

CHAPTER 26

PLASTIC

SECTION 2601 GENERAL

2601.1 Scope. These provisions shall govern the materials, design, application, construction and installation of foam plastic, foam plastic insulation, plastic veneer, interior plastic finish and *trim* and light-transmitting plastics. See Chapter 14 for requirements for *exterior wall* finish and *trim*.

Exception: Buildings and structures located within the high-velocity hurricane zone shall comply with the provisions of Sections 2603.8 and 2612.

SECTION 2602 DEFINITIONS

2602.1 General. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

FIBER REINFORCED POLYMER. A polymeric composite material consisting of reinforcement fibers impregnated with a fiber-binding polymer which is then molded and hardened.

FIBERGLASS REINFORCED POLYMER. A polymeric composite material consisting of glass reinforcement fibers impregnated with a fiber-binding polymer which is then molded and hardened.

FOAM PLASTIC INSULATION. A plastic that is intentionally expanded by the use of a foaming agent to produce a reduced-density plastic containing voids consisting of open or closed cells distributed throughout the plastic for thermal insulating or acoustical purposes and that has a density less than 20 pounds per cubic foot (pcf) (320 kg/m³).

LIGHT-DIFFUSING SYSTEM. Construction consisting in whole or in part of lenses, panels, grids or baffles made with light-transmitting plastics positioned below independently mounted electrical light sources, skylights or light-transmitting plastic roof panels. Lenses, panels, grids and baffles that are part of an electrical fixture shall not be considered as a light-diffusing system.

LIGHT-TRANSMITTING PLASTIC ROOF PANELS. Structural plastic panels other than skylights that are fastened to structural members, or panels or sheathing and that are used as light-transmitting media in the plane of the roof.

LIGHT-TRANSMITTING PLASTIC WALL PANELS. Plastic materials that are fastened to structural members, or to structural panels or sheathing, and that are used as light-transmitting media in *exterior walls*.

PLASTIC, APPROVED. Any thermoplastic, thermosetting or reinforced thermosetting plastic material that conforms to combustibility classifications specified in the section applicable to the application and plastic type.

PLASTIC GLAZING. Plastic materials that are glazed or set in frame or sash and not held by mechanical fasteners that pass through the glazing material.

THERMOPLASTIC MATERIAL. A plastic material that is capable of being repeatedly softened by increase of temperature and hardened by decrease of temperature.

THERMOSETTING MATERIAL. A plastic material that is capable of being changed into a substantially nonreformable product when cured.

SECTION 2603 FOAM PLASTIC INSULATION

2603.1 General. The provisions of this section shall govern the requirements and uses of foam plastic insulation in buildings and structures.

2603.2 Labeling and identification. Packages and containers of foam plastic insulation and foam plastic insulation components delivered to the job site shall bear the *label* of an *approved agency* showing the manufacturer's name, product listing, product identification and information sufficient to determine that the end use will comply with the code requirements.

2603.3 Surface-burning characteristics. Unless otherwise indicated in this section, foam plastic insulation and foam plastic cores of manufactured assemblies shall have a flame spread index of not more than 75 and a smoke-developed index of not more than 450 where tested in the maximum thickness intended for use in accordance with ASTM E 84 or UL 723. Loose fill-type foam plastic insulation shall be tested as board stock for the flame spread and smoke-developed indexes.

Exceptions:

1. Smoke-developed index for interior *trim* as provided for in Section 2604.2.
2. In cold storage buildings, ice plants, food plants, food processing rooms and similar areas, foam plastic insulation where tested in a thickness of 4 inches (102 mm) shall be permitted in a thickness up to 10 inches (254 mm) where the building is equipped throughout with an automatic fire sprinkler system in accordance with Section 903.3.1.1. The approved *automatic sprinkler system* shall be provided in both the room and that part of the building in which the room is located.
3. Foam plastic insulation that is a part of a Class A, B or C roof-covering assembly provided the assembly with the foam plastic insulation satisfactorily passes FM 4450 or UL 1256. The smoke-developed index shall not be limited for roof applications.
4. Foam plastic insulation greater than 4 inches (102 mm) in thickness shall have a maximum flame spread

index of 75 and a smoke-developed index of 450 where tested at a minimum thickness of 4 inches (102 mm), provided the end use is approved in accordance with Section 2603.9 using the thickness and density intended for use.

5. Flame spread and smoke-developed indexes for foam plastic interior signs in *covered mall buildings* provided the signs comply with Section 402.15.

2603.4 Thermal barrier. Except as provided for in Sections 2603.4.1 and 2603.9, foam plastic shall be separated from the interior of a building by an approved thermal barrier of 1/2-inch (12.7 mm) gypsum wallboard or equivalent thermal barrier material that will limit the average temperature rise of the unexposed surface to not more than 250°F (120°C) after 15 minutes of fire exposure, complying with the standard time-temperature curve of ASTM E 119 or UL 263. The thermal barrier shall be installed in such a manner that it will remain in place for 15 minutes based on FM 4880, UL 1040, NFPA 286 or UL 1715. Combustible concealed spaces shall comply with Section 717.

2603.4.1 Thermal barrier not required. The thermal barrier specified in Section 2603.4 is not required under the conditions set forth in Sections 2603.4.1.1 through 2603.4.1.13.

2603.4.1.1 Masonry or concrete construction. A thermal barrier is not required for foam plastic installed in a masonry or concrete wall, floor or roof system where the foam plastic insulation is covered on each face by a minimum of 1 inch (25 mm) thickness of masonry or concrete.

2603.4.1.2 Cooler and freezer walls. Foam plastic installed in a maximum thickness of 10 inches (254 mm) in cooler and freezer walls shall:

1. Have a flame spread index of 25 or less and a smoke-developed index of not more than 450, where tested in a minimum 4 inch (102 mm) thickness.
2. Have flash ignition and self-ignition temperatures of not less than 600°F and 800°F (316°C and 427°C), respectively.
3. Have a covering of not less than 0.032-inch (0.8 mm) aluminum or corrosion-resistant steel having a base metal thickness not less than 0.0160 inch (0.4 mm) at any point.
4. Be protected by an *automatic sprinkler system* in accordance with Section 903.3.1.1. Where the cooler or freezer is within a building, both the cooler or freezer and that part of the building in which it is located shall be sprinklered.

2603.4.1.3 Walk-in coolers. In nonsprinklered buildings, foam plastic having a thickness that does not exceed 4 inches (102 mm) and a maximum flame spread index of 75 is permitted in walk-in coolers or freezer units where the aggregate floor area does not exceed 400 square feet (37 m²) and the foam plastic is covered by a metal facing not less than 0.032-inch-thick (0.81 mm) aluminum or corrosion-resistant steel having a minimum

base metal thickness of 0.016 inch (0.41 mm). A thickness of up to 10 inches (254 mm) is permitted where protected by a thermal barrier.

2603.4.1.4 Exterior walls—one-story buildings. For one-story buildings, foam plastic having a flame spread index of 25 or less, and a smoke-developed index of not more than 450, shall be permitted without thermal barriers in or on *exterior walls* in a thickness not more than 4 inches (102 mm) where the foam plastic is covered by a thickness of not less than 0.032-inch-thick (0.81 mm) aluminum or corrosion-resistant steel having a base metal thickness of 0.0160 inch (0.41 mm) and the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

2603.4.1.5 Roofing. Foam plastic insulation under a roof assembly or roof covering that is installed in accordance with the code and the manufacturer's instructions shall be separated from the interior of the building by wood structural panel sheathing not less than 0.47 inch (11.9 mm) in thickness bonded with exterior glue, with edges supported by blocking, tongue-and-groove joints or other approved type of edge support, or an equivalent material. A thermal barrier is not required for foam plastic insulation that is a part of a Class A, B or C roof-covering assembly, provided the assembly with the foam plastic insulation satisfactorily passes FM 4450 or UL 1256.

