The following standards will be removed from the automatic update code change proposal. The current edition will remain the referenced edition.

ACI		American Concrete Institute	
Standard Reference Number	Title	Referenced in Code(s):	
318-11	Building Code Requirements for Structural Concrete	IBC, IRC, ISPSC	

ICC		International Code Council	
Standard Reference Number	Title	Referenced in Code(s):	
ICC A117.1-2009	Accessible and Useable Buildings and Facilities	IBC, IEBC, IFC, IRC, IZC	

The following standard is not referenced and should be removed from the IMC Chapter 15.

NFPA		National Fire Protection Association	
Standard Reference Number	Title	Referenced in Code(s):	
NFPA 274-09	Standard Test Method to Evaluate Fire	IMC	

Committee Reason: The proponent indicated that AISI standard references were not revised and updated, but were instead reviewed and reaffirmed in 2012. The committee agreed that it is important to clarify this in the reference.

The committee agreed that the edition of ACI 318 should remain at 2011 instead of being updated to 2014. The specific references to sections in the ACI 318 in the International Codes are coordinated with the 2011 edition. The 2014 edition will be substantially reformatted and renumbered. The 2014 edition must be finalized before it is possible to verify that the references will still be complete and accurate. Some of the revisions to references may be considered technical revisions. This correlation may need to be done as part of the Group A codes changes next cycle. If possible to address this in the public comments for Group B, it should be done.

The committee agreed that the edition of ICC A117.1 should remain 2009 instead of being updated to 2014. The ICC A117.1 is undergoing significant changes in relation to the sizes required for accessibility. At the time of the hearings, the standard has not yet reached the stage of a public draft. Once the revisions are finalized, the scoping requirements in the IBC must be reviewed to understand the full impact on spaces and buildings. Since some of the coordination may include revisions to the codes, the reference of the new edition should be delayed to allow for this coordination effort in the Group A and Group B code change cycles.

The proponent pointed out that NFPA 274 is no longer referenced anywhere in the IMC, however, it is still included in the IMC Chapter 15. Rather than being included in the automatic update proposal, it should be removed from the IMC Chapter 15.

The committee approved the automatic updates for the remainder of the standards listed in the proposal. The proposed updates to the standard are consistent with the ICC policies for updates.

A question was raised during the testimony regarding the updating of NFPA 70, National Electrical Code. NFPA 70 will be automatically updated from the 2011 edition to the 2014 edition. The ICC Board of Directors have identified NFPA 70 as a member of the ICC family of codes, therefore, it will not be indicated in the automatic update proposal.

Assembly Action

None

Public Comment(s)

Public Comment 1:

Matthew Senecal, P.E., representing the American Concrete Institute (ACI), requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

ACI

318 - 44-14 Building Code Requirements for Structural Concrete

Commenter's Reason: At the Dallas Committee Action Hearings, a decision was made to retain the reference to ACI 318-11 instead of updating to the latest edition, ACI 318-14. This was based upon a concern expressed on the floor that, because ACI 318 is going through reorganization, specific ACI 318 section numbers cited within the 2015 IBC may become inconsistent with ACI 318-14, thereby causing confusion to the user..

On July 1, 2013, ACI assembled a task group consisting of the concerned parties to review this issue in detail. The group concluded that if the specific ACI 318 section numbers cited in the 2015 IBC can be editorially changed to the correct ACI 318-14 section numbers, then any potential problem to the user will be avoided.

Editorial changes of this kind are allowed according to Section 4.4 of CP#28. The 318-14 section references compatible with the 2015 IBC have been determined and will be forwarded to ICC Staff for inclusion in the 2015 IBC, and other ICC Codes as appropriate.

It is important to note that there are no technical changes in ACI 318-14 that affect the eight modifications in 2015 IBC Section 1905 or any other provision of the 2015 IBC. This means only the editorial changes discussed above are required to make ACI 318-14 compatible with the 2015 IBC.

