

**APPENDIX C**  
**FORMS**

# ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX\* =  
The lower the Energy Performance Index, the more efficient the home.

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|--|---|
| <p>1. New Home or addition _____</p> <p>2. Single family or multiple family _____</p> <p>3. Number of units, (if multi-family) _____</p> <p>4. Number of bedrooms _____</p> <p>5. Is this a worst case? (yes or no) _____</p> <p>6. Conditioned floor area _____ sq. ft.</p> <p>7. Glass type &amp; area</p> <p style="padding-left: 20px;">a. U-Factor: _____ sq. ft.</p> <p style="padding-left: 20px;">(Or single or double Default) _____ sq. ft.</p> <p style="padding-left: 20px;">b. SHGC** : _____ sq. ft.</p> <p style="padding-left: 20px;">(Or clear or tint Default) _____ sq. ft.</p> <p>8. Floor types, Insulation level</p> <p style="padding-left: 20px;">a. Slab-on-grade, edge insulation R= _____</p> <p style="padding-left: 20px;">b. Wood, raised R= _____</p> <p style="padding-left: 20px;">c. Concrete, raised R= _____</p> <p>9. Wall types, Insulation level</p> <p style="padding-left: 20px;">Exterior</p> <p style="padding-left: 40px;">a. Wood frame R= _____</p> <p style="padding-left: 40px;">b. Metal frame R= _____</p> <p style="padding-left: 40px;">c. Concrete block R= _____</p> <p style="padding-left: 40px;">d. Log R= _____</p> <p style="padding-left: 40px;">e. Other _____ R= _____</p> <p style="padding-left: 20px;">Adjacent</p> <p style="padding-left: 40px;">a. Wood frame R= _____</p> <p style="padding-left: 40px;">b. Metal frame R= _____</p> <p style="padding-left: 40px;">c. Concrete block R= _____</p> <p style="padding-left: 40px;">d. Log R= _____</p> <p style="padding-left: 40px;">e. Other _____ R= _____</p> <p>10. Ceiling types, Insulation level</p> <p style="padding-left: 20px;">a. Under attic R= _____</p> <p style="padding-left: 20px;">b. Single assembly R= _____</p> <p style="padding-left: 20px;">c. Knee walls/skylight walls R= _____</p> <p style="padding-left: 20px;">d. Radiant barrier installed R= _____</p> | <p>11. Ducts, Location &amp; Insulation Level</p> <p style="padding-left: 20px;">a. Supply ducts: _____ R= _____</p> <p style="padding-left: 20px;">b. Return ducts: _____ R= _____</p> <p>12. Cooling systems Capacity: _____</p> <p style="padding-left: 20px;">a. Split system SEER: _____</p> <p style="padding-left: 20px;">b. Single package SEER: _____</p> <p style="padding-left: 20px;">c. Ground/water source COP: _____</p> <p style="padding-left: 20px;">d. Room unit EER: _____</p> <p style="padding-left: 20px;">e. PTAC EER: _____</p> <p style="padding-left: 20px;">f. Gas-driven COP: _____</p> <p>13. Heating Systems Capacity: _____</p> <p style="padding-left: 20px;">a. Split system heat pump HSPF: _____</p> <p style="padding-left: 20px;">b. Single package heat pump HSPF: _____</p> <p style="padding-left: 20px;">c. Electric resistance COP: _____</p> <p style="padding-left: 20px;">d. Gas furnace, natural gas AFUE: _____</p> <p style="padding-left: 20px;">e. Gas furnace, LPG AFUE: _____</p> <p style="padding-left: 20px;">f. Gas-driven heat pump Recov. EFF.: _____</p> <p>14. Water heating systems</p> <p style="padding-left: 20px;">a. Electric resistance EF: _____</p> <p style="padding-left: 20px;">b. Gas fired, natural gas EF: _____</p> <p style="padding-left: 20px;">c. Gas fired, LPG EF: _____</p> <p style="padding-left: 20px;">d. Solar System with tank EF: _____</p> <p style="padding-left: 20px;">e. Dedicated heat pump with tank EF: _____</p> <p style="padding-left: 20px;">f. Heat recovery unit HeatRec%</p> <p style="padding-left: 20px;">g. Other: _____</p> <p>15. HVAC credits claimed (Alternate Point System Method only)</p> <p style="padding-left: 20px;">a. Ceiling fans _____</p> <p style="padding-left: 20px;">b. Cross ventilation _____</p> <p style="padding-left: 20px;">c. Whole house fan _____</p> <p style="padding-left: 20px;">d. Multizone cooling credit _____</p> <p style="padding-left: 20px;">e. Multizone heating credit _____</p> <p style="padding-left: 20px;">f. Programmable thermostat _____</p> |
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*\*NOTE: This is not a Building Energy Rating. If your index is below 70, your home may qualify for energy efficiency mortgage (EEM) incentives if you obtain a Florida Building Energy Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the Energy Gauge web site at [www.energygauge.com](http://www.energygauge.com) for information and a list of certified Raters. For information about Florida's Energy Efficiency Code, contact the Florida Building Commission's support staff.*