2603.4.1.6 Attics and crawl spaces. Within an *attic* or crawl space where entry is made only for service of utilities, foam plastic insulation shall be protected against ignition by 1/2-inch-thick (38 mm) mineral fiber insulation; 1/4-inch-thick (6.4 mm) wood structural panel, particleboard or hardboard; 3/8-inch (9.5 mm) gypsum wallboard, corrosion-resistant steel having a base metal thickness of 0.016 inch (0.4 mm) or other approved material installed in such a manner that the foam plastic insulation is not exposed. The protective covering shall be consistent with the requirements for the type of construction.

2603.4.1.7 Doors not required to have a fire protection rating. Where pivoted or side-hinged doors are permitted without a fire protection rating, foam plastic insulation, having a flame spread index of 75 or less and a smoke-developed index of not more than 450, shall be permitted as a core material where the door facing is of metal having a minimum thickness of 0.032-inch (0.8 mm) aluminum or steel having a base metal thickness of not less than 0.016 inch (0.4 mm) at any point.

2603.4.1.8 Exterior doors in buildings of Group R-2 or R-3. In occupancies classified as Group R-2 or R-3, foam-filled exterior entrance doors to individual *dwelling units* that do not require a fire-resistance rating shall be faced with wood or other approved materials.

2603.4.1.9 Garage doors. Where garage doors are permitted without a fire-resistance rating and foam plastic is used as a core material, the door facing shall be metal having a minimum thickness of 0.032-inch (0.8 mm) aluminum or 0.010-inch (0.25 mm) steel or the facing shall

be minimum 0.125-inch-thick (3.2 mm) wood. Garage doors having facings other than those described above shall be tested in accordance with, and meet the acceptance criteria of, DASMA 107.

Exception: Garage doors using foam plastic insulation complying with Section 2603.3 in detached and attached garages associated with one- and two-family dwellings need not be provided with a thermal barrier.

2603.4.1.10 Siding backer board. Foam plastic insulation of not more than 2,000 British thermal units per square feet (Btu/sq. ft.) (22.7 mJ/m²) as determined by NFPA 259 shall be permitted as a siding backer board with a maximum thickness of 1/2 inch (12.7 mm), provided it is separated from the interior of the building by not less than 2 inches (51 mm) of mineral fiber insulation or equivalent or where applied as insulation with residing over existing wall construction.

2603.4.1.11 Interior trim. Foam plastic used as interior trim in accordance with Section 2604 shall be permitted without a thermal barrier.

2603.4.1.12 Interior signs. Foam plastic used for interior signs in *covered mall buildings* in accordance with Section 402.16 shall be permitted without a thermal barrier. Foam plastic signs that are not affixed to interior building surfaces shall comply with the *Florida Fire Prevention Code*.

2603.4.1.13 Type V construction. Foam plastic spray applied to a sill plate and header of Type V construction is subject to all of the following:

1. The maximum thickness of the foam plastic shall be 3 1/4 inches (82.6 mm).
2. The density of the foam plastic shall be in the range of 1.5 to 2.0 pcf (24 to 32 kg/m³).
3. The foam plastic shall have a flame spread index of 25 or less and an accompanying smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723.

2603.5 Exterior walls of buildings of any height. *Exterior walls* of buildings of Type I, II, III or IV construction of any height shall comply with Sections 2603.5.1 through 2603.5.7. *Exterior walls* of cold storage buildings required to be constructed of noncombustible materials, where the building is more than one *story* in height, shall also comply with the provisions of Sections 2603.5.1 through 2603.5.7. *Exterior walls* of buildings of Type V construction shall comply with Sections 2603.2, 2603.3 and 2603.4.

2603.5.1 Fire-resistance-rated walls. Where the wall is required to have a fire-resistance rating, data based on tests conducted in accordance with ASTM E 119 or UL 263 shall be provided to substantiate that the fire-resistance rating is maintained.

2603.5.2 Thermal barrier. Any foam plastic insulation shall be separated from the building interior by a thermal barrier meeting the provisions of Section 2603.4, unless special approval is obtained on the basis of Section 2603.9.

Exception: One-story buildings complying with Section 2603.4.1.4.

2603.5.3 Potential heat. The potential heat of foam plastic insulation in any portion of the wall or panel shall not exceed the potential heat expressed in Btu per square feet (mJ/m²) of the foam plastic insulation contained in the wall assembly tested in accordance with Section 2603.5.5. The potential heat of the foam plastic insulation shall be determined by tests conducted in accordance with NFPA 259 and the results shall be expressed in Btu per square feet (mJ/m²).

Exception: One-story buildings complying with Section 2603.4.1.4.

2603.5.4 Flame spread and smoke-developed indexes. Foam plastic insulation, exterior coatings and facings shall be tested separately in the thickness intended for use, but not to exceed 4 inches (102 mm), and shall each have a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E 84 or UL 723.

Exception: Prefabricated or factory-manufactured panels having minimum 0.020-inch (0.51 mm) aluminum facings and a total thickness of 1/4 inch (6.4 mm) or less are permitted to be tested as an assembly where the foam plastic core is not exposed in the course of construction.

2603.5.5 Test standard. The wall assembly shall be tested in accordance with and comply with the acceptance criteria of NFPA 285.

Exception: One-story buildings complying with Section 2603.4.1.4.

2603.5.6 Label required. The edge or face of each piece of foam plastic insulation shall bear the *label* of an *approved agency*. The *label* shall contain the manufacturer's or distributor's identification, model number, serial number or definitive information describing the product or materials' performance characteristics and *approved agency's* identification.

2603.5.7 Ignition. *Exterior walls* shall not exhibit sustained flaming where tested in accordance with NFPA 268. Where a material is intended to be installed in more than one thickness, tests of the minimum and maximum thickness intended for use shall be performed.

Exception: Assemblies protected on the outside with one of the following:

1. A thermal barrier complying with Section 2603.4.
2. A minimum 1 inch (25 mm) thickness of concrete or masonry.
3. Glass-fiber-reinforced concrete panels of a minimum thickness of 3/8 inch (9.5 mm).
4. Metal-faced panels having minimum 0.019-inch-thick (0.48 mm) aluminum or 0.016-inch-thick (0.41 mm) corrosion-resistant steel outer facings.
5. A minimum 7/8 inch (22.2 mm) thickness of stucco complying with Section 2510.

2603.6 Roofing. Foam plastic insulation meeting the requirements of Sections 2603.2, 2603.3 and 2603.4 shall be permitted as part of a roof-covering assembly, provided the assembly with the foam plastic insulation is a Class A, B or C roofing assembly where tested in accordance with ASTM E 108 or UL 790.

2603.7 Plenums. Foam plastic insulation shall not be used as interior wall or ceiling finish in plenums except as permitted in Section 2604 or when protected by a thermal barrier in accordance with Section 2603.4.

2603.8 Protection against termites. In Florida, extruded and expanded polystyrene, polyisocyanurate and other foam plastics shall not be installed on the exterior face or under interior or exterior foundation walls or slab foundations located below grade. The clearance between foam plastics installed above grade and exposed earth shall be at least 6 inches (152 mm).

Exceptions:

1. Buildings where the structural members of walls, floors, ceilings and roofs are entirely of non-combustible materials or preservative-treated wood.
2. An approved method of protecting the foam plastic and structure from subterranean termite damage is provided.
3. On the interior side of basement walls.

Figure 2603.8 Reserved.