ASTM

Public Comment 2:

Marcelo M. Hirschler, representing GBH International, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

E814-08b 2013 Test Method of Fire Tests of Through-Penetration Firestops

E1537-42 2013 Test Method for Fire Testing of Upholstered Furniture

Commenter's Reason: Standards date updates

Public Comment 3:

Marcelo M. Hirschler, representing GBH International, and Steve Mawn, representing ASTM International, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

D6662-09 2013 Standard Specification for Polyolefin-Based Plastic Lumber Decking Boards
E84-2042e 2013A Test Method for Surface Burning Characteristics of Building Materials
E1354-2044b 2013 Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter
E1590-42 2013 Test Method for Fire Testing of Mattresses
E2404—42 2013E1 Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Vinyl Wall or Ceiling Coverings to Assess Surface Burning Characteristics

Commenter's Reason: Standards date updates

Public Comment 4:

Steve Mawn, representing ASTM International, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

A74-42 13A Specification for Cast Iron Soil Pipe and Fittings
A182-42A 13 Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings and Valves and Parts for High-Temperature Service
A240/A 240M-42- 13A Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for General Applications
A283/A 283M-12A Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
A307-40 12 Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
A312/A 312M-42A 13A Specification for Seamless, and Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
A403-42 13 Standard Specification for Wrought Austenitic Stainless Steel Pipe Fittings
A480/A480M-42 13 Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet and Strip
A510-44 13 Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, Alloy Steel
A572/A 572M-12A Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
A588/A 588M-05 10 Specification for High-Strength Low-Alloy Structural Steel with 50 ksi (345 Mpa) Minimum Yield Point, with Atmospheric Corrosion Resistance
A875/A 875M-40 13 Standard Specification for Steel Sheet Zinc-5%, Aluminum Alloy-Coated by the Hot-Dip Process

A888-44 <u>13A</u>	Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Application
A924/A 924M- 2010a <u>13</u>	Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot Dip Process
A1003/A 1003M- 42 <u>13A</u>	Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-formed Framing Members
A1008/A1008M-12A	Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, Solution Hardened and Bake Hardenable
B152/B 152M- 09 <u>13</u>	Specification for Copper Sheet, Strip Plate and Rolled Bar
B241/B 241M- 40 <u>12E1</u>	Specification for Aluminum and Aluminum-Alloy, Seamless Pipe and Seamless Extruded Tube
B633-44 <u>13</u>	Specification for Electrodeposited Coatings of Zinc on Iron and Steel
C33/C33M- 41a <u>13</u>	Specification for Concrete Aggregates
C34- 40 <u>12</u>	Specification for Structural Clay Load-Bearing Wall Tile
C42/C 42M- 42 <u>13</u>	Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C56- 2010 <u>12</u>	Specification for Limestone Dimension Stone
C59/C 59M-00(2006) (<u>2011</u>)	Specification for Gypsum Casting Plaster and Molding Plaster
C62- 08 <u>13</u>	Specification for Slate Dimension Stone
C67- 42 <u>13</u>	Test Methods of Sampling and Testing Brick and Structural Clay Tile
C76- 42a <u>13A</u>	Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
C90- 42 <u>13</u>	Specification for Loadbearing Concrete Masonry Units
C94/C 94M- 42 <u>13</u>	Specification for Construction of Dry-stacked, Surface-Bonded Walls
C109/C 109M- 2004b <u>12</u>	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
C126- 42 <u>13</u>	Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
C140- 2012a <u>13</u>	Test Method Sampling and Testing Concrete Masonry Units and Related Units
C143/C 143M- 2010a <u>12</u>	Test Method for Slump of Hydraulic Cement Concrete
C207- 2011 <u>06(2011)</u>	Specification for Hydrated Lime for Masonry Purposes
C216- 42 <u>13</u>	Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale)
C317/C 317M-00(<u>2010</u>)	Specification for Gypsum Concrete
C330-/C330M-2009	Specification for Lightweight Aggregates for Structural Concrete
C474- 42 - <u>13</u>	Test Methods for Joint Treatment Materials for Gypsum Board Construction
C578—12a <u>b</u>	Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
C587-04(<u>2009</u>)	Specification for Gypsum Veneer Plaster
C595/C95M- 2012a <u>13</u>	Specification for Blended Hydraulic Cements
C615/C615M- 2011 <u>11</u>	Specification for Granite Dimension Stone
C616/C616M- 2010 <u>10</u>	Specification for Quartz Dimension Stone