*\*\*Label required by Section 303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.*

I certify that this home has complied with the Florida Energy Efficiency Code through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

**Builder Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Address of New Home:** \_\_\_\_\_ **City/FL Zip:** \_\_\_\_\_

**FORM 400D-2010**

**DESUPERHEATER, HEAT RECOVERY UNIT (HRU) WATER HEATER  
EFFICIENCY CERTIFICATION**

**TESTS CONDUCTED IN ACCORDANCE WITH  
AHRI STANDARD 470**

Laboratory: \_\_\_\_\_ Date of Test: \_\_\_\_\_  
Report Approved By: \_\_\_\_\_ Report No: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_ Model No: \_\_\_\_\_  
Construction Type: \_\_\_\_\_  
Recommended for use with refrigeration system capacities of \_\_\_\_\_ tons.  
Design Pressure: Water side \_\_\_\_\_ psig  
Refrigerant side \_\_\_\_\_ psig

**Test results at Standard Conditions:**

Test refrigerant designation: \_\_\_\_\_  
Tested at system capacity: \_\_\_\_\_ Tons  
Total system hot gas superheat: \_\_\_\_\_ Btu/h  
Total useful heat exchange effect: \_\_\_\_\_ Btu/h  
Water pump input: \_\_\_\_\_ Watts

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**NET SUPERHEAT RECOVERY: \_\_\_\_\_ %**

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FORMS

<b>FORM 402-2010</b>	<b>FLORIDA BUILDING CODE, ENERGY CONSERVATION</b> <b>Residential Building Thermal Envelope Approach</b>	<b>ALL CLIMATE ZONES</b>
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**Scope:** Compliance with Section 402 of the *Florida Building Code, Energy Conservation*, shall be demonstrated by the use of Form 402 for single- and multiple-family residences of three stories or less in height, additions to existing residential buildings, renovations to existing residential buildings, new heating, cooling, and water heating systems in existing buildings, as applicable. To comply, a building must meet or exceed all of the energy efficiency requirements on Table 402A and all applicable mandatory requirements summarized in Table 402B of this form. If a building does not comply with this method or Alternate Form 402, it may still comply under Section 405 of the *Florida Building Code, Energy Conservation*.

<b>PROJECT NAME: AND ADDRESS:</b>	<b>BUILDER:</b>	
	<b>PERMITTING OFFICE:</b>	
<b>OWNER:</b>	<b>PERMIT NO.:</b>	<b>JURISDICTION NO.:</b>

**General Instructions:**

1. New construction which incorporates any of the following features cannot comply using this method: glass areas in excess of 20 percent of conditioned floor area, electric resistance heat and air handlers located in attics. **Additions ≤ 600 sq. ft., renovations and equipment changeouts may comply by this method with exceptions given.**
2. Fill in all the applicable spaces of the "To Be Installed" column on Table 402A with the information requested. All "To Be Installed" values must be equal to or more efficient than the required levels.
3. Complete page 1 based on the "To Be Installed" column information.
4. Read the requirements of Table 402B and check each box to indicate your intent to comply with all applicable items.
5. Read, sign and date the "Prepared By" certification statement at the bottom of page 1. The owner or owner's agent must also sign and date the form.