2603.9 Special approval. Foam plastic shall not be required to comply with the requirements of Sections 2603.4 through 2603.7 where specifically approved based on large-scale tests such as, but not limited to, NFPA 286 (with the acceptance criteria of Section 803.2), FM 4880, UL 1040 or UL 1715. Such testing shall be related to the actual end-use configuration and be performed on the finished manufactured foam plastic assembly in the maximum thickness intended for use. Foam plastics that are used as interior finish on the basis of special tests shall also conform to the flame spread requirements of Chapter 8. Assemblies tested shall include seams, joints and other typical details used in the installation of the assembly and shall be tested in the manner intended for use.

**SECTION 2604
INTERIOR FINISH AND TRIM**

2604.1 General. Plastic materials installed as interior finish or *trim* shall comply with Chapter 8. Foam plastics shall only be installed as interior finish where approved in accordance with the special provisions of Section 2603.9. Foam plastics that are used as interior finish shall also meet the flame spread index requirements for interior finish in accordance with Chapter 8. Foam plastics installed as interior *trim* shall comply with Section 2604.2.

[F] 2604.2 Interior trim. Foam plastic used as interior *trim* shall comply with Sections 2604.2.1 through 2604.2.4.

[F] 2604.2.1 Density. The minimum density of the interior *trim* shall be 20 pcf (320 kg/m³).

[F] 2604.2.2 Thickness. The maximum thickness of the interior *trim* shall be 1/2 inch (12.7 mm) and the maximum width shall be 8 inches (204 mm).

[F] 2604.2.3 Area limitation. The interior *trim* shall not constitute more than 10 percent of the specific wall or ceiling areas to which it is attached.

[F] 2604.2.4 Flame spread. The flame spread index shall not exceed 75 where tested in accordance with ASTM E 84 or UL 723. The smoke-developed index shall not be limited.

Exception: When the interior *trim* material has been tested as an interior finish in accordance with NFPA 286 and complies with the acceptance criteria in Section 803.1.2.1, it shall not be required to be tested for flame spread index in accordance with ASTM E 84 or UL 723.

**SECTION 2605
PLASTIC VENEER**

2605.1 Interior use. Where used within a building, plastic veneer shall comply with the interior finish requirements of Chapter 8.

2605.2 Exterior use. Exterior plastic veneer, other than plastic siding, shall be permitted to be installed on the *exterior walls* of buildings of any type of construction in accordance with all of the following requirements:

1. Plastic veneer shall comply with Section 2606.4.
2. Plastic veneer shall not be attached to any exterior wall to a height greater than 50 feet (15 240 mm) above grade.
3. Sections of plastic veneer shall not exceed 300 square feet (27.9 m²) in area and shall be separated by a minimum of 4 feet (1219 mm) vertically.

Exception: The area and separation requirements and the smoke-density limitation are not applicable to plastic veneer applied to buildings constructed of Type VB construction, provided the walls are not required to have a fire-resistance rating.

2605.3 Plastic siding. Plastic siding shall comply with the requirements of Sections 1404 and 1405.

**SECTION 2606
LIGHT-TRANSMITTING PLASTICS**

2606.1 General. The provisions of this section and Sections 2607 through 2611 shall govern the quality and methods of application of light-transmitting plastics for use as light-transmitting materials in buildings and structures. Foam plastics shall comply with Section 2603. Light-transmitting plastic materials that meet the other code requirements for walls and roofs shall be permitted to be used in accordance with the other applicable chapters of the code.

2606.2 Approval for use. Sufficient technical data shall be submitted to substantiate the proposed use of any light-transmitting material, as approved by the *building official* and subject to the requirements of this section.

2606.3 Identification. Each unit or package of light-transmitting plastic shall be identified with a *mark* or decal satisfactory to the *building official*, which includes identification as to the material classification.

2606.4 Specifications. Light-transmitting plastics, including thermoplastic, thermosetting or reinforced thermosetting plastic material, shall have a self-ignition temperature of 650°F (343°C) or greater where tested in accordance with ASTM D 1929; a smoke-developed index not greater than 450 where tested in the manner intended for use in accordance with ASTM E 84 or UL 723, or a maximum average smoke density rating not greater than 75 where tested in the thickness intended for use in accordance with ASTM D 2843 and shall conform to one of the following combustibility classifications:

Class CC1: Plastic materials that have a burning extent of 1 inch (25 mm) or less where tested at a nominal thickness of 0.060 inch (1.5 mm), or in the thickness intended for use, in accordance with ASTM D 635.

Class CC2: Plastic materials that have a burning rate of 2½ inches per minute (1.06 mm/s) or less where tested at a nominal thickness of 0.060 inch (1.5 mm), or in the thickness intended for use, in accordance with ASTM D 635.

2606.5 Structural requirements. Light-transmitting plastic materials in their assembly shall be of adequate strength and durability to withstand the loads indicated in Chapter 16. Technical data shall be submitted to establish stresses, maximum unsupported spans and such other information for the various thicknesses and forms used as deemed necessary by the *building official*.

2606.6 Fastening. Fastening shall be adequate to withstand the loads in Chapter 16. Proper allowance shall be made for expansion and contraction of light-transmitting plastic materials in accordance with accepted data on the coefficient of expansion of the material and other material in conjunction with which it is employed.

2606.7 Light-diffusing systems. Unless the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, light-diffusing systems shall not be installed in the following occupancies and locations:

1. Group A with an *occupant load* of 1,000 or more.
2. Theaters with a stage and proscenium opening and an *occupant load* of 700 or more.
3. Group I-2.
4. Group I-3.
5. Vertical *exit* enclosures and *exit* passageways.

2606.7.1 Support. Light-transmitting plastic diffusers shall be supported directly or indirectly from ceiling or roof construction by use of noncombustible hangers. Hangers shall be at least No. 12 steel-wire gage (0.106 inch) galvanized wire or equivalent.

2606.7.2 Installation. Light-transmitting plastic diffusers shall comply with Chapter 8 unless the light-transmitting plastic diffusers will fall from the mountings before igniting, at an ambient temperature of at least 200°F (111°C)

below the ignition temperature of the panels. The panels shall remain in place at an ambient room temperature of 175°F (79°C) for a period of not less than 15 minutes.

2606.7.3 Size limitations. Individual panels or units shall not exceed 10 feet (3048 mm) in length nor 30 square feet (2.79 m²) in area.

2606.7.4 Fire suppression system. In buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, plastic light-diffusing systems shall be protected both above and below unless the sprinkler system has been specifically approved for installation only above the light-diffusing system. Areas of light-diffusing systems that are protected in accordance with this section shall not be limited.

2606.7.5 Electrical luminaires. Light-transmitting plastic panels and light-diffuser panels that are installed in approved electrical luminaires shall comply with the requirements of Chapter 8 unless the light-transmitting plastic panels conform to the requirements of Section 2606.7.2. The area of approved light-transmitting plastic materials that are used in required *exits* or *corridors* shall not exceed 30 percent of the aggregate area of the ceiling in which such panels are installed, unless the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

2606.8 Partitions. Light-transmitting plastics used in or as partitions shall comply with the requirements of Chapters 6 and 8.

2606.9 Bathroom accessories. Light-transmitting plastics shall be permitted as glazing in shower stalls, shower doors, bathtub enclosures and similar accessory units. Safety glazing shall be provided in accordance with Chapter 24.

2606.10 Awnings, patio covers and similar structures. *Awnings* constructed of light-transmitting plastics shall be constructed in accordance with the provisions specified in Section 3105 and Chapter 32 for projections. Patio covers constructed of light-transmitting plastics shall comply with Section 2606. Light-transmitting plastics used in canopies at motor fuel-dispensing facilities shall comply with Section 2606, except as modified by Section 406.5.3.

