



FLORIDA SOLAR ENERGY CENTER®

*Creating Energy Independence*

# 2014 Florida Energy Code Software Verification Test Report: EnergyGauge® USA version 4.0

FSEC-RR-544-15 part 2  
Prescriptive Results

June 2, 2015

**Submitted to**

Florida Building Commission  
1940 North Monroe Street  
Tallahassee, FL 32399

**Submitted by**

Florida Solar Energy Center

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A Research Institute of the University of Central Florida



## **RESIDENTIAL ENERGY CONSERVATION CODE DOCUMENTATION CHECKLIST**

### **Florida Department of Business and Professional Regulation Residential R-Value Computation Prescriptive Method**

**Applications for compliance with the 2014 Florida Building Code, Energy Conservation via the Residential R-Value computation prescriptive method shall include**

- This Checklist*
- Form R402-2014 which includes the parameters of Table 402.1.1 (two pages)*
- Energy Performance Level (EPL) Display Card (one page)*
- Mandatory requirements (three pages)*

**Required prior to CO for the R-Value computation method:**

- A completed Air Barrier and Insulation Inspection Component Criteria checklist (Table R402.4.1.1 of the 2014 Florida Building Code, Energy Conservation with added checkboxes - one page)*
- A completed Envelope Leakage Test Report(usually one page)*
- A completed Duct Leakage Test Report (usually one page), unless all duct work and air handler units are located entirely within the building thermal envelope.*

# Florida Building Code, Energy Conservation

## Residential Building Thermal Envelope Approach R-Value Computation Method

FORM R402-2014

Climate Zone 2

**Scope:** Compliance with Section R402.1.1 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, renovations, and building systems in existing buildings, as applicable. To comply, a building must meet or exceed all of the energy efficiency requirements on Table R402A and all applicable mandatory requirements summarized in Table R402B of this form. If a building does not comply with this method, or by the UA Alternative method, it may still comply under Section R405 of the Florida Building Code, Energy Conservation.

PROJECT NAME:	TAM Tampa House 1	BUILDER: <b>INCOMPLETE</b>
AND ADDRESS:	12345 North 99th Street	PERMITTING OFFICE: <b>INCOMPLETE</b>
	Tampa FL 33614	JURISDICTION NUMBER: <b>INCOMPLETE</b>
OWNER:	<b>INCOMPLETE</b>	PERMIT NUMBER: <b>INCOMPLETE</b>

**General Instructions:**

1. Fill in all the applicable spaces of the "To Be Installed" column on Table R402A with the information requested. All "To Be Installed" values must be equal to or more efficient than the required levels.
2. Complete page 1 based on the "To Be Installed" column information.
3. Read the requirements of Table R402B and check each box to indicate your intent to comply with all applicable items.
4. 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.

		Check
1. New construction, addition, or existing building	1. <u>New (From Plans)</u>	_____
2. Single-family detached or multiple-family attached	2. <u>Single family</u>	_____
3. If multiple-family, number of units covered by this submission	3. _____	_____
4. Is this a worst case? (yes/no)	4. <u>No</u>	_____
5. Conditioned floor area (sq. ft.)	5. <u>2000</u>	_____
6. Windows type and area:		
a) U-factor:	6a. <u>0.400</u>	_____
b) Solar Heat Gain Coefficient (SHGC):	6b. <u>0.25</u>	_____
c) Area:	6c. <u>300</u>	_____
7. Skylights, type and area:		
a) U-factor:	7a. <u>0.650</u>	_____
b) Solar Heat Gain Coefficient (SHGC):	7b. <u>0.25</u>	_____
c) Skylight area:	7c. <u>10</u>	_____
8. Floor type, area or perimeter, and insulation: (Total exposed area = 2000 sqft)		
a) Slab-on-grade (R-value)	8a. <u>0</u>	_____
b) Wood, raised (R-value)	8b. <u>Not Applicable</u>	_____
c) Wood, common (R-value)	8c. <u>Not Applicable</u>	_____
d) Concrete, raised (R-value)	8d. <u>Not Applicable</u>	_____
e) Concrete, common (R-value)	8e. <u>Not Applicable</u>	_____
9. Wall type, area and insulation: (Total exposed area = 1000 sqft)		
a) Exterior:		
1. Wood frame (Insulation R-value)	9a1. <u>13</u>	_____
2. Masonry (Insulation R-value)	9a2. <u>7.2</u>	_____
b) Adjacent:		
1. Wood frame (Insulation R-value)	9b1. <u>Not Applicable</u>	_____
2. Masonry (Insulation R-value)	9b2. <u>Not Applicable</u>	_____
10. Ceiling type, area and insulation (Total exposed area = 2000 sqft)		
a) Attic (Insulation R-value)	10a. <u>38</u>	_____
b) Single assembly (Insulation R-value)	10b. <u>Not Applicable</u>	_____
11. Air distribution system:		
a) Duct insulation	11a. <u>R6.0</u>	_____
b) AHU location	11b. <u>Main</u>	_____
c) Total Duct Leakage Test report attached	11c. <u>0.04(Substantially leak free)</u>	_____
12. Cooling system:		
a) type:	12a. <u>Central Unit</u>	_____
b) efficiency	12b. <u>14</u>	_____
13. Heating system:		
a) type:	13a. <u>Electric Heat Pump</u>	_____
b) efficiency	13b. <u>HSPF = 8.50</u>	_____
14. HVAC sizing calculation: attached	14. <u>Verify attachment</u>	_____
15. Water heating system:		
a) type	15a. <u>Electric Storage</u>	_____
b) efficiency	15b. <u>0.95</u>	_____

