

Florida Building Code, Energy Conservation

Residential Building Thermal Envelope Approach

FORM R402-2026

R-Value Computation Method

Florida Climate Zone 2

PROJECT NAME: Example_2026_Florida_Code_Jacksonville
AND ADDRESS: Anyplace
Jacksonville FL 32099
OWNER: Energy Gauge
PERMIT TYPE: New construction
WORST CASE: No

BUILDER: John Q. Hammer
PERMITTING OFFICE:
JURISDICTION NUMBER:
PERMIT NUMBER:
NUMBER OF UNITS: 1
CONDITIONED FLOOR AREA: 2000

Scope: Compliance with Section R402.1.2 of the *Florida Building Code, Energy Conservation*, shall be demonstrated by the use of Form R402 for single- and multiple-family residences of three stories or less in height, additions to existing residential buildings, alterations, renovations, and building systems in existing buildings, as applicable. To comply, a building must meet or exceed all of the energy efficiency requirements and all applicable mandatory requirements summarized on this form. If a building does not comply with this method, or by the UA Alternative method it may still comply under Section R405 or R406 of the *Florida Building Code, Energy Conservation*.

General Instructions:

- Fill in all the applicable spaces of the "INSTALLED" row in the INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT Table with the information requested. All "INSTALLED" values must be equal to or more efficient than the required levels. "AVG" indicates an area weighted average is allowed; "LOWEST" indicates the lowest R-value to be installed must be entered.
- Complete the tables for air infiltration and installed equipment.
- Read the MANDATORY REQUIREMENTS table and check each box to indicate your intent to comply with all applicable items.
- Read, sign and date the "Prepared By" certification statement at the bottom of this form. The owner or owner's agent must also sign and date the form.

INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT¹

REQUIREMENTS	GLAZED				WOOD			FLOOR ⁷	BASEMENT			UNHEATED SLAB	HEATED SLAB	CRAWL SPACE
	VERT. FEN. U-FACTOR ^{2,3}	SKYLIGHT U-FACTOR	FENESTRATION ² SHGC	SKYLIGHT SHGC	CEILING R-VALUE	FRAME WALL R-VALUE ^{4,5}	MASS WALL ^{4,6} R-VALUE EXT/INT		WALL R-VALUE	R-VALUE & DEPTH ⁸	R-VALUE & DEPTH ^{8,9}			
CLIMATE ZONE 1	NR	0.60	0.25	0.28	30	13 or 0+10ci	3/4	13 or 7+5ci or 10ci	0	0	R-5ci edge & R-5 full slab			0
CLIMATE ZONE 2	0.40	0.60	0.25	0.28	38	13 or 0+10ci	4/6	13 or 7+5ci or 10ci	0	0	R-5ci edge & R-5 full slab			0
VALUE	AVG	AVG	AVG	AVG	LOWEST	LOWEST	LOWEST	PASS/FAIL	LOWEST	LOWEST	LOWEST			LOWEST
INSTALLED:	0.400	NA	0.250	NA	38.0	13.0	NA/NA	NA	NA	0.0	NA			NA
Unheated slabs: F1 F-factor=0.73 F-PASS														

R-Value Computation Method: Envelope Requirements - PASS

For SI: 1 foot = 304.8 mm; NR = No requirement.

- R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-value specified in the table.
- For impact rated fenestration complying with Section R301.2.1.2 of the Florida Building Code, Residential or Section 1609.1.2 of the Florida Building Code, Building, the maximum U-factor shall be 0.65 in Climate Zone 2. An area-weighted average of U-factor and SHGC shall be accepted to meet the requirements, and up to 15 square feet of glazed fenestration area are exempted from the U-factor and SHGC requirement based on Section R402.3.1, R402.3.2 and R402.3.3.
- One side-hinged opaque door assembly up to 24 square feet is exempted from this U-factor requirement based on Section R402.3.4.
- R-values are for insulation material only as applied in accordance with manufacturer's installation instructions.
- "13 or 0+10ci" means R-13 cavity insulation alone or R-0 cavity insulation with R-10 continuous insulation.
- Mass walls shall be in accordance with Section R402.2.5. The second R-value applies when more than half the insulation is on the interior of the mass wall.
- "13 or 7+5ci or 10ci" means R-13 cavity insulation alone or R-7 cavity insulation with R-5 continuous insulation or R-10 continuous insulation alone.
- Slab insulation shall be installed in accordance with Section R402.2.10.1.
- "R-5ci" means R-5 continuous insulation (ci).

Air infiltration: Blower door test is required on the building envelope to verify leakage ≤ 7 ACH50; test report must be provided to code official before CO is issued. Florida Building Code, Energy Conservation Section R402.4.1.2 testing exception may apply for additions, alterations, or renovations.