2606.11 Greenhouses. Light-transmitting plastics shall be permitted in lieu of plain glass in greenhouses.

2606.12 Solar collectors. Light-transmitting plastic covers on solar collectors having noncombustible sides and bottoms shall be permitted on buildings not over three *stories above grade plane* or 9,000 square feet (836.1 m²) in total floor area, provided the light-transmitting plastic cover does not exceed 33.33 percent of the roof area for CC1 materials or 25 percent of the roof area for CC2 materials.

Exception: Light-transmitting plastic covers having a thickness of 0.010 inch (0.3 mm) or less or shall be permitted to be of any plastic material provided the area of the solar collectors does not exceed 33.33 percent of the roof area.

**SECTION 2607
LIGHT-TRANSMITTING PLASTIC WALL PANELS**

2607.1 General. Light-transmitting plastics shall not be used as wall panels in *exterior walls* in occupancies in Groups A-1, A-2, H, I-2 and I-3. In other groups, light-transmitting plastics shall be permitted to be used as wall panels in *exterior walls*, provided that the walls are not required to have a fire-resistance rating and the installation conforms to the requirements of this section. Such panels shall be erected and anchored on a foundation, waterproofed or otherwise protected from moisture absorption and sealed with a coat of mastic or other approved waterproof coating. Light-transmitting plastic wall panels shall also comply with Section 2606.

2607.2 Installation. *Exterior wall* panels installed as provided for herein shall not alter the type of construction classification of the building.

2607.3 Height limitation. Light-transmitting plastics shall not be installed more than 75 feet (22 860 mm) above *grade plane*, except as allowed by Section 2607.5.

2607.4 Area limitation and separation. The maximum area of a single wall panel and minimum vertical and horizontal separation requirements for exterior light-transmitting plastic wall panels shall be as provided for in Table 2607.4. The maximum percentage of wall area of any *story* in light-transmitting plastic wall panels shall not exceed that indicated in Table 2607.4 or the percentage of unprotected openings permitted by Section 705.8, whichever is smaller.

Exceptions:

1. In structures provided with approved flame barriers extending 30 inches (760 mm) beyond the *exterior wall* in the plane of the floor, a vertical separation is not required at the floor except that provided by the vertical thickness of the flame barrier projection.
2. Veneers of approved weather-resistant light-transmitting plastics used as exterior siding in buildings of Type V construction in compliance with Section 1406.

3. The area of light-transmitting plastic wall panels in *exterior walls* of greenhouses shall be exempt from the area limitations of Table 2607.4 but shall be limited as required for unprotected openings in accordance with Section 704.8.

2607.5 Automatic sprinkler system. Where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the maximum percentage area of *exterior wall* in any *story* in light-transmitting plastic wall panels and the maximum square footage of a single area given in Table 2607.4 shall be increased 100 percent, but the area of light-transmitting plastic wall panels shall not exceed 50 percent of the wall area in any story, or the area permitted by Section 705.8 for unprotected openings, whichever is smaller. These installations shall be exempt from height limitations.

2607.6 Combinations of glazing and wall panels. Combinations of light-transmitting plastic glazing and light-transmitting plastic wall panels shall be subject to the area, height and percentage limitations and the separation requirements applicable to the class of light-transmitting plastic as prescribed for light-transmitting plastic wall panel installations.

**SECTION 2608
LIGHT-TRANSMITTING PLASTIC GLAZING**

2608.1 Buildings of Type VB construction. Openings in the *exterior walls* of buildings of Type VB construction, where not required to be protected by Section 705, shall be permitted to be glazed or equipped with light-transmitting plastic. Light-transmitting plastic glazing shall also comply with Section 2606.

2608.2 Buildings of other types of construction. Openings in the *exterior walls* of buildings of types of construction other than Type VB, where not required to be protected by Section 705, shall be permitted to be glazed or equipped with light-transmitting plastic in accordance with Section 2606 and all of the following:

1. The aggregate area of light-transmitting plastic glazing shall not exceed 25 percent of the area of any wall face of

**TABLE 2607.4
AREA LIMITATION AND SEPARATION REQUIREMENTS FOR
LIGHT-TRANSMITTING PLASTIC WALL PANELS^a**

FIRE SEPARATION DISTANCE (feet)	CLASS OF PLASTIC	MAXIMUM PERCENTAGE AREA OF EXTERIOR WALL IN PLASTIC WALL PANELS	MAXIMUM SINGLE AREA OF PLASTIC WALL PANELS (square feet)	MINIMUM SEPARATION OF PLASTIC WALL PANELS (feet)	
				Vertical	Horizontal
Less than 6	—	Not Permitted	Not Permitted	—	—
6 or more but less than 11	CC1	10	50	8	4
	CC2	Not Permitted	Not Permitted	—	—
11 or more but less than or equal to 30	CC1	25	90	6	4
	CC2	15	70	8	4
Over 30	CC1	50	Not Limited	3 ^b	0
	CC2	50	100	6 ^b	3

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

a. For combinations of plastic glazing and plastic wall panel areas permitted, see Section 2607.6.

b. For reductions in vertical separation allowed, see Section 2607.4.

the *story* in which it is installed. The area of a single pane of glazing installed above the first *story above grade plane* shall not exceed 16 square feet (1.5 m²) and the vertical dimension of a single pane shall not exceed 4 feet (1219 mm).

Exception: Where an *automatic sprinkler system* is provided throughout in accordance with Section 903.3.1.1, the area of allowable glazing shall be increased to a maximum of 50 percent of the wall face of the *story* in which it is installed with no limit on the maximum dimension or area of a single pane of glazing.

2. Approved flame barriers extending 30 inches (762 mm) beyond the *exterior wall* in the plane of the floor, or vertical panels not less than 4 feet (1219 mm) in height, shall be installed between glazed units located in adjacent stories.

Exception: Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

3. Light-transmitting plastics shall not be installed more than 75 feet (22 860 mm) above grade level.

Exception: Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

SECTION 2609 LIGHT-TRANSMITTING PLASTIC ROOF PANELS

2609.1 General. Light-transmitting plastic roof panels shall comply with this section and Section 2606. Light-transmitting plastic roof panels shall not be installed in Groups H, I-2 and I-3. In all other groups, light-transmitting plastic roof panels shall comply with any one of the following conditions:

1. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. The roof construction is not required to have a fire-resistance rating by Table 601.
3. The roof panels meet the requirements for roof coverings in accordance with Chapter 15.

2609.2 Separation. Individual roof panels shall be separated from each other by a distance of not less than 4 feet (1219 mm) measured in a horizontal plane.

Exceptions:

1. The separation between roof panels is not required in a building equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. The separation between roof panels is not required in low-hazard occupancy buildings complying with the conditions of Section 2609.4, Exception 2 or 3.

2609.3 Location. Where *exterior wall* openings are required to be protected by Section 705.8, a roof panel shall not be installed within 6 feet (1829 mm) of such *exterior wall*.

2609.4 Area limitations. Roof panels shall be limited in area and the aggregate area of panels shall be limited by a percentage of the floor area of the room or space sheltered in accordance with Table 2609.4.

Exceptions:

1. The area limitations of Table 2609.4 shall be permitted to be increased by 100 percent in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Low-hazard occupancy buildings, such as swimming pool shelters, shall be exempt from the area limitations of Table 2609.4, provided that the buildings do not exceed 5,000 square feet (465 m²) in area and have a minimum fire separation distance of 10 feet (3048 mm).
3. Greenhouses that are occupied for growing plants on a production or research basis, without public access, shall be exempt from the area limitations of Table 2609.4 provided they have a minimum fire separation distance of 4 feet (1220 mm).
4. Roof coverings over terraces and patios in occupancies in Group R-3 shall be exempt from the area limitations of Table 2609.4 and shall be permitted with light-transmitting plastics.