DEMONSTRATION PURPOSES ONLY

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 _____	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.
I hereby certify that this building is in compliance with the <i>Florida Building Code, Energy Conservation</i> . OWNER/AGENT: _____ Date _____	CODE OFFICIAL: _____ Date _____

**TABLE 402A**

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS <sup>1</sup>		INSTALLED VALUES	
	Climate Zone 1	Climate Zone 2	Fens. U-Factor(Ave) = 0.400	PASS
Windows	U-Factor = 0.65 <sup>2</sup> SHGC= 0.25	U-Factor = 0.40 <sup>2</sup> SHGC= 0.25	U-Factor(Avg)=0.4 SHGC(Avg) = 0.25	PASS
Skylights	U-Factor = 0.75 SHGC= 0.30	U-Factor = 0.65 SHGC= 0.30	U-Factor(Avg) = 0.65 SHGC(Avg) = 0.25	PASS
Doors: Exterior door	U-Factor = 0.65 <sup>3</sup>	U-Factor = 0.40 <sup>3</sup>	U-Factors(Max) = 0.4	PASS
Floors: Over unconditioned spaces <sup>4</sup> Common	R-13 R-11	R-13 R-11	Not Applicable Not Applicable	
Walls: Ext. and Adj. Frame	R-13	R-13	R-Value(Min) = 13	PASS
Mass(Insulation on wall interior):	R-4	R-6	R-Values = 7.2	PASS
Mass(Insulation on wall exterior):	R-3	R-4	Not Applicable	
Common(multifamily):	Fr:R-11, Mass:R-6	Fr:R-11, Mass:R-6	Not Applicable	
Ceilings: Exposed Common	R-30 R-11	R-38 R-11	R-Value = 38 Not Applicable	PASS
Air infiltration:	Blower door test is required on the building envelope to verify leakage ≤ 5 ACH50; test report provided to code official.		Total leakage(ACH50) = 5.000 Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	PASS
Air distribution system <sup>5</sup> : Air handling unit	Not allowed in attic Sealed		Location: Main Sealed	PASS PASS
Duct R-Value	R-value ≥ R-8 (supply in unconditioned attics) or ≥R-6 (all other unconditioned duct locations).		R-Value(Supply in unc. attic) = 8.0 R-Value(Others in unc. space) = 8.0	PASS PASS
Air Leakage <sup>5</sup> : Duct test	Air handler installed: Total leakage ≤ 4 cfm/100 s.f. Air handler Not installed: Total leakage ≤ 3 cfm/100 s.f.		Substantially Leak Free Test report required? YES	
Ducts in conditioned space	Test not required if all ducts and AHU are in conditioned space.		Location: Unconditioned	
Air conditioning systems: Central system ≤ 65,000 Btu/h	Minimum federal standard required by NAECA <sup>6</sup> SEER=14.0 EER [from Table C403.2.3(3)]		SEER(Min)=14	PASS
PTAC Other:				
Heating systems: Heating Pump ≤ 65,000 Btu/h	Minimum federal standard required by NAECA <sup>6</sup> HSPF= 8.2		HSPF(Min) = 8.5	PASS
Gas Furnace, non-weatherized	AFUE 78% (AFUE 80% after Nov. 2015)		Not Applicable	
Oil Furnace, non-weatherized	AFUE 83%		Not Applicable	
Other:				
Water heating system (storage type): Electric: <sup>7</sup>	Minimum federal standard required by NAECA <sup>6</sup> 50 gallons: EF=0.945		50 gallons: EF=0.95	PASS
Gas fired: <sup>8</sup>	40 gallons: EF=0.62, 50 gallons: EF=0.60		Not Applicable	
Other (describe):				

User entry meets requirements of R-Value Calculation Method.