FORM R402-2026 --continued
EQUIPMENT REQUIREMENTS AND INSTALLED VALUES

SYSTEM TYPE	MINIMUM EFFICIENCY LEVEL REQUIRED ¹	INSTALLED EFFICIENCY LEVEL
Air distribution system ¹ : Air handling unit Duct R-Value Air leakage/Duct test Duct testing	AHU not allowed in unconditioned attic Factory Sealed = R-8 (Ducts in unconditioned attics, Diameter > 3 in.) = R-6 (Ducts in unconditioned not attics, Diameter > 3 in.) = R-6 (Ducts in unconditioned attics, Diameter < 3 in.) = R-4.2 (Ducts in unconditioned not attics, Diameter < 3 in.) All ducts are in conditioned space (No minimum) Air handler installed: Total leakage = 4 cfm/100 s.f. Air handler not installed: Total leakage = 3 cfm/100 s.f. Test not required if all ducts and AHU are within the building thermal envelope and for additions or alterations where ducts extended from existing heating and cooling systems through unconditioned space are < 40 linear ft.	Location: Garage Factory Sealed? Yes R-Value (In unc. attic) = 8.0 R-Value (In unc. non attic) = NA R-Value (Small ducts in attic) = NA R-Value (Small ducts in unc) = NA All in conditioned space? No System1: Total leakage = 0.040 Air handler installed? Yes Test report required before CO? Yes
Air conditioning systems: 1. Central Unit	Minimum federal standard required by NAECA: ² SEER2 = 14.3	SEER2 = 15.20 Cap = 19.50
Heating systems: 1. Elec. Heat Pump	Minimum federal standard required by NAECA: ² HSPF2 = 7.50	HSPF2 = 9.00 Cap = 33.00
Water heating system (storage type): Electric ^{3,6} Gas fired ^{4,6} Other (describe):	Minimum federal standard required by NAECA: ² UEF 40 gal.: 0.931; 50 gal.: 0.930; 60 gal.: 2.176 UEF 40 gal.: 0.640; 50 gal.: 0.627; 60 gal.: 0.789	Capacity = Tankless UEF (min) = NA UEF (min) = NA Type = Gas Tankless Effic. (min) = 0.860

R-Value Computation Method: Equipment Efficiency --PASS

- (1) Ducts & AHU installed "substantially leak free" per Section R403.3.2. Test required by either individuals as defined in Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i), Florida Statutes. The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope, and for additions where ducts from an existing heating and cooling system extended to the addition through unconditioned space are less than 40 linear ft.
- (2) Minimum efficiencies are those set by the National Appliance Energy Conservation Act of 1987 for typical residential equipment and are subject to NAECA rules and regulations. For other types of equipment, see Tables C403.2.3 (1)-(16) of the Commercial Provisions of the Florida Building Code, Energy Conservation.
- (3) For electric storage volumes <= 55 gallons, minimum UEF = 0.9349 – (0.0001 * volume). For electric storage volumes > 55 gallons, minimum UEF = 2.2418 – (0.0011 * volume).
- (4) For natural gas storage volumes <= 55 gallons, minimum UEF = 0.692 – (0.0013 * volume). For natural gas storage volumes > 55 gallons, minimum UEF = 0.8072 – (0.0003 * volume).
- (5) For electric tankless, min. UEF = 0.92. For natural gas tankless, min. UEF = 0.81.
- (6) Referenced UEFs shown are for high draw pattern value provided by manufacturer.

(continued)

OTHER REQUIREMENTS			
Component	Section	Summary of Requirement(s)	Check
Air leakage	R402.4	To be caulked, gasketed, weatherstripped or otherwise sealed per Table R402.4.1.1. Recessed lighting IC-rated as having ≤ 2.0 cfm tested to ASTM E 283. Windows and doors: 0.3 cfm/sq.ft. (swinging doors: 0.5 cfm/sf) when tested to NFRC 400 or AAMA/WDMA/CSA 101/I.S. 2/A440. Fireplaces: Tight-fitting flue dampers & outdoor combustion air.	
Programmable thermostat	R403.1.2	A programmable thermostat is required for the primary heating or cooling system.	
Air distribution system	R403.3.2 R403.3.4	Ducts shall be tested as per Section R403.3.2 by either individuals as defined in Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g) or (i), Florida Statutes. Air handling units are not allowed in attics.	
Water heaters	R403.5	Comply with efficiencies in Table C404.2. Hot water pipes insulated to $\geq R-3$ to kitchen outlets, other cases. Circulating systems to have an automatic or accessible manual OFF switch. Heat trap required for vertical pipe risers.	
Cooling/heating equipment	R403.7	Sizing calculation performed & attached. Special occasion cooling or heating capacity requires separate system or variable capacity system.	
Swimming pools & spas	R403.10	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 is 82%. Heat pump pool heaters minimum COP is 4.0	
Lighting equipment	R404.1	All permanently installed luminaires, excluding those in kitchen appliances, shall have an efficacy of at least 45 lumens-per-watt or shall utilize lamps with an efficacy of not less than 65 lumens-per watt.	
I hereby certify that the plans and specifications covered by this form are in compliance with the <i>Florida Building Code, Energy Conservation</i>. PREPARED BY: _____ Date: _____ PREPARED BY SIGNATURE: _____ I hereby certify that this building is in compliance with the <i>Florida Building Code, Energy Conservation</i>. OWNER/AGENT: _____ Date: _____ OWNER/AGENT SIGNATURE: _____		Review of plans and specifications covered by this form indicate compliance with the <i>Florida Building Code, Energy Conservation</i>. Before construction is complete, this building will be inspected for compliance in accordance with Section 553.908, F.S. CODE OFFICIAL: _____ Date: _____ CODE OFFICIAL SIGNATURE: _____	