**TABLE 2609.4
AREA LIMITATIONS FOR LIGHT-TRANSMITTING
PLASTIC ROOF PANELS**

CLASS OF PLASTIC	MAXIMUM AREA OF INDIVIDUAL ROOF PANELS (square feet)	MAXIMUM AGGREGATE AREA OF ROOF PANELS (percent of floor area)
CC1	300	30
CC2	100	25

For SI: 1 square foot = 0.0929 m².

SECTION 2610 LIGHT-TRANSMITTING PLASTIC SKYLIGHT GLAZING

2610.1 Light-transmitting plastic glazing of skylight assemblies. Skylight assemblies glazed with light-transmitting plastic shall conform to the provisions of this section and Section 2606. Unit skylights glazed with light-transmitting plastic shall also comply with Section 2405.5.

Exception: Skylights in which the light-transmitting plastic conforms to the required roof-covering class in accordance with Section 1505.

2610.2 Mounting. The light-transmitting plastic shall be mounted above the plane of the roof on a curb constructed in accordance with the requirements for the type of construction classification, but at least 4 inches (102 mm) above the plane of the roof. Edges of light-transmitting plastic skylights or domes shall be protected by metal or other approved noncombustible material, or the light-transmitting plastic dome or skylight shall be shown to

be able to resist ignition where exposed at the edge to a flame from a Class B brand as described in ASTM E 108 or UL 790.

Exceptions:

1. Curbs shall not be required for skylights used on roofs having a minimum slope of three units vertical in 12 units horizontal (25-percent slope) in occupancies in Group R-3 and on buildings with a nonclassified roof covering.
2. The metal or noncombustible edge material is not required where nonclassified roof coverings are permitted.

2610.3 Slope. Flat or corrugated light-transmitting plastic skylights shall slope at least four units vertical in 12 units horizontal (4:12). Dome-shaped skylights shall rise above the mounting flange a minimum distance equal to 10 percent of the maximum span of the dome but not less than 3 inches (76 mm).

Exception: Skylights that pass the Class B Burning Brand Test specified in ASTM E 108 or UL 790.

2610.4 Maximum area of skylights. Each skylight shall have a maximum area within the curb of 100 square feet (9.3 m²).

Exception: The area limitation shall not apply where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or the building is equipped with smoke and heat vents in accordance with Section 910.

2610.5 Aggregate area of skylights. The aggregate area of skylights shall not exceed 33¹/₃ percent of the floor area of the room or space sheltered by the roof in which such skylights are installed where Class CC1 materials are utilized, and 25 percent where Class CC2 materials are utilized.

Exception: The aggregate area limitations of light-transmitting plastic skylights shall be increased 100 percent beyond the limitations set forth in this section where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or the building is equipped with smoke and heat vents in accordance with Section 910.

2610.6 Separation. Skylights shall be separated from each other by a distance of not less than 4 feet (1219 mm) measured in a horizontal plane.

Exceptions:

1. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. In Group R-3, multiple skylights located above the same room or space with a combined area not exceeding the limits set forth in Section 2610.4.

2610.7 Location. Where *exterior wall* openings are required to be protected in accordance with Section 705, a skylight shall not be installed within 6 feet (1829 mm) of such *exterior wall*.

2610.8 Combinations of roof panels and skylights. Combinations of light-transmitting plastic roof panels and skylights shall be subject to the area and percentage limitations and separation requirements applicable to roof panel installations.

SECTION 2611

LIGHT-TRANSMITTING PLASTIC INTERIOR SIGNS

2611.1 General. Light-transmitting plastic interior wall signs shall be limited as specified in Sections 2611.2 through 2611.4. Light-transmitting plastic interior wall signs in *covered mall buildings* shall comply with Section 402.16. Light-transmitting plastic interior signs shall also comply with Section 2606.

2611.2 Aggregate area. The sign shall not exceed 20 percent of the wall area.

2611.3 Maximum area. The sign shall not exceed 24 square feet (2.23 m²).

2611.4 Encasement. Edges and backs of the sign shall be fully encased in metal.

SECTION 2612

**HIGH-VELOCITY HURRICANE ZONES—
PLASTICS**

2612.1 General.

2612.1.1 Plastic materials used as structural elements shall be designed by methods admitting of rational analysis according to established principles of mechanics.

2612.1.2 Plastic materials may be permitted as set forth herein. The physical properties, such as, not but limited to, weather-resistance, fire-resistance and flame spread characteristics, shall comply with the requirements of this code.

2612.1.3 Application and plans submitted for proposed construction shall identify the plastic material intended for use and such material shall be stamped or otherwise marked so as to be readily identifiable in the field.

2612.1.4 Plastic structural elements, other than sheets, shall be designed by a Florida-registered professional engineer or a Florida-registered architect.

2612.2 Definitions.

APPROVED FOAM PLASTIC. An approved foam plastic shall be any thermoplastic, thermosetting or reinforced thermosetting plastic material that has a minimum self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929. It shall have a smoke density rating not greater than 450 and a flame spread of 75 or less when tested in accordance with ASTM E 84.

APPROVED PLASTIC. An approved plastic shall be any thermoplastic, thermosetting or reinforced thermosetting plastic material which has a self-ignition temperature of 650°F (343°C), or greater when tested in accordance with ASTM D 1929, a smoke density rating no greater than 450 when tested in the way intended for use by ASTM E 84 or a smoke density rating no greater than 75 when tested in the thickness intended for use according to ASTM D 2843 and which meets one of the following combustibility classifications:

Class C-1. Plastic materials that have a burning extent of 1 inch per minute (25.4 mm) or less when tested in nominal 0.060 inch (1.5 mm) thickness or in the thickness intended for use by ASTM D 635.

Class C-2. Plastic materials that have a burning rate of $2\frac{1}{2}$ inches (64 mm) per minute or less when tested in nominal 0.060 inch (1.5 mm) thickness or in the thickness intended for use by ASTM D 635.

Approved plastics for outdoor exposure shall be evaluated for outdoor durability in accordance with the *Voluntary Standard Uniform Load Test Procedure for Thermoformed Plastic Domed Skylights*, of the AAMA/WDMA 101/IS2/NAFS, *Voluntary Performance Specification for Windows, Skylights and Glass Doors*, as follows:

1. Outdoor exposure conditions: Specimen exposed in Florida at 45 degree south exposure for a period of five years.
 - a. Impact testing, after exposure test as above, per ASTM D 256, and
 - b. Tensile testing on controlled and weathered specimen per ASTM D 638. Yield strength difference between controlled and weathered specimen shall not exceed 10 percent.
2. Alternate:
 - a. Exposure to xenon arc weatherometer using a 6500-watt lamp per ASTM G 155 and ASTM D 2565 for a period of 4,500 hours.
 - b. Impact testing, after exposure test as above, per ASTM D 256, and
 - c. Tensile testing on controlled and weathered specimen per ASTM D 638. Yield strength difference between controlled and weathered specimen shall not exceed 10 percent.

FINISH RATING. The time, as determined in accordance with ASTM E 119, at which a thermal barrier reaches a temperature rise of 240°F (116°C), above ambient or an individual temperature rise of 324°F (162°C), above ambient as measured on the plane of the thermal barrier nearest to foam plastic.

FLAME SPREAD RATING. The measurement of flame spread on the surface of materials or their assemblies as determined in accordance with ASTM E 84.

GLASS FIBER REINFORCED PLASTIC. Plastic reinforced with glass fibers having not less than 20 percent of glass fibers by weight.