NR = No requirement

- (1) Each component present in the As Proposed home must meet or exceed each of the applicable criteria in order to comply with this code using this method.
- (2) 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 minimum U-factor shall be 0.75 in Climate Zone 1 and 0.65 in Climate Zone 2. An area-weighted average of U-factor and SHGC shall be accepted to meet the requirements, or 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 R403.3.3.
- (3) One side-hinged opaque door assembly up to 24 square feet is exempted from this U-factor requirement.
- (4) 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 percent of the insulation required for the "exterior of wall" is installed exterior of, or integral to, the wall.
- (5) Ducts & AHU installed "substantially leak free" per Section R403.2.2. Test required by an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes. The total leakage test is not required for ducts and air handlers located entirely within the thermal envelope.
- (6) 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 (1-11) of the Commercial Provisions of the Florida Building Code, Energy Conservation.
- (7) For electric storage volumes ≤ 55, min. EF = 0.960 – (0.0003 \* volume). For electric storage volumes > 55, min. EF = 2.057 – (0.00113 \* volume).
- (8) For natural gas storage volumes ≤ 55, min. EF = 0.675 – (0.0015 \* volume). For natural gas storage volumes > 55, min. EF = 0.8012 – (0.00078 \* volume).
- (9) For electric tankless, min. EF = 0.93. For natural gas tankless, min. EF = 0.82

TABLE 402B MANDATORY 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 $\leq 2.0$ 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/DSA 101/I.S. 2/A440. Fireplaces: Tight-fitting flue dampers & outdoor combustion air.	
Programmable thermostat	R403.1.2	Where forced-air furnace is primary system, programmable thermostat is required.	
Air distribution system	R403.2.2 R403.2.4	Ducts shall be tested to Section 803 of the RESNET standards by an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes. Air handling units are not allowed in attics.	
Water heaters	R403.4	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	R403.6	Sizing calculation performed & attached. Special occasion cooling or heating capacity requires separate system or variable capacity system.	
Swimming pools & spas	R403.9	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 is 82%. Heat pump pool heaters minimum COP is 4.0	
Lighting equipment	R404.1	At least 75% of permanently installed lighting fixtures shall be high-efficacy lamps.	

# ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

**ESTIMATED ENERGY PERFORMANCE INDEX\* = 104**

The lower the EnergyPerformance Index, the more efficient the home.