	Please Print	CK
<b>1. New construction, addition, or existing building</b>	1. _____	_____
<b>2. Single-family detached or multiple-family attached</b>	2. _____	_____
<b>3. If multiple-family—No. of units covered by this submission</b>	3. _____	_____
<b>4. Is this a worst case? (yes/no)</b>	4. _____	_____
<b>5. Conditioned floor area (sq. ft.)</b>	5. _____	_____
<b>6. Glass type and area:</b>	6a. _____	_____
a. U-factor	6b. _____	_____
b. SHGC	6c. _____ sq. ft.	_____
c. Glass area		
<b>7. Percentage of glass to floor area</b>	7. _____ %	_____
<b>8. Floor type, area or perimeter, and insulation:</b>	<b>8a. R = _____ lin. ft.</b>	_____
a. Slab-on-grade (R-value)	<b>8b. R = _____ sq. ft.</b>	_____
b. Wood, raised (R-value)	<b>8c. R = _____ sq. ft.</b>	_____
c. Wood, common (R-value)	<b>8d. R = _____ sq. ft.</b>	_____
d. Concrete, raised (R-value)	<b>8e. R = _____ sq. ft.</b>	_____
e. Concrete, common (R-value)		
<b>9. Wall type, area and insulation:</b>	<b>9a-1. R = _____ sq. ft.</b>	_____
a. Exterior:	<b>9a-2. R = _____ sq. ft.</b>	_____
1. Masonry (Insulation R-value)	<b>9b-1. R = _____ sq. ft.</b>	_____
2. Wood frame (Insulation R-value)	<b>9b-2. R = _____ sq. ft.</b>	_____
b. Adjacent:		
1. Masonry (Insulation R-value)	<b>10a. R = _____ sq. ft.</b>	_____
2. Wood frame (Insulation R-value)	<b>10b. R = _____ sq. ft.</b>	_____
<b>10. Ceiling type, area and insulation:</b>		
a. Under attic (Insulation R-value)		
b. Single assembly (Insulation R-value)		
<b>11. Air distribution system: Duct insulation, location, Qn</b>	<b>11a. R = _____</b>	_____
a. Duct location, insulation	<b>11b. _____</b>	_____
b. AHU location	<b>11c. Test report attached? Yes No</b>	_____
c. Qn, Test report attached (< 0.03; yes/no)		
<b>12. Cooling system:</b>	<b>12a. Type: _____</b>	_____
a. Type	<b>12b. SEER/EER: _____</b>	_____
b. Efficiency		
<b>13. Heating system:</b>	<b>13a. Type: _____</b>	_____
a. Type	<b>13b. HSPF/COP/AFUE: _____</b>	_____
b. Efficiency		
<b>14. HVAC sizing calculation: attached</b>	<b>14. Yes No</b>	_____
<b>15. Hot water system:</b>	<b>15a. Type: _____</b>	_____
a. Type	<b>15b. EF: _____</b>	_____
b. Efficiency		

I hereby certify that the plans and specifications covered by the calculation are in compliance with the Florida Energy Code. PREPARED BY: _____ DATE: _____ I hereby certify that this building is in compliance with the Florida Energy Code. OWNER AGENT: _____ DATE: _____	Review of plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed, this building will be inspected for compliance in accordance with Section 553.908, F.S. CODE OFFICIAL: _____ DATE: _____
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TABLE 402A