LIGHT DIFFUSING SYSTEM. A suspended construction consisting in whole or in part of lenses, panels, grids or baffles suspended below independently mounted electrical lighting sources.

PLASTIC GLAZING. Plastic materials that are glazed or set in frame or sash and not held by mechanical fasteners which pass through the glazing material.

PLASTIC ROOF PANELS. Plastic materials that are fastened to structural panels or sheathing and which are used as light transmitting media in the plane of the roof.

PLASTIC SANDWICH PANELS. Panels of foam plastic sandwiched between incombustible skins.

PLASTIC WALL PANELS. Plastic materials that are fastened to structural panels or sheathing and which are used as light transmitting medium in exterior walls.

SKYLIGHT. An assembly that includes plastic materials used as light transmitting medium and which is located above the plane of the roof.

SMOKE DENSITY. A numerical value of smoke development, determined by measuring the area under the curve of light absorption versus time, in accordance with ASTM E 84 or ASTM D 2843.

THERMOPLASTIC MATERIALS. A plastic material that is capable of being repeatedly softened by increase of temperature and hardened by decrease of temperature.

THERMOSETTING MATERIALS. A plastic material that is capable of being changed into a substantially nonreformable product when cured.

2612.3 Foam plastics.

2612.3.1 General.

2612.3.1.1 Except as otherwise provided herein, all foam plastics or foam plastic cores in manufactured assemblies used in building construction shall have a flame spread rating of not more than 75 and shall have a smoke-developed rating of not more than 450 when tested in the maximum thickness intended for use in accordance with ASTM E 84.

2612.3.1.2 Except as otherwise provided herein, foam plastics shall be separated from the interior walls, floors and ceiling herein of a building by an approved thermal barrier of $\frac{1}{2}$ inch (13 mm) gypsum wallboard or equivalent thermal barrier material which will limit the average temperature rise of the unexposed surface to not more than 259°F (126°C), after 15 minutes of fire exposure complying with the ASTM E 119 standard time-temperature curve.

2612.3.1.3 Foam plastics trim, defined as picture molds, chair rails, baseboards, handrails, ceiling beams, door trim and window trim, shall also meet requirements for interior finish in Section 805.

2612.3.1.4 Foam plastic not meeting the requirements of this section may be specifically approved on the basis of approved tests such as, but not limited to, a tunnel test in accordance with ASTM E 84, FM procedure 4880, UL Subject 1040, ASTM E 152 or the room test procedure described in SPI Bulletin PPICC 401 or fire tests related to actual end-use configuration. The specific approval may be based on the end use, quantity, location and similar considerations where such tests would not be applicable or practical.

2612.3.2 Specific requirements. The following specific requirements shall apply to all uses of foam plastics unless otherwise permitted in this code.

2612.3.2.1 Cold storage buildings.

2612.3.2.1.1 Foam plastics when tested in a thickness of 4 inches (102 mm), may be used in a thickness up to

10 inches (254 mm) when the building is equipped with an approved automatic fire suppression system.

2612.3.2.1.2 Such approved automatic fire suppression system shall be provided in both the cold storage room and the part of the building in which the room is located.

2612.3.2.2 Walk-in coolers.

2612.3.2.2.1 Foam plastic having a maximum flame spread of 75 may be used in a thickness up to 4 inches (102 mm) in free-standing walk-in cooler or freezer units less than 400 square feet (37 m²) in floor area without a thermal barrier and without an automatic fire suppression system when the foam plastic is covered by a metal facing not less than 0.032 inch (0.813 mm) thick aluminum or corrosion-resistant steel having a minimum base metal thickness of 0.016 inch (0.406 mm).

2612.3.2.2.2 When protected by a thermal barrier, the foam plastic may be used in a thickness up to 10 inches (254 mm).

2612.3.2.3 Exterior walls of one-story buildings.

2612.3.2.3.1 Foam-plastic insulation having a flame spread of 25 or less may be used without thermal barriers in or on exterior fire resistive incombustible walls in a thickness of not less than 0.032 inch (0.813 mm) aluminum or corrosion-resistant steel having a minimum base metal thickness of 0.0160 inch (0.406 mm), and the insulated interior area is protected with automatic sprinklers.

2612.3.2.3.2 Foam plastic may be used without the thermal barrier described herein when it is protected by a minimum of 1 inch (25.4 mm) thickness of masonry or concrete.

2612.3.2.4 Exterior walls of multistory buildings.

2612.3.2.4.1 Where walls face a street or permanent open space of 30 feet (9 m) or more, foam-plastic insulation may be used in a nonfire-rated exterior wall assembly.

2612.3.2.4.2 Where a separation of less than 30 feet (9 m) exists, foam plastic may be used within exterior walls, provided the wall assembly affords the required fire resistivity.

2612.3.2.4.3 Foam-plastic insulation shall be separated from the building interior by a thermal barrier having an index of 15 unless a specific approval is obtained on the basis of Section 2612.3.1.4.

2612.3.2.4.4 The amount of foam plastic in any portion of the wall or panel shall not exceed 6000 Btu/square foot (68.1 MJ/m²) of projected area as determined by tests conducted in accordance with NFPA 259.

2612.3.2.4.5 The foam plastic core, coatings and facings shall have a flame spread rating of 25 or less and smoke-developed rating of 450 or less as determined in accordance with ASTM E 84.

2612.3.2.4.6 Facing, coating and core materials shall be mechanically or adhesively fastened to each other and to building members to prohibit failure in bond as a result of temperatures which may be experienced in a building fire from wind loads or other conditions.

2612.3.2.4.7 Results of diversified or full-scale fire tests reflecting an end-use configuration shall be submitted to the building official demonstrating the assembly in its final form does not propagate the flame over the surface or through the core when exposed on the exterior face to a fire source.

2612.3.2.5 Roofing.

2612.3.2.5.1 Foam plastic may be used in a roof covering assembly without the thermal barrier when the foam is separated from the interior of the building by plywood sheathing not less than 1/2 inch (12.7 mm) in thickness bonded with exterior glue, with edge supported by blocking, tongue-and-grooved joints or other approved type of edge support, or an equivalent or better material or system.

2612.3.2.5.2 Foam-plastic roof insulation that complies with FM 4450 or UL 1256 need not meet the requirements of Section 2612.3.1.2.

2612.3.2.5.3 For all roof applications, the smoke developed rating shall not be limited.

2612.3.2.6 Attics and crawl spaces.

2612.3.2.6.1 Within an attic or crawl space where entry is made for service of utilities, exposed foam plastics shall be protected against ignition by 1-inch thick (25 mm) mineral fiber insulation, 1/4-inch thick (6.4 mm) plywood, particleboard or hardboard or 3/8-inch (9.5 mm) gypsum wall board, corrosion-resistant steel having a base metal thickness of 0.0160 inch (0.406 mm), or other equivalent material installed in such manner that the foam plastic is not exposed.

2612.3.2.6.2 The protective covering shall also meet the requirements for the type of construction.

2612.3.2.7 Doors.

2612.3.2.7.1 Where doors are permitted without a fire-resistance rating, foam plastic having a flame spread rating of 75 or less may be used as a core material when the door facing is metal having a minimum thickness of 0.032 inch (0.813 mm) aluminum or sheet steel having a minimum thickness of 0.0160 inch (0.406 mm).

2612.3.2.7.2 There shall be no thermal barrier requirements for these doors.

2612.4 Light-transmitting plastics.

2612.4.1 General.

2612.4.1.1 The provisions of this section shall govern the quality and methods of application of plastics for use as light transmitting media within buildings and structures.

2612.4.1.2 All plastics to be used according to the provisions of this section shall be approved plastic and conform to Sections 2612.1 and 2612.2.