12345 North 99th Street, Tampa, FL, 33614

<p>1. New construction or existing: New (From Plans)</p> <p>2. Single family or multiple family: Single-family</p> <p>3. Number of units, if multiple family: 1</p> <p>4. Number of Bedrooms: 3</p> <p>5. Is this a worst case?: No</p> <p>6. Conditioned floor area (ft²): 2000</p> <p>7. Windows**</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">a. U-Factor:</td> <td style="width: 35%;">Dbl, U=0.40</td> <td style="width: 15%;">Area</td> <td style="width: 35%;">300.00 ft²</td> </tr> <tr> <td></td> <td>SHGC=0.25</td> <td></td> <td></td> </tr> <tr> <td>b. U-Factor:</td> <td>Dbl, U=0.65</td> <td>Area</td> <td>10.00 ft²</td> </tr> <tr> <td></td> <td>SHGC=0.25</td> <td></td> <td></td> </tr> <tr> <td>c. U-Factor:</td> <td>N/A</td> <td>Area</td> <td>ft²</td> </tr> <tr> <td></td> <td>SHGC:</td> <td></td> <td></td> </tr> <tr> <td>d. U-Factor:</td> <td>N/A</td> <td>Area</td> <td>ft²</td> </tr> <tr> <td></td> <td>SHGC:</td> <td></td> <td></td> </tr> </table> <p>Area Weighted Average Overhang Depth: 0.000 ft.</p> <p>Area Weighted Average SHGC: 0.250</p> <p>8. Floor Types</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">a. Slab-On-Grade Edge Insulation</td> <td style="width: 15%;">Insulation</td> <td style="width: 15%;">Area</td> <td style="width: 55%;">R=0.0 2000.00 ft²</td> </tr> <tr> <td>b. N/A</td> <td>R=</td> <td>Area</td> <td>ft²</td> </tr> <tr> <td>c. N/A</td> <td>R=</td> <td>Area</td> <td>ft²</td> </tr> </table>	a. U-Factor:	Dbl, U=0.40	Area	300.00 ft²		SHGC=0.25			b. U-Factor:	Dbl, U=0.65	Area	10.00 ft²		SHGC=0.25			c. U-Factor:	N/A	Area	ft²		SHGC:			d. U-Factor:	N/A	Area	ft²		SHGC:			a. Slab-On-Grade Edge Insulation	Insulation	Area	R=0.0 2000.00 ft²	b. N/A	R=	Area	ft²	c. N/A	R=	Area	ft²	<p>9. Wall Types</p> <p>a. Concrete Block - Int Insul, Exterior</p> <p>b. Frame - Wood, Exterior</p> <p>c. N/A</p> <p>d. N/A</p> <p>10. Ceiling Types</p> <p>a. Under Attic (Vented)</p> <p>b. N/A</p> <p>c. N/A</p> <p>11. Ducts</p> <p>a. Sup: Attic, Ret: Main, AH: Main</p> <p>12. Cooling systems</p> <p>a. Central Unit</p> <p>13. Heating systems</p> <p>a. Electric Heat Pump</p> <p>14. Hot water systems</p> <p>a. Electric</p> <p>b. Conservation features</p> <p>None</p> <p>15. Credits</p> <p>None</p>	<table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">Insulation</td> <td style="width: 15%;">Area</td> <td style="width: 70%;"></td> </tr> <tr> <td>R=6.0</td> <td>1700.00 ft²</td> <td></td> </tr> <tr> <td>R=13.0</td> <td>100.00 ft²</td> <td></td> </tr> <tr> <td>R=</td> <td>ft²</td> <td></td> </tr> <tr> <td>R=</td> <td>ft²</td> <td></td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">Insulation</td> <td style="width: 15%;">Area</td> <td style="width: 70%;"></td> </tr> <tr> <td>R=38.0</td> <td>2000.00 ft²</td> <td></td> </tr> <tr> <td>R=</td> <td>ft²</td> <td></td> </tr> <tr> <td>R=</td> <td>ft²</td> <td></td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%;">R</td> <td style="width: 15%;">ft²</td> <td style="width: 55%;"></td> </tr> <tr> <td></td> <td>8</td> <td>400</td> <td></td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%;">kBtu/hr</td> <td style="width: 15%;">Efficiency</td> <td style="width: 55%;"></td> </tr> <tr> <td></td> <td>21.0</td> <td>SEER:14.00</td> <td></td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%;">kBtu/hr</td> <td style="width: 15%;">Efficiency</td> <td style="width: 55%;"></td> </tr> <tr> <td></td> <td>21.0</td> <td>HSPF:8.50</td> <td></td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%;">Cap: 50 gallons</td> <td style="width: 70%;"></td> </tr> <tr> <td></td> <td>EF: 0.95</td> <td></td> </tr> </table>	Insulation	Area		R=6.0	1700.00 ft²		R=13.0	100.00 ft²		R=	ft²		R=	ft²		Insulation	Area		R=38.0	2000.00 ft²		R=	ft²		R=	ft²			R	ft²			8	400			kBtu/hr	Efficiency			21.0	SEER:14.00			kBtu/hr	Efficiency			21.0	HSPF:8.50			Cap: 50 gallons			EF: 0.95	
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FOR DEMONSTRATION PURPOSES ONLY

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction 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: \_\_\_\_\_



\*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

\*\*Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

## Florida Department of Business and Professional Regulations Residential Whole Building Performance and Prescriptive Methods

ADDRESS: 12345 North 99th Street  
Tampa, FL, 33614

Permit Number:

### MANDATORY REQUIREMENTS See individual code sections for full details.

- 401.3 Energy Performance Level (EPL) display card (Mandatory).** The building official shall require that an energy performance level (EPL) display card be completed and certified by the builder to be accurate and correct before final approval of the building for occupancy. Florida law [Section 553.9085, Florida Statutes] requires the EPL display card to be included as an addendum to each sales contract for both presold and nonpresold residential buildings. The EPL display card contains information indicating the energy performance level and efficiencies of components installed in a dwelling unit. The building official shall verify that the EPL display card completed and signed by the builder accurately reflects the plans and specifications submitted to demonstrate compliance for the building. A copy of the EPL display card can be found in Appendix C.
- R402.4 Air leakage (Mandatory).** The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.1 through R402.4.4.
  - R402.4.1 Building thermal envelope.** The building thermal envelope shall comply with Sections R402.4.1.1 and R402.4.1.2. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.
    - R402.4.1.1 Installation.** The components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table 402.4.1.1, as applicable to the method of construction. Where required by the code official, an approved third party shall inspect all components and verify compliance.
    - R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 5 air changes per hour in Climate Zones 1 and 2, and 3 air changes per hour in Climate Zones 3 through 8. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.
 