BUILDING COMPONENT	PERFORMANCE CRITERIA <sup>1</sup>	INSTALLED VALUES:	
Windows (see Note 2): Skylights	U-Factor < 0.65 SHGC = 0.30 % of CFA < = 20% U-Factor < 0.75	U-Factor = SHGC = % of CFA =	
Doors: Exterior door U-Factor	U-Factor < 0.65	U-Factor =	
Floors: Slab-on-grade Over unconditioned spaces (see Note 3)	No requirement R-13	R-Value =	
Walls – Ext. and Adj. (see Note 3): Frame Mass (see Note 3) Interior of wall: Exterior of wall:	R-13 R-7.8 R-6	R-Value = R-Value = R-Value =	
Ceilings (see Notes 3 & 4) Reflectance	R=30 0.25	R-Value = Reflectance =	Test report Attached? Yes/No
Air distribution system (see Note 4) Ductwork & air handling unit: Unconditioned space Conditioned space Duct R-value Air leakage Qn	Not allowed R-value ≥ 6 Qn ≤ 0.03	Location: R-Value = Qn =	Test report Attached? Yes/No
Air conditioning systems (see Note 5)	SEER = 13.0	SEER =	
Heating system Heat pump (see Note 5) Cooling: Heating: Gas furnace Oil furnace Electric resistance: Not allowed (see Note 5)	SEER = 13.0 HSPF = 7.7 AFUE 78% AFUE 78%	SEER = HSPF = AFUE = AFUE =	
Water heating system (storage type) Electric (see Note 6): Gas fired (see Note 7): Other (describe):	40 gal: EF = 0.92 50 gal: EF = 0.90 40 gal: EF = 0.59 50 gal: EF = 0.58	Gallons = EF = Gallons = EF =	

- (1) Each component present in the As Proposed home must meet or exceed each of the applicable performance criteria in order to comply with this code using this method; otherwise Section 405 compliance must be used.
- (2) Windows and doors qualifying as glazed fenestration areas must comply with both the maximum U-Factor and the maximum SHGC (solar Heat Gain Coefficient) criteria and have a maximum total window area equal to or less than 20% of the conditioned floor area (CFA); otherwise Section 405 must be used for compliance. Exception: Additions of 600 square feet (56 m<sup>2</sup>) or less may have a maximum glass to CFA of 50 percent.
- (3) R-values are for insulation material only as applied in accordance with manufacturers' installation instructions. For mass walls, the "interior of wall" requirement must be met except if at least 50% of the R-6 insulation required for the "exterior of wall" is installed exterior of, or integral to, the wall.
- (4) Ducts & AHU installed substantially leak free per Section 403.2.2.1. Test by Class 1 BERS rater required. Exception: Ducts installed onto an existing air distribution system as part of an addition or renovation; duct must be R-6 installed per Sec. 503.2.7.2.
- (5) For all conventional units with capacities greater than 30,000 Btu/hr. For other types of equipment, see Tables 503.2.3(1-8). Exception: The prohibition on electric resistance heat does not apply to additions, renovations and new heating systems installed in existing buildings.
- (6) For other electric storage volumes, minimum EF = 0.97-(0.00132 x volume).
- (7) For other natural gas storage volumes, minimum EF = 0.67-(0.0019 x volume).

TABLE 402B MANDATORY REQUIREMENTS			
COMPONENTS	SECTION	REQUIREMENTS	CHECK
Air leakage	402.4	To be caulked, gasketed, weatherstripped or otherwise sealed. Recessed lighting IC-rated as meeting ASTM E 283. Windows and doors = 0.30 cfm/sq.ft. Testing or visual inspection required. Fireplaces: gasketed doors & outdoor combustion air.	
Ceilings/knee walls	405.2.1	R-19 space permitting.	
Programmable thermostat	403.1.1	Where forced-air furnace is primary system, programmable thermostat is required.	
Air distribution system	403.2	Ducts in attics or on roofs insulated to R-8; other ducts R-6. Ducts tested to Q <sub>a</sub> = 0.03 by a Class 1 BERS rater.	
Water heaters	403.4	Heat trap required for vertical pipe risers. Comply with efficiencies in Table 403.4.3.2. Provide switch or clearly marked circuit breaker (electric) or shutoff (gas). Circulating system pipes insulated to = R-2 + accessible manual OFF switch.	
Swimming pool & spas	403.9	Spas and heated pools must have vapor-retardant covers or a liquid cover or other means proven to reduce heat loss except if 70% of heat from site-recovered energy. Off/timer switch required. Gas heaters minimum thermal efficiency = 78% (82% after 4/16/13). Heat pump pool heaters minimum COP= 4.0.	
Cooling/heating equipment	403.6	Sizing calculation performed & attached. Minimum efficiencies per Tables 503.2.3. Equipment efficiency verification required. Special occasion cooling or heating capacity requires separate system or variable capacity system. Electric heat >10kW must be divided into two or more stages.	
Lighting equipment	404.1	At least 50% of permanently installed lighting fixtures shall be high-efficacy lamps.	