Exception: Roof coverings over terraces and patios of one- and two-family dwellings shall be permitted with approved plastics.

2612.4.2 Glazing of openings in nonfire-rated walls.

2612.4.2.1 Doors, sash and framed openings which are not required to be fire rated may be glazed with approved plastic materials in buildings of Type III-B construction.

2612.4.2.2 In all other types of construction openings not required to be fire-rated may be glazed or equipped with approved plastic material subject to the requirements listed below.

2612.4.2.2.1 The area of such glazing shall not exceed 25 percent of the wall face of the story in which it is installed.

2612.4.2.2.2 The area of a unit or pane of glazing installed above the first story shall not exceed 16 square feet (1.49 m²) and the vertical dimension of a unit or pane shall not exceed 4 feet (1219 mm). There shall be a minimum 3 feet (914 mm) vertical spandrel wall between stories.

2612.4.2.2.3 Approved plastics shall not be installed more than 75 feet (22.9 m) above grade level except as provided in Section 2612.4.2.2.4.

2612.4.2.2.4 Approved thermoplastic materials may be installed in areas up to 50 percent of the wall area of each story in structures less than 150 feet (45.7 m) in height if continuous architectural projections constitute an effective fire barrier extending at least 3 feet (914 mm) from the surface of the wall on which the glazing is installed and are provided on each floor above the first floor. The size and the dimensions of individual units shall not be limited in such installations except as required to meet structural loading requirements.

2612.4.2.3 Area increase based on fire protection. In buildings or portions thereof protected by approved automatic, fire extinguishing systems, the area of glazing permitted by Section 2612.4.2.2.1 may be increased by 100 percent.

2612.4.3 Exterior nonfire-rated wall panels.

2612.4.3.1 General. Approved plastic materials may be used as wall panels, in exterior walls not required to have a fire rating subject to the requirements in this section.

2612.4.3.1.1 Installation. Exterior wall panels installed as provided herein shall not alter the type of construction classification of the building.

2612.4.3.1.2 Height limitation. Approved plastics shall not be installed more than 75 feet (22.9 m) above grade level except as permitted by Section 2612.4.3.1.4 (Exception 3).

2612.4.3.1.3 Area limitation and separation. Area limitation and separation requirements of exterior wall panels shall be provided in Table 2612.4.3.1.3.

2612.4.3.1.4 Combination of glazing and wall panels. Combinations of plastic glazing and plastic wall panels shall be subject to the area, height and percentage limitations and separation requirements applicable to the class of plastics as prescribed for wall panel installations.

Exceptions:

1. Structures which provide continuous architectural projections extending at least 36 inches (914 mm) from the surface of the wall in which plastic wall panels are installed shall not be required to provide vertical separation at that floor.
2. Area increase based on fire protection. In buildings or portions thereof protected by approved automatic fire extinguishing systems, the maximum percent area of plastic panes in exterior walls and the maximum square feet of separate panel are given in Table 2612.4.3.1.3 may be increased 100 percent but the area of plastic wall panels shall not exceed 50 percent of the wall area.
3. Approved thermoplastic materials may be installed in areas up to 50 percent of the wall area of each story in structures less than 150 feet (45.7 m) in width if continuous architectural projections constitute an effective fire barrier extending at least 3 feet (914 mm)

**TABLE 2612.4.3.1.3
AREA LIMITATION AND SEPARATION REQUIREMENTS FOR PLASTIC WALL PANELS IN NONFIRE-RATED WALLS**

FIRE SEPARATION (FT)	CLASS OF PLASTIC	MAX. AGGREGATE AREA (% OF EXTERIOR WALL)	MAX. SEPARATED PANEL AREA (SQ FT)	MINIMUM SEPARATION OF PANELS (FT)	
				VERTICAL	HORIZONTAL
10 up to and including 30	C1	25	90	6	4
	C2	15	70	8	4
Over 30	C1	50	no limit	3 ¹	0
	C2	50	100	6 ¹	3

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

Note 1: See Exception 1 to Section 2612.4.3.1.

from the surface of the wall on which the panels are installed and are provided on each floor above the first floor.

4. The use of plastics shall not be permitted in exterior walls in Group A, H and I occupancies.

2612.4.4 Roof panels.

2612.4.4.1 General. Approved plastic roof panels may be installed as follows.

2612.4.4.1.1 Where the roof is not required to have a fire rating.

2612.4.4.1.2 Where the roof panels meet the requirements for roof coverings of the particular occupancy.

2612.4.4.1.3 In roofs of buildings protected by an approved automatic fire-extinguishing system.

Exception: The use of plastics shall not be permitted in roofs of Group A, H and I occupancies.

2612.4.4.2 Separations. Individual roof panels shall be separated from each other by a distance of not less than 4 feet (1219 mm) measured in a horizontal plane.

2612.4.4.3 Location. Where exterior wall openings are required to be fire rated, a roof panel or unit shall not be installed within 6 feet (1829 mm) of such exterior wall.

2612.4.4.4 Area limitations. Roof panels or units shall be limited in area, according to provisions set forth in Table 2612.4.4.4.

2612.4.5 Skylight assemblies. Skylight assemblies may be glazed with approved plastic materials in accordance with this section.

2612.4.5.1 Mounting.

2612.4.5.1.1 The plastic shall be mounted a minimum of 4 inches (102 mm) above the plane of the roof on a curb constructed in accordance with requirements of types of construction.

2612.4.5.1.2 Dome-shape skylights shall rise above the mounting flange a minimum distance equal to 10 percent of the maximum span of the dome, but not less than 4 inches (102 mm).

2612.4.5.1.3 The edges of the skylights shall be protected by incombustible material in Types I, IV and V-B construction.

2612.4.5.2 Maximum area of skylight units. Each skylight unit shall have a maximum area within the curb of 100 square feet (9.3 m²) for Class C-2 material and 200 square feet (18.6 m²) for Class C-1 material.

2612.4.5.3 Aggregate area of skylights. The aggregate area of skylights shall not exceed 33 percent when Class C-1 materials are used and 25 percent when Class C-2 materials are used, of the floor area of the room or space sheltered by the roof in which they are installed.

2612.4.5.4 Separation. Skylights shall be separated from each other by a distance of not less than 4 feet (1219 mm) measured in a horizontal plane.

2612.4.5.5 Location. Where exterior wall openings are required to be fire rated, a skylight shall not be installed within 6 feet (1829 mm) of such exterior wall.

Exceptions:

1. Skylight assemblies may not be glazed with approved plastic materials in buildings of Group H and I occupancies.
2. The aggregated area of approved plastic skylights may be increased 100 percent beyond the limitations set forth herein if the skylights are used as an automatic fire venting system or if the building is equipped with an automatic fire extinguishing system.
3. When a building not more than one story in height has a minimum distance separation from other buildings of 30 feet (9.1 m) and is not used as an enclosed means of egress, skylights in such a building need not comply with the requirements set forth in this paragraph.
4. When skylights used in a building are made of approved plastic materials that meet the fire-rated requirements of the roof of the building, such skylight assemblies need not comply with the requirements set forth in this paragraph.
5. Skylights installed in detached buildings of Group R3 occupancy, Types IV and III-B need not comply with this section.

2612.4.6 Light diffusing systems.

2612.4.6.1 General.

2612.4.6.1.1 Light diffusing systems shall not be installed in Group I and H occupancies or in exitways unless they are protected with an approved automatic fire extinguishing system.