During testing:

      1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures;
      2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures;
      3. Interior doors, if installed at the time of the test, shall be open;
      4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
      5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and
      6. Supply and return registers, if installed at the time of the test, shall be fully open.
  - R402.4.2 Fireplaces.** New wood-burning fireplaces shall have tight-fitting flue dampers and outdoor combustion air.
  - R402.4.3 Fenestration air leakage** Windows, skylights and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m<sup>2</sup>), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m<sup>2</sup>), when tested according to NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer.
 

**Exception:** Site-built windows, skylights and doors.
  - R402.4.4 Recessed lighting.** Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and labeled as having an air leakage rate not more than 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E 283 at a 1.57 psf (75 Pa) pressure differential. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.
- R403.1.1 Thermostat provision (Mandatory).** At least one thermostat shall be provided for each separate heating and cooling system.
- R403.1.3 Heat pump supplementary heat (Mandatory).** Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load.
- R403.2.2 Sealing (Mandatory)** All ducts, air handlers, and filter boxes and building cavities that form the primary air containment passageways for air distribution systems shall be considered ducts and plenum chambers, shall be constructed and sealed in accordance with Section C403.2.7.2 of the Commercial Provisions of this code and shall be shown to meet duct tightness criteria by post-construction or rough-in testing below.

Duct tightness shall be verified by testing to Section 803 of the RESNET Standards by either an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes, to be "substantially leak free" by either of the following:

1. Post-construction test: Total leakage shall be less than or equal to 4 cfm (113 L/min) per 100 square feet (9.29 m<sup>2</sup>) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.
2. Rough-in test: Total leakage shall be less than or equal to 4 cfm (113 L/min) per 100 square feet (9.29 m<sup>2</sup>) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3 cfm (85 L/min) per 100 square feet (9.29 m<sup>2</sup>) of conditioned floor area.

Exceptions:

1. The total leakage test is not required for ducts and air handlers located entirely within the building envelope.
2. Duct testing is not mandatory for buildings complying by Section R405 of this code.



**MANDATORY REQUIREMENTS - (Continued)**

- **R403.2.2.1 Sealed air handler.** Air handlers shall have a manufacturer's designation for an air leakage of no more than 2 percent of the design air flow rate when tested in accordance with ASHRAE 193.
- **R403.2.3 Building Cavities (Mandatory).** Building framing cavities shall not be used as ducts or plenums.
- **R403.3 Mechanical system piping insulation (Mandatory).** Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be insulated to a minimum of R-3.,
  - **R403.3.1 Protection of piping insulation.** Piping insulation exposed to weather shall be protected from damage, including that caused by sunlight, moisture, equipment maintenance, and wind, and shall provide shielding from solar radiation that can cause degradation of the material. Adhesive tape shall not be permitted.
- **R403.4.1 Circulating hot water systems (Mandatory).** Circulating hot water systems shall be provided with an automatic or readily accessible manual switch that can turn off the hot-water circulating pump when the system is not in use.
- **R403.4.3 Heat traps (Mandatory).** Storage water heaters not equipped with integral heat traps and having vertical pipe risers shall have heat traps installed on both the inlets and outlets. External heat traps shall consist of either a commercially available heat trap or a downward and upward bend of at least 3 ½ inches (89 mm) in the hot water distribution line and cold water line located as close as possible to the storage tank.
- **R403.4.4 Water heater efficiencies (Mandatory).** Water heater efficiencies
  - **R403.4.4.1 Storage water heater temperature controls**
    - **R403.4.4.1.1 Automatic controls.** Service water heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use. The minimum temperature setting range shall be from 100°F to 140°F (38°C to 60°C).
    - **R403.4.4.1.2 Shut down.** A separate switch or a clearly marked circuit breaker shall be provided to permit the power supplied to electric service systems to be turned off. A separate valve shall be provided to permit the energy supplied to the main burner(s) of combustion types of service water heating systems to be turned off.
  - **R403.4.4.2 Water heating equipment.** Water heating equipment installed in residential units shall meet the minimum efficiencies of Table C404.2 in Chapter 4 of the Florida Building Code, Energy Conservation, Commercial Provisions, for the type of equipment installed. Equipment used to provide heating functions as part of a combination system shall satisfy all stated requirements for the appropriate water heating category. Solar water heaters shall meet the criteria Section R403.4.4.2.1.
    - **R403.4.4.2.1 Solar water heating systems.** Solar systems for domestic hot water production are rated by the annual solar energy factor of the system. The solar energy factor of a system shall be determined from the Florida Solar Energy Center Directory of Certified Solar Systems. Solar collectors shall be tested in accordance with ISO Standard 9806, Test Methods for Solar Collectors, and SRCC Standard TM-1, Solar Domestic Hot Water System and Component Test Protocol, Collectors in installed solar water heating systems should meet the following criteria:
      1. Be installed with a tilt angle between 10 degrees and 40 degrees of the horizontal; and
      2. Be installed at an orientation within 45 degrees of true south.
- **R403.5 Mechanical ventilation (Mandatory).** The building shall be provided with ventilation that meets the requirements of the Florida Building Code, Residential or Florida Building Code, Mechanical, as applicable, or with other approved means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.
  - **R403.5.1 Whole-house mechanical ventilation system fan efficacy.** Mechanical ventilation system fans shall meet the efficacy requirements of Table R403.5.1.
 