C629- 2010 -10	Specification for Slate Dimension Stone
C635/C635M- 42 13	Specification for the Manufacturer, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings
C645-44A 13	Specification for Nonstructural Steel Framing Members
C652- 42 13	Specification for Hollow Brick (Hollow Masonry Units Made from Clay or Shale)
C700-44 13	Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
C728-05 (2010) (2013)	Standard Specification for Perlite Thermal Insulation Board
C926- 42A 13	Specification for Application of Portland Cement-Based Plaster
C932-06(2013)	Specification for Surface-Applied Bonding Compounds Agents for Exterior Plastering
C933-44 13	Specification for Welded Wire Lath
C1019-44 13	Test Method for Sampling and Testing Grout
C1029- 40 13	Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation
C1063-12C D	Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
C1072-44 13	Standard Text Method for Measurement of Masonry Flexural Bond Strength
C1088- 09 13	Specification for Thin Veneer Brick Units Made From Clay or Shale
C1107/C1107M -44 13	Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
C1116/C1116M-10A	Standard Specification for Fiber - Reinforced Concrete and Shotcrete
C1157/C1157M-11	Standard Performance Specification for Hydraulic Cement
C1173-10E1	Specification for Flexible Transition Couplings for Underground Piping Systems
C1186-08(2012)	Specification for Flat Fiber Cement Sheets
C1277-44 12	Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings
C1280- 42A 13	Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing
C1289— 42a 13E1	Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
C1314-44A 12	Test Method for Compressive Strength of Masonry Prisms
C1396/1396M-44 2013	Specification for Gypsum Ceiling Board
C1513- 42 2013	Standard Specification for Concrete Roof Tile
C1563- 08 2013	Standard Test Method for Gaskets for Use in Connection with Hub and Spigot Cast Iron Soil Pipe and Fittings for Sanitary Drain, Waste, Vent and Storm Piping Applications
D86- 2011b 2012	Test Method for Distillation of Petroleum Products at Atmospheric Pressure
D92- 20 12b	Test Method for Flash and Fire Points by Cleveland Open Cup Tester
D93-44 2012	Test Method for Flash Point by Pensky-Martens Closed Cup Tester
D1693- 42 2013	Test Method for Environmental Stress-Cracking of Ethylene Plastics
D1970/D1970M-44 2013	Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roof Underlayment for Ice Dam Protection
D2239- 20 12A	Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter
D2513- 42 2013E1	Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings

D2683- 2010 <u>E1</u>	Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing
D2737- 2012 <u>E4A</u>	Specification for Polyethylene (PE) Plastic Tubing
D2974- 07A <u>2013</u>	Standard Test Methods for Moisture, Ash and Organic Matter of Peat and other Organic Soils
D3035- 2012 <u>E1</u>	Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter
D3161/ D3161M-42 <u>2013</u>	Test Method for a Wind Resistance of Asphalt Shingles (Fan Induced Method)
D3201- 08A <u>E4</u> <u>2013</u>	Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Based Products
D3350- 08 <u>2012</u> <u>E1</u>	Specification for Polyethylene Plastics Pipe and Fittings Materials
D3689- 07 <u>2013</u> <u>E1</u>	Test Methods for Deep Foundations Under Static Axial Tensile Load
D3737- 09 <u>E4</u> <u>2012</u>	Practice for Establishing Allowable Properties for Structural Glued Laminated Timber (Glulam)
D4637/ D4637M-42 <u>2013</u>	Specification for EPDM Sheet Used in Single-Ply Roof Membrane
D5055- 42 <u>2013</u>	Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists
D5456- 42 <u>2013</u>	Standard Specification for Evaluation of Structural Composite Lumber Products
D6223/ D6223M-02(2009) <u>(2011)</u> <u>E1</u>	Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements
D6757- 07 <u>2013</u>	Standard Specification for Underlayment Felt Containing Inorganic Fibers used in Steep-Slope Roofing
E96/ E96M-40 <u>2013</u>	Test Method for Water Vapor Transmission of Materials
E1332-90(2003 <u>10A</u>)	Standard Classification for the Determination of Outdoor-Indoor Transmission Class
E1529- 40 <u>2013</u>	Test Method for Determining Effects of Large Hydrocarbon Pool Fires on Structural Members and Assemblies
E1537- 42 <u>2013</u>	Test Method for Fire Testing of Upholstered Furniture
E1996- 2012 <u>A</u>	Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes
E2178- 44 <u>2013</u>	Standard Test Method for Air Permeance of Building Materials
E2307- 42 <u>2010</u>	Standard Test Method for Determining Fire Resistance of a Perimeter Joint System Between an Exterior Wall Assembly and a Floor Assembly Using the Intermediate-Scale, Multi-story Test Apparatus ¹
E2336-04(<u>2013</u>)	Standard Test Methods Fire Resistive Grease Duct Enclosure Systems
F441/ F 441M-42 <u>2013</u>	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80
F442/ F 442M-42 <u>2013</u>	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)
F714- 42 <u>E4</u> <u>2013</u>	Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
F876- 40 <u>E4</u> <u>2013</u>	Specification for Crosslinked Polyethylene (PEX) Tubing
F877- 2011 <u>A</u>	Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems
F1055- 44 <u>2013</u>	Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene and Crosslinked Polyethylene Pipe and Tubing
F1496- 42 <u>2013</u>	Standard Test Method for Performance of Convection Ovens

F1807-42 <u>2013</u>	Specifications for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing
F2080-09 <u>2012</u>	Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Cross-linked Polyethylene (PEX) Pipe
F2200—14B <u>2013</u>	Standard Specification for Automated Vehicular Gate Construction
F2306/F 2306M-44 <u>2013</u>	Specification for 12" to 60" 300 to 1500 mm annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications

Commenter's Reason: Further revisions to ASTM Standards.

ICC

Public Comment 5:

Jonathan Humble, representing ICC Reference Standards Committee, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

ICC A117.1 – ~~2009~~ 2014 Accessible and Usable Buildings and Facilities

Commenter's Reason (Humble): The ICC Reference Standards Committee (ICC-REF), a committee organized to review standards and provide an opinion of standards compliance based on Council Policy 28, requests that ADM 62-13 be further modified with the incorporation of ICC A117.1-2014 edition.

The ICC-REF disagrees with the ADM code development committee reasons for reverting back to the 2009 edition of ICC A117.1. Contrary to the code development committee's reason concerning significant changes, Section 4.5.1 of the Council Policy does not stipulate any restrictions to modifications to a standards updating. Rather, the intent is that an updated standard should coordinate with the various I-codes in which the standard is referenced. Since this standard is referenced generically in each of the referenced I-codes, and not specifically by individual section number, it is believed that the update will not yield the coordination issues cited in the code development committee's recommendation.

We therefore recommend that ADM62-13 be further modified by the updating of ICC A117.1 to the 2014 edition.

Public Comment 6:

Kenneth Schoonover, KMS Associates, Inc. representing self, requests Approval as Modified by this Public Comment.

Approve the proposed update to ICC/ANSI A117.1-14 for the IBC and the IRC. Retain the reference to ICC/ANSI A117.1-2009 for the IZC, IFC and IEBC.

Commenter's Reason: ICC/ANSI A117.1 Standard is going through its normal revision cycle, which is expected to be complete before the end of this code development cycle. The new edition of A117.1 will be published and available for reference in the 2015 International Codes.

