FORM 402-2010	FLORIDA BUILDING CODE, ENERGY CONSERVATION Residential Building Thermal Envelope Approach	ALL CLIMATE ZONES

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.*

PROJECT NAME: AND ADDRESS·	Merle Thompson	BUILDER:	
		PERMITTING OFFICE:	
OWNER:		PERMIT NO.:	JURISDICTION NO :

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
1. New construction, addition, or existing building	1. New	
2. Single-family detached or multiple-family attached	2. Single	
3. If multiple-family–No. of units covered by this submission	3. 1	
4. Is this a worst case? (yes/no)	4. Y	
5. Conditioned floor area (sq. ft.)	5. 448	
6. Glass type and area:		
a. U factor	6a. .65	
b. SHGC	6b. .30	
c Glass area	6c. 112 sq. ft.	
7. Percentage of glass to floor area	7. 25 %	
8. Floor type, area or perimeter, and insulation:		
a Slab-on-grade (R value)	8a. R= 0 88 lin. ft.	
b. Wood, raised (R value)	8b. R= sq. ft.	
c Wood common (R value)	8c. R= sq. ft.	
d Concrete raised (R value)	8d. R= sq. ft.	
e Concrete, common (R value)	8e. R= sq. ft.	
9. Wall type, area and insulation:		
a Exterior 1 Masonry (Insulation R value)	9a-1. R= sq. ft.	
2 Wood frame (Insulation R value)	9a-2. R= 13 704 sq. ft.	
b. Adjacent 1 Masonry (Insulation R value)	9b-1. R= sq. ft.	
2 Wood frame (Insulation R value)	9b-2. R= sq. ft.	
10. Ceiling type, area and insulation:		
a. Under attic (Insulation R value)	10a. R= 30 sq. ft. 448	
b. Single assembly (Insulation R value)	10b. R= sq. ft.	
11. Air distribution system: Duct insulation, location, Qn		
a Duct location, insulation	11a. R= NA	
b. AHU location	11b.	
c Qn, Test report attached (< 0 03, yes/no)	11c.Test report attached? Yes No	
12. Cooling system:		
a Type	12a. Type: Room	
b Efficiency	12b. SEER/EER: 13	
13. Heating system:		
a Type	13a. Type: Room Unit	
b. Efficiency	13b. HSPF/COP/AFUE: 8.1	
14. HVAC sizing calculation: attached	14. (Yes) No	
15. Hot water system:		
a Type	15a. Type: Elec.	
b Efficiency	15b. EF: .97 40 Gal	

I hereby certify that the plans and specifications covered by the calculation are in compliance with the Florida Energy Code

PREPARED BY _____ DATE 2-27-14

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_____

TABLE 402A

BUILDING COMPONENT	PERFORMANCE CRITERIA[1]	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^2) 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_n = 0 03 by a Class 1 BERS rater	✓ N/A
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	NA
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.	✓