**Exception:** Where mechanical ventilation fans are integral to tested and listed HVAC equipment, they shall be powered by an electronically commutated motor.
  - **R403.5.2 Ventilation air.** Residential buildings designed to be operated at a positive indoor pressure or for mechanical ventilation shall meet the following criteria:
    1. The design air change per hour minimums for residential buildings in ASHRAE 62, Ventilation for Acceptable Indoor Air Quality, shall be the maximum rates allowed for residential applications.
    2. No ventilation or air-conditioned system make air shall be provided to conditioned space from attics, crawlspaces, attached closed garages or outdoor spaces adjacent to swimming pools or spas.
    3. If ventilation air is drawn from enclosed spaces(s), then the walls of the space(s) from which air is drawn shall be insulated to a minimum of R-11 and the ceiling shall be insulated to a minimum of R-19, space permitting, or R-10 otherwise.
- **R403.6 Heating and cooling equipment (Mandatory).** The following sections are mandatory for cooling and heating equipment.
  - **R403.6.1 Equipment sizing.** Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on the equipment loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies, based on building loads for the directional orientation of the building. The manufacturer and model number of the outdoor and indoor units (if split system) shall be submitted along with the sensible and total cooling capacities at the design conditions described in Section R302.1. This code does not allow designer safety factors, provisions for future expansion or other factors which affect equipment sizing. System sizing calculations shall not include loads created by local intermittent mechanical ventilation such as standard kitchen and bathroom exhaust systems.
    - **R403.6.1.1 Cooling equipment capacity.** Cooling only equipment shall be selected so that its total capacity is not less than the calculated total load, but not more than 1.15 times greater than the total load calculated according to the procedure selected in Section 403.6, or the closest available size provided by the manufacturer's product lines. The corresponding latent capacity of the equipment shall not be less than the calculated latent load.

**MANDATORY REQUIREMENTS - (Continued)**

- **R403.6.1.1 Cooling equipment capacity. (continued)** The published value for AHRI total capacity is a nominal, rating-test value and shall not be used for equipment sizing. Manufacturer's expanded performance data shall be used to select cooling-only equipment. This selection shall be used to select cooling-only equipment. This selection shall be based on the outdoor design dry bulb temperature for the load calculation (or entering water temperature for water-source equipment), the blower cfm provided by the expanded performance data, the design value for entering wet bulb temperature and the design value for entering dry bulb temperature.

Design values for entering wet bulb and dry bulb temperature shall be for the indoor dry bulb and relative humidity used for the load calculation and shall be adjusted for return side gains if the return duct(s) is installed in an unconditioned space.

Exceptions:

1. Attached single- and multi-family residential equipment sizing may be selected so that its cooling capacity is less than the calculated total sensible load but not less than 80 percent of that load.
2. When signed and sealed by a Florida-registered engineer, in attached single- and multi-family units, the capacity of equipment may be sized in accordance with good design practice.

- **R403.6.1.2 Heating equipment capacity**

- **R403.6.1.2.1 Heat pumps.** Heat pumps sizing shall be based on the cooling requirements as calculated according to Section R403.6.1.1 and the heat pump total cooling capacity shall not be more than 1.15 times greater than the design cooling load.
- **R403.6.1.2.2 Electric resistance furnaces.** Electric resistance furnaces shall be sized within 4 kW of the design requirements calculated according to the procedure selected in Section R403.6.1.
- **R403.6.1.2.3 Fossil fuel heating equipment.** The capacity of fossil fuel heating equipment with natural draft atmospheric burners shall not be less than the design load calculated in accordance with Section R403.6.1.

- **R403.6.1.3 Extra capacity required for special occasions.** Residences requiring excess cooling or heating equipment capacity on an intermittent basis, such as anticipated additional loads caused by major entertainment events, shall have equipment sized or controlled to prevent continuous space cooling or heating within that space by one or more of the following options:

1. A separate cooling or heating system is utilized to provide cooling or heating to the major entertainment areas.
2. A variable capacity system sized for optimum performance during base load periods is utilized.