While it is true that there are significant changes, that is not a good reason to freeze the I-Codes reference at the 2009 Edition of the standard. ICC Council Policy #CP28-05 specifically allows an administrative update of a standard to be approved, based upon completion before Dec. 1 of 2014. We anticipate that this standard will be published and available well before December 1, 2014. In writing this rule for completion of a referenced standard a full year after the update is approved, ICC is specifically allowing for completion of technical work on a standard to be completed, with no qualifications regarding the progress of that work. The revisions underway for A117.1 will not impact the content of the 2015 I-Codes. Further, there are a number of reasons why the update to this standard should be approved:

1. If the revisions in question are included in the new standard, there is no good reason not to move forward with them. The changes will have been well vetted, the benefits of the changes have already been established, and the basis for the changes will have been well substantiated.

2. The potential impact on design and construction is no reason delay implementation. It will be several years before the new edition of the I-Codes are widely adopted and enforced. The changes are significant, but not so dramatic as to cause a major upheaval in the design and construction industry. This would not be the first time, or the last, that changes in codes and standards will have had such effect. Designers and builders can and will adapt, and there will be sufficient time to adapt for those who choose to be proactive and plan ahead.

3. There are many other changes and improvements in the standard that will be delayed if the standard is not updated. Among them are revisions that will correlate to a great extent the I-Codes with the new 2010 ADA Standards, which are now adopted and in force. The I-Codes have long sought to be as technically consistent as possible with the ADA Accessibility Guidelines. Designers,

builders and building owners benefit from having model codes that match the federal accessibility requirements. Failure to update the standard will be a lost opportunity to continue that benefit.

4. The A117 Committee has, to date, agreed to minimize the impact of the changes on housing. The proposals under consideration by the committee include exceptions to Chapter 10 of the Standard that will limit the spatial impact Accessible, Type A and Type B units.

Analysis: Availability of older editions of a standard are determined by the policies of the standard promulgator. The IFC references the A117.1 in Sections 907.5.2.3.4 (Visible alarms) Group R-2, 1007.9 (Accessible means of egress) Signage and 1010.1 Ramps. Chapters 9 and 10 are repeated in the IBC and IFC. The IZC references the A117.1 in Sections 801.2.4 and 801.3.1. The references are specific to requirements for passenger loading zones and accessible parking spaces. Accessible parking requirements and passenger loading zones are also addressed in the IBC, Section 1106.

Public Comment 7:

Steve Orlowski, representing National Association of Home Builders (NAHB), and Tim Ryan, representing the International Association of Building Officials (IABO), requests Approved as Modified by the Code Committee.

Commenter's Reason: During the code development hearing, the committee agreed that there was a need to modify the list of referenced standard, specifically the updating of the A117.1 standard. CP policy 28 allows for standards that are already referenced in the I-Codes to be updated, even if they are still under development, provide they are completed before December 1, 2014. There are several standards that have been changed or are currently being changed without any opportunity to determine whether the standard should still be referenced in the code or the ability to change the code to reflect changes that have occurred in the standard.

For example the A117 standard is currently discussing changes that may possibly change the required dimensions of clear floor space and dimensions along the accessible route significantly. Without the opportunity to fully understand how existing buildings that were built in accordance with the previous edition of the standard and how the proposed changes will interact with ADA and FHA requirements, NAHB encourages the final assembly to support the modification approved by the committee to not update the reference to the 2014 A117.1 standard.

Public Comment 8:

Robert Eugene, representing UL LLC, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

705-2004 ~~Revision 5~~ Standard for Power Ventilators with revisions through March 2012

Commenter's Reason: This modification provides no technical change. The re-formatting provides consistency with the formatting of the other UL referenced standards.

Public Comment 9:

Robert Eugene, representing UL LLC, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

1703-02 Flat-plate Photovoltaic Modules and Panels - with revisions through ~~May 2012~~ November 2014

Commenter's Reason: This modification will incorporate additional fire testing provisions. It will also include various clarifications and editorial revisions to the standard.