R407 Additional Energy Efficiency Credits

Section R407.2 — 2026 Florida Building Code, Energy Conservation

Selected R407 compliance measures:

- ☐ R407.2.1.1(1) - Total UA at least 10% below reference (1 credit)
- ☐ R407.2.1.1(2) - Total UA at least 20% below reference (2/4 credits)
- ☐ R407.2.1.2 - Improved fenestration U/SHGC per Table R407.2.1.2 (1 credit)
- ☐ R407.2.1.3 - Roof 3-year-aged SRI ≥ 50 on $\geq 90\%$ area (5 credits)
- ☐ R407.2.2(1) - ≥ 15.2 SEER2 + electric resistance (5 credits, CZ1 only)
- ☐ R407.2.2(2) - Fuel gas furnace $\geq 90\%$ AFUE + air conditioner ≥ 15.2 SEER2 (5 credits)
- ☒ R407.2.2(3) - Air-source heat pump ≥ 15.2 SEER2, ≥ 7.8 HSPF2 (6/4 credits)
- ☐ R407.2.2(4) - Air-source heat pump ≥ 16.5 SEER2, ≥ 8.2 HSPF2 (9 credits)
- ☒ R407.2.3(1/2) - Gas instant UEF ≥ 0.86 or HPWH UEF ≥ 3.0 (6 credits)
- ☐ R407.2.3(3) - HPWH exhausted to conditioned space, UEF ≥ 3.0 (9 credits)
- ☐ R407.2.3(4)(a) - Solar hot water Option 1, SUEF ≥ 3.00 (13 credits)
- ☐ R407.2.3(4)(b) - Solar hot water Option 2, SUEF ≥ 1.80 (10/9 credits)
- ☐ R407.2.3.1 - Compact hot water distribution ≤ 16 oz (2 credits)
- ☐ R407.2.4(1) - Ductless or hydronic in conditioned envelope (3/4 credits)
- ☐ R407.2.4(2) - Equipment inside; $\geq 80\%$ of ductwork inside conditioned space (2/3 credits)
- ☐ R407.2.5 - On-site 1.00 W/ft² or off-site 1.33 W/ft² (17/16 credits)
- ☒ R407.2.6 - Demand responsive thermostat (1 credit)
- ☒ R407.2.7 - Whole-home lighting control (1 credit)

2026 Input Verification

Deck Insulation Type [TEMPROOF]: Roof 1: Air-Permeable

Sizing Option; Staging Type [TEMPCOOL]: Cooling 1: Sizing Option: A; Staging Type: Single

Recirc Pipe Insulation R [TEMPH2O]: Water System 1: N/A

Tested Flow Rate (CFM); Test Method [TEMPMECHVENT]: N/A

Smart Thermostat; Demand Response Capable [TEMPTEMP]: Smart Thermostat: No; Demand Response Capable: Yes

Integrated Energy Factor (IEF) [TempDehumidifier]: N/A

Total Credits: 12

Measures Selected: 4

Required Credits: 10

R407 Status: COMPLIANT

HVACWeightedBasis: AUTO

WaterWeightedBasis: AUTO

HVAC basis disclosure: Automatically evaluated from current project equipment

Water basis disclosure: Automatically evaluated from current project equipment

Selected outcomes: CreditHVAC3, CreditWaterHeat1, CreditDemandResp, CreditLighting

Overall R-Value compliance status: PASS

Minimum 10 credits from 2 or more measures required (15 credits for homes $> 5,000$ sq ft).

Use the R407 Additional Efficiency form to select applicable credit measures.