2612.4.6.1.2 Approved plastic diffusers shall comply with the flame spread requirements for interior finishes, unless the individual plastic panels will fall from their mountings before igniting at an ambient

**TABLE 2612.4.4.4
AREA LIMITATIONS FOR ROOF PANELS**

CLASS OF PLASTIC	MAX. SEPARATED PANEL AREA (SQ FT)	MAX. AGGREGATE AREA (% OF FLOOR AREA)
C1	300	30
C2	100	25

For SI: 1 square foot = 0.0929 m².

temperature of at least 200°F (93°C) below their ignition temperature. The panels must, however, remain in place at an ambient room temperature of 175°F (79°C) for a period of not less than 15 minutes.

2612.4.6.1.3 Location. Where fire-rated ceiling assemblies are required, plastic diffusers, if used, shall be located below such assemblies.

2612.4.6.2 Installation. Plastic diffusers shall be supported directly or indirectly from ceiling or roof construction by use of incombustible hangers. Hangers shall be at least No. 12 Steel Wire Gage [0.0106 inch (0.27 mm)] galvanized wire or equivalent.

2612.4.6.3 Size limitations. Individual panels or units shall not exceed 10 feet (3 m) in length or 30 square feet (2.8 m²) in area.

2612.4.6.4 When buildings are protected by an automatic fire extinguishing system, this section shall apply to light diffusing systems within such buildings.

2612.4.6.4.1 Fire-extinguishing systems shall be located above and below the light diffusing system unless specifically approved for above such system only.

2612.4.6.4.2 Areas of light-diffusing systems protected by a fire-extinguishing system shall not have to comply with the size limitations set forth in this section.

2612.4.6.5 Electrical lighting fixtures.

2612.4.6.5.1 Plastic light-transmitting panels and light-diffuser panels installed in product approval electrical lighting fixtures shall have flame spread ratings compatible with the occupancy of the building.

2612.4.6.5.2 The area of approved plastic materials when used in required fire exits or corridors shall not exceed 30 percent of the aggregate area of the ceiling in which they are installed, unless the occupancy is protected by an approved fire extinguishing system.

2612.4.7 Partitions. Approved light-transmitting plastics may be used in or as partitions provided the requirement of the types of construction are met.

2612.4.8 Bathroom accessories. Approved plastics shall be permitted as glazing in shower stalls, shower doors, bathtub enclosures and similar accessory units and shall conform to 16 CFR 1205 and the *Safety Standard for Architectural Glazing Materials*.

2612.4.9 Awnings and similar structures. Approved light-transmitting plastics may be used on or as awnings and similar structures when in conformance with provisions as set forth in other sections of this code.

**SECTION 2613
FIBER REINFORCED POLYMER AND
FIBERGLASS REINFORCED POLYMER**

2613.1 General. The provisions of this section shall govern the requirements and uses of fiber reinforced polymer or fiberglass reinforced polymer in and on buildings and structures.

2613.2 Labeling and identification. Packages and containers of fiber reinforced polymer or fiberglass reinforced polymer and their components delivered to the job site shall bear the *label* of an *approved agency* showing the manufacturer's name, product listing, product identification and information sufficient to determine that the end use will comply with the code requirements.

2613.3 Interior finish. Fiber reinforced polymer or fiberglass reinforced polymer used as *interior finish* shall comply with Chapter 8.

2613.4 Decorative materials and trim. Fiber reinforced polymer or fiberglass reinforced polymer used as *decorative materials* or *trim* shall comply with Section 806.

2613.5 Light-transmitting materials. Fiber reinforced polymer or fiberglass reinforced polymer used as light-transmitting materials shall comply with Sections 2606 through 2611 as required for the specific application.

2613.6 Exterior use. Fiber reinforced polymer or fiberglass reinforced polymer shall be permitted to be installed on the *exterior walls* of buildings of any type of construction when such polymers meet the requirements of Section 2603.5 and is fireblocked in accordance with Section 717. The fiber reinforced polymer or the fiberglass reinforced polymer shall be designed for uniform live loads as required in Table 1607.1 as well as for wind loads as specified in Section 1609.

Exceptions:

1. When all of the following conditions are met:
 - 1.1. When the area of the fiber reinforced polymer or the fiberglass reinforced polymer does not exceed 20 percent of the respective wall area, the fiber reinforced polymer or the fiberglass reinforced polymer shall have a flame spread index of 25 or less or when the area of the fiber reinforced polymer or the fiberglass reinforced polymer does not exceed 10 percent of the respective wall area, the fiber reinforced polymer or the fiberglass reinforced polymer shall have a flame spread index of 75 or less. The flame spread index requirement shall not be required for coatings or paints having a thickness of less than 0.036 inch (0.9 mm) that are applied directly to the surface of the fiber reinforced polymer or the fiberglass reinforced polymer.
 - 1.2. Fireblocking complying with Section 717.2.6 shall be installed.
 - 1.3. The fiber reinforced polymer or the fiberglass reinforced polymer shall be installed directly to a noncombustible substrate or be separated from the *exterior wall* by one of the following materials: corrosion-resistant steel having a

minimum base metal thickness of 0.016 inch (0.41 mm) at any point, aluminum having a minimum thickness of 0.019 inch (0.5 mm) or other approved noncombustible material.

- 1.4. The fiber reinforced polymer or the fiberglass reinforced polymer shall be designed for uniform live loads as required in Table 1607.1, as well as for wind loads as specified in Section 1609.
2. When installed on buildings that are 40 feet (12 190 mm) or less above grade, the fiber reinforced polymer or the fiberglass reinforced polymer shall meet the requirements of Section 1406.2 and shall comply with all of the following conditions:
 - 2.1. Where the fire separation distance is 5 feet (1524 mm) or less, the area of the fiber reinforced polymer or the fiberglass reinforced polymer shall not exceed 10 percent of the wall area. Where the fire separation distance is greater than 5 feet (1524 mm), there shall be no limit on the area of the *exterior wall* coverage using fiber reinforced polymer or the fiberglass reinforced polymer.
 - 2.2. The fiber reinforced polymer or the fiberglass reinforced polymer shall have a flame spread index of 200 or less. The flame spread index requirement shall not be required for coatings or paints having a thickness of less than 0.036 inch (0.9 mm) that are applied directly to the surface of the fiber reinforced polymer or the fiberglass reinforced polymer.
 - 2.3. Fireblocking complying with Section 717.2.6 shall be installed.
 - 2.4. The fiber reinforced polymer or the fiberglass reinforced polymer shall be designed for uniform live loads as required in Table 1607.1, as well as for wind loads as specified in Section 1609.

thickness intended for use and shall be tested using one of the mounting methods in Section 2614.3.1 or 2614.3.2.

2614.3.1 Mounting of test specimen. The test specimen shall be mounted on 2-inch-high (51 mm) metal frames so as to create an air space between the unexposed face of the reflective plastic core insulation and the lid of the test apparatus.

2614.3.2 Specific testing. A set of specimen preparation and mounting procedures shall be used which are specific to the testing of reflective plastic core insulation.

2614.4 Room corner test heat release. Reflective plastic core insulation shall comply with the acceptance criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 or UL 1715 in the manner intended for use and at the maximum thickness intended for use.

SECTION 2614

REFLECTIVE PLASTIC CORE INSULATION

2614.1 General. The provisions of this section shall govern the requirements and uses of reflective plastic core insulation in buildings and structures. Reflective plastic core insulation shall comply with the requirements of Section 2614.2 and of one of the following: Section 2614.3 or 2614.4.

2614.2 Identification. Packages and containers of reflective plastic core insulation delivered to the job site shall show the manufacturer's or supplier's name, product identification and information sufficient to determine that the end use will comply with the code requirements.

2614.3 Surface-burning characteristics. Reflective plastic core insulation shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 450 when tested in accordance with ASTM E 84 or UL 723. The reflective plastic core insulation shall be tested at the maximum