Public Comment 10:

Robert Eugene, representing UL LLC, requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

14B-2008 Sliding Hardware for Standard Horizontally Mounted Tin Clad Fire Doors with revisions through May 3, 2013

14C-2006 Swinging Hardware for Standard Tin Clad Fire Doors Mounted Singly and in Pairs, with revisions through ~~December 2008~~ May 2013

181A-05 <u>2013</u>	Closure Systems for Use with Rigid Air Ducts and Air Connectors— with Revisions through February 2008
181B-05- <u>2013</u>	Closure Systems for Use with Flexible Air Ducts and Air Connectors— with Revisions through February 2008
268— 06 <u>2009</u>	Smoke Detectors for Fire Prevention Signaling Alarm Systems — with revisions through October 2003
325-2002	Door, Drapery, Gate, Louver and Window Operators and Systems - with Revisions through January 2012 <u>June 2013</u>
343-2008	Pumps for Oil-Burning Appliances— <u>with revisions through June 2013</u>
441-2010	Gas Vents— with Revisions through August 2006
471- 06 <u>2010</u>	Commercial Refrigerators and Freezers— with Revisions through October 2008 <u>December 2012</u>
499-05	Electric Heating Appliances-with revisions through April 2012 <u>February 2013</u>
508-99	Industrial Control Equipment— with Revisions through September 2008 <u>March 2013</u>
641- 1995 <u>2010</u>	Type L Low-Temperature Venting Systems <u>with revisions through May 2013</u>
710- 95 <u>2012</u>	Exhaust Hoods for Commercial Cooking Equipment— with Revisions through December 2009
834-04	Heating, Water Supply and Power Boilers Electric— with Revisions through December 2009 <u>January 2013</u>
842-07	Valves for Flammable Fluids, with Revisions through April 2011 <u>October 2012</u>
867- 00 <u>2011</u>	Electrostatic Air Cleaners- <u>with Revisions through February 2013</u>
923— 2008 <u>2013</u>	Microwave Cooking Appliances— with Revisions through June 2010
1042- 94 <u>2009</u>	Electric Baseboard Heating Equipment-with revisions through June 2010 <u>2013</u>
1081-2008	Standard for Swimming Pool Pumps, Filters and Chlorinators, with revisions through November 2011 <u>May 2013</u>
1240-2012	Electric Commercial Clothes-Drying Equipment - with Revisions through February 2011 <u>October 2012</u>
1313-93	Standard for Nonmetallic Safety Cans for Petroleum Products— with Revisions through August 2007 <u>November 2012</u>
1479-03	Fire Tests of Through-penetration Firestops— with Revisions through March 2010 <u>October 2012</u>
1618-09	Wall Protectors, Floor Protectors and Hearth Extensions – <u>with revisions through May 2013</u>
1715-97	Fire Test of Interior Finish Material— with Revisions through April 2008 <u>January 2013</u>
1812- 2009 <u>2013</u>	Standard for Ducted Heat Recovery Ventilators— with Revisions through June 2010
1820-04	Fire Test of Pneumatic Tubing for Flame and Smoke Characteristics— with Revisions through February 2009 <u>May 2013</u>
1887-04	Fire Tests of Plastic Sprinkler Pipe for Visible Flame and Smoke Characteristics— with Revisions through February 2009 <u>May 2013</u>
2075-04 <u>2013</u>	Standard for Gas and Vapor Detectors and Sensors— with revisions through September 2007
2079-04	Tests for Fire Resistance of Building Joint Systems— with Revisions through June 2008 <u>December 2012</u>
2085-97	Protected Above-ground Tanks for Flammable and Combustible Liquids— with Revisions through December 1999 <u>September 2010</u>
2200-2012	Stationary Engine Generator Assemblies-- <u>with Revisions through June 2013</u>
2360-00	Test Methods for Determining the Combustibility Characteristics of Plastics Used in Semi-Conductor Tool Construction— with Revisions through June, 2008 <u>May 2013</u>

2523-09

Standard for Solid Fuel-Fired Hydronic Heating Appliances, Water Heaters, and Boilers, with Revisions through ~~October 2014~~ February 2013

Commenter's Reason: This modification provides additional updates to referenced standards revision dates and titles as applicable.

Final Hearing Results

ADM62-13

AMPC1,2,3,4,8,9,10