**FORMS**

**FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION  
CHAPTER 5 — BUILDING ENVELOPE PRESCRIPTIVE METHOD**

**Form 502-2010**

**All Climate Zones**

Project Name:	Buildings that may comply by this form: shell buildings (preliminary), renovation, change of occupancy type permitted before 1979, limited or special use building, building system changeouts).
Address:	
City, Zip Code:	Building Permit No.:
Builder:	Permitting Office:
Owner:	Jurisdiction No.:

**BUILDING ENVELOPE INFORMATION**

ENVELOPE COMPONENT	SHELL BUILDING	RENOVATION; CHANGE OF OCCUPANCY TYPE; LIMITED/SPECIAL USE BUILDING; LIGHTING OR EQUIPMENT CHANGEOUT
Roof: Absorptance: R-value (U-value):		
Wall: Above grade wall Absorptance: R-value (U-value): Below grade wall		
Floor: Raised Floor Insulation: R-value (U-value): Slab-on-grade: No requirement unless heated:		
Fenestration: U- factor SHGC (by percent of wall area): Overhang Projection Factor (PF):		N.A.
Skylights: SHGC: U- factor: Percent of roof area:		N.A.

**SYSTEMS INFORMATION**

SYSTEM	Type (describe system)	Size (capacity)	Sizing calculation	Efficiency Rating
Air-conditioning system				
Heating system				
Ventilation				CFM
Ducts	Location:	Fan Power:		R-value
Piping	Fluid design operating temp:	Size of pipe:	-----	Inches
Hot water			-----	EF
Electric power	Drawings	Y N	Operations manual available upon completion: Y N	
Motors	Open or enclosed		Poles & speed	Horsepower:
Lighting	Space type:		Lighting power density	

**PRESCRIPTIVE MEASURES**

Components	Section	Requirements	Check
Operations Manual	303.3.1	Operations manual provided to owner.	
Air Infiltration: Windows & Doors Joints/Cracks Dropped Ceiling Cavity	502.3	Per 402.4.4: Windows, skylights & sliding glass doors air infiltration = .3 cfm/sq.ft. Swinging doors = 0.5 cfm/sq.ft. To be caulked, gasketed, weatherstripped or otherwise sealed. Recessed lights IC-rated and labeled to ASTM E 283. Vented: seal & insulated ceiling. Unvented seal & insulate roof & side walls.	
Dehumidification	503.4.5	Simultaneous heating/cooling prohibited, Exceptions.	
HVAC Efficiency	503.2.3	Minimum efficiencies: Tables 503.2.3(1)-(8)	
HVAC Controls	503.2.4	Zone controls prevent reheat (exceptions); separate thermostatic control per zone; combined HAC control 5°F deadband, Exceptions.	
Ventilation	503.2.5	Outdoor air supply & exhaust ducts shall have dampers that automatically shut when systems or spaces served are not in use. Exhaust air energy recovery required for cooling systems (Exceptions).	
HVAC Ducts	503.2.7	Air ducts, fittings, mechanical equipment & plenum chambers shall be mechanically attached, sealed, insulated & installed per Table 503.2.7.2. Fan power limitations.	
Balancing	503.2.9.1	HVAC distribution system(s) tested & balanced. Report in construction documents.	
Piping Insulation	503.2.8	HAC and service hot water. In accordance with Table 503.2.8	
Water Heaters	504	Performance requirements in accordance with Table 504.2. Heat trap required.	
Swimming Pools	504.7	Vapor-retardant or liquid cover or other means proven to reduce heat loss on heated pools; Time switch (exceptions); Readily accessible on/off switch	
Lighting Controls	505.2, 502.3	Automatic control required for interior lighting in buildings > 5,000 s.f.; Space control; Exterior photo sensor; Tandem wiring where 1-3 linear fluorescent lamps > 30W	

I hereby certify that the plans and specifications covered by the calculation are in compliance with the Florida Energy Code. PREPARED BY: _____ DATE: _____ I hereby certify that this building is in compliance with the Florida Energy Code: OWNER AGENT: _____ DATE: _____	Review of plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed, this building will be inspected for compliance in accordance with Section 553.908, F.S. BUILDING OFFICIAL: _____ DATE: _____
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BUILDING ENVELOPE REQUIREMENTS			
SHELL BUILDINGS		RENOVATIONS; CHANGE OF OCCUPANCY; LIMITED/SPECIAL USE BUILDING; LIGHTING OR EQUIPMENT CHANGEOUT <sup>1</sup>	
BUILDING COMPONENT	REQUIREMENT	BUILDING COMPONENT	REQUIREMENT
Roof: Absorptance R-value (U-value)	≤ 0.22 R-40 (U ≤ 0.025)	Roof: Absorptance U-value	≤ 0.22 R-38(U ≤ 0.033)
Wall: Above grade wall Absorptance R-value (U-value) Below grade wall	≤ 0.30 R-30 (U ≤ 0.032) No requirement	Wall: Above grade wall Absorptance R-value (U-value) Below grade wall	≤ 0.30 R-19 (U ≤ 0.052) No requirement
Raised Floor Insulation: R-value (U-value):	R-30 (U ≤ 0.032)	Raised Floor Insulation: R-value (U-value)	R-19 (U ≤ 0.052)
Windows: U- factor SHGC (by window area) <sup>2</sup> 0-40% WW Ratio 40-50% WW Ratio > 50 % Not allowed	≤ 0.45 0.25 0.19	Windows: U-factor SHGC (by window area) 0-40% WW Ratio > 40% WW Ratio	≤ 0.45 0.25 0.25
Skylights: SHGC U- factor Maximum percent of roof area	≤ 0.19 ≤ 1.36 ≤ 3%	Skylights: SHGC Skylight U-factor	≤ 0.19 ≤ 1.36
Opaque Door U- value: Swinging Non-swinging	≤ 0.70 ≤ 1.45	Opaque Door U-value: Swinging Non-swinging	≤ 0.70 ≤ 1.45
BUILDING SYSTEM REQUIREMENTS			
<b>SHELL BUILDINGS:</b> Lighting and HVAC must be sufficiently efficient to meet Method A criteria for the entire space at time of build-out.		<b>OTHER BUILDINGS:</b> Replacement systems <sup>3</sup>	
HVAC Equipment			
Air conditioner (0-65 KBtuh)	13.0 SEER	Heat pump (0 – 65 KBtuh)	13.0 SEER/ 7.7 HSPF
Air conditioner (> 65-135 KBtuh)	11.2 EER	Heat pump (> 65 – 135 KBtuh)	10.8 EER/3.3 COP
Air conditioner (>135-240 KBtuh)	11.0 EER, 11.2 IEER	Heat pump (>135-240 KBtuh)	10.4 EER/3.2 COP
Air conditioner (> 240-760 KBtuh)	10.0 EER, 10.1 IEER	Heat pump (> 240 KBtuh)	9.3 EER, 9.0 IPLV/3.1 COP
Air conditioner (> 760 KBtuh)	9.7 EER, 9.8 IEER	Gas furnace (0-225 KBtuh)	80% AFUE
		Gas furnace (>225 KBtuh)	80% E <sub>c</sub>
Service Hot Water		Lighting	
Gas storage ≤ 75,000 Btu/h, ≥ 20 gallons	0.67-0.0019V EF	LPD for space type on Table 505.5.3	
Gas storage > 75,000 Btu/h	80% E <sub>c</sub>		
Gas instantaneous	80% E <sub>c</sub>		
Electric storage ≤ 12 kW	0.97 – 0.0032xV EF		
Pipe insulation (d < 1.5", d ≥ 1.5") Diameter ≤ 1.5 inches Diameter > 1.5 inches	0.5 inch 1.0 inch		

1 See *FBC-EC* Table 101.4.1; meet code for component being changed as applicable.

2 Building with greater than 50% WWR shall comply with Section 506.

3 Other types of replacement equipment shall meet the code minimum for that type of equipment in the applicable table of Section 503.2.3 and 504.2.