- **R403.7 Systems serving multiple dwelling units (Mandatory).** Systems serving multiple dwelling units shall comply with Sections C403 and C404 of the Commercial Provisions in lieu of Section R403.

- **R403.8 Snow melt system controls (Mandatory).** Snow and ice-melting systems, supplied through energy service to the building, shall include automatic controls capable of shutting off the system when the pavement temperature is above 55°F, and no precipitation is falling and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40°F.

- **R403.9 Swimming pools, inground spas and portable spas (Mandatory).** The energy requirements for residential pools and inground spas shall be as specified in Sections R403.9.1 through R403.9.3 and in accordance with ANSI/APSP-15. The energy requirements for portable spas shall be in accordance with ANSI/APSP-14.

- **R403.9.1 Pool and spa heaters.** All pool heaters shall be equipped with a readily accessible on-off switch that is mounted outside the heater to allow shutting off the heater without adjusting the thermostat setting.
  - **R403.9.1.1 Gas and oil-fired pool and spa heaters.** All gas- and oil-fired pool and space heaters shall have a minimum thermal efficiency of 82 percent for heaters manufactured on or after April 16, 2013 when tested in accordance with ANSI Z 21.56. Pool heaters fired by natural gas or LP gas shall not have continuously burning pilot lights.
  - **R403.9.1.2 Heat pump pool heaters.** Heat pump pool heaters shall have a minimum COP of 4.0 when tested in accordance with AHRI 1160, Table 2, Standard Rating Conditions-Low Air Temperature. A test report from an independent laboratory is required to verify procedure compliance. Geothermal swimming pool heat pumps are not required to meet this standard.
- **R403.9.2 Time switches.** Time switches or other control method that can automatically turn off and on heaters and pumps according to a preset schedule shall be installed on all heaters and pumps. Heaters, pumps and motors that have built in timers shall be deemed in compliance with this equipment.

**Exceptions:**

1. Where public health standards require 24-hour pump operations.
2. Where pumps are required to operate solar- and waste-heat-recovery pool heating systems.
3. Where pumps are powered exclusively from on-site renewable generation.

- **R403.9.3 Covers.** Heated swimming pools and inground permanently installed spas shall be equipped with a vapor-retardant cover on or at the water surface or a liquid cover or other means proven to reduce heat loss.

- **Exception:** Outdoor pools deriving over 70 percent of the energy for heating from site-recovered energy, such as a heat pump or solar energy source computed over an operating season.

- **RR404.1 Lighting equipment (Mandatory).** A minimum of 75 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps or a minimum of 75 percent of permanently installed lighting fixtures shall contain only high efficacy lamps.

**Exception:** Low-voltage lighting shall not be required to utilize high-efficacy lamps.

- **R404.1.1 Lighting equipment (Mandatory).** Fuel gas lighting systems shall not have continuously burning pilot lights

- **R405.2 Performance ONLY.** All ducts not entirely inside the building thermal envelope shall be insulated to a minimum of R-6.

- **R405.2.1 Performance ONLY.** Ceilings shall have minimum insulation of R-19. Where single assembly of the exposed deck and beam type or concrete deck roofs do not have sufficient space, R-10 is allowed.

**TABLE 402.4.1.1****AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA**

Project Name:	TAM Tampa House 1	Builder Name:	
Street:	12345 North 99th Street	Permit Office:	
City, State, Zip:	Tampa , FL , 33614	Permit Number:	
Owner:		Jurisdiction:	
Design Location:	FL, Tampa		
<b>COMPONENT</b>	<b>CRITERIA</b>	<b>CHECK</b>	
Air barrier and thermal barrier	A continuous air barrier shall be installed in the building envelope. Exterior thermal envelope contains a continuous barrier. Breaks or joints in the air barrier shall be sealed. Air-permeable insulation shall not be used as a sealing material.		
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.		
Walls	Corners and headers shall be insulated and the junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top or exterior walls shall be sealed. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier. Knee walls shall be sealed.		
Windows, skylights and doors	The space between window/door jambs and framing and skylights and framing shall be sealed.		
Rim joists	Rim joists are insulated and include an air barrier.		
Floors (including above-garage and cantilevered floors)	Insulation shall be installed to maintain permanent contact with underside of subfloor decking. The air barrier shall be installed at any exposed edge of insulation.		
Crawl space walls	Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls. Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.		
Shafts, penetrations	Duct shafts, utility penetrations, and flue shaft openings to exterior or unconditioned space shall be sealed.		
Narrow cavities	Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity spaces.		
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.		
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be air tight, IC rated, and sealed to the drywall.		
Plumbing and wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.		
Shower/tub on exterior wall	Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs.		
Electrical/phone box on	The air barrier shall be installed behind electrical or communication boxes or air sealed boxes shall be installed.		
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the sub-floor or drywall.		
Fireplace	An air barrier shall be installed on fireplace walls. Fireplaces shall have gasketed doors		

# FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

## Envelope Leakage Test Report Prescriptive and Performance Method

Project Name: TAM Tampa House 1  
 Street: 12345 North 99th Street  
 City, State, Zip: Tampa , FL , 33614  
 Design Location: FL, Tampa

Builder Name:  
 Permit Office:  
 Permit Number:  
 Jurisdiction:

### Envelope Leakage Test Results

Regression Data:

C: \_\_\_\_\_ n: \_\_\_\_\_ R: \_\_\_\_\_

Single or Multi Point Test Data

	HOUSE PRESSURE	FLOW:
1	Pa	cfm
2	Pa	cfm
3	Pa	cfm
4	Pa	cfm
5	Pa	cfm
6	Pa	cfm

### Leakage Characteristics

CFM(50): \_\_\_\_\_

ELA: \_\_\_\_\_

EqLA: \_\_\_\_\_

ACH: \_\_\_\_\_

ACH(50): \_\_\_\_\_

SLA: \_\_\_\_\_

**R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 5 air changes per hour in Climate Zones 1 and 2, 3 air changes per hour in Climate Zones 3 through 8. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures;
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures;
3. Interior doors, if installed at the time of the test, shall be open;
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and
6. Supply and return registers, if installed at the time of the test, shall be fully open.

I hereby certify that the above envelope leakage performance results demonstrate compliance with Florida Energy Code requirements in accordance with Section R402.4.1.2.

**SIGNATURE:** \_\_\_\_\_

**PRINTED NAME:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the third party conducting the test and provided to the code official.



**BUILDING OFFICIAL:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

# FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

## Duct Leakage Test Report Prescriptive Method

Project Name: TAM Tampa House 1 Street: 12345 North 99th Street City, State, Zip: Tampa , FL , 33614 Design Location: FL, Tampa	Builder Name: Permit Office: Permit Number: Jurisdiction:
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### Duct Leakage Test Results

CFM25 Duct Leakage Test Values		
Line	System	Total Duct Leakage
1	System 1	_____ cfm25(Total)
2	System 2	_____ cfm25(Total)
3	System 3	_____ cfm25(Total)
4	System 4	_____ cfm25(Total)
5	<b>Total House Duct System Leakage</b>	Sum lines 1-4 _____ Divide by _____ (Total Conditioned Floor Area) = _____ <b>(Q<sub>n</sub>, Total)</b> Air Handler Installed at time of test? (circle one)    Yes    No To qualify as "substantially leak free" Qn Total must be less than or equal to 0.04 if air handler unit is installed. If air handler unit is not installed Qn Total must be less than or equal to 0.03.

I hereby certify that the above duct testing performance results demonstrate compliance with the Florida Energy Code requirements in accordance with Section R403.2.2.

**SIGNATURE:** \_\_\_\_\_

**PRINTED NAME:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

Duct tightness shall be verified by testing to Section 803 of the RESNET Standards by either an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes, to be "substantially leak free."



**BUILDING OFFICIAL:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

# Florida Building Code, Energy Conservation

## Residential Building Thermal Envelope Approach R-Value Computation Method

FORM R402-2014

Climate Zone 2

**Scope:** Compliance with Section R402.1.1 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, renovations, and building systems in existing buildings, as applicable. To comply, a building must meet or exceed all of the energy efficiency requirements on Table R402A and all applicable mandatory requirements summarized in Table R402B of this form. If a building does not comply with this method, or by the UA Alternative method, it may still comply under Section R405 of the Florida Building Code, Energy Conservation.

PROJECT NAME:	TAM Tampa House 2	BUILDER: <b>INCOMPLETE</b>
AND ADDRESS:	12345 North 99th Street	PERMITTING OFFICE: <b>INCOMPLETE</b>
	Tampa FL 33614	JURISDICTION NUMBER: <b>INCOMPLETE</b>
OWNER:	<b>INCOMPLETE</b>	PERMIT NUMBER: <b>INCOMPLETE</b>

**General Instructions:**

1. Fill in all the applicable spaces of the "To Be Installed" column on Table R402A with the information requested. All "To Be Installed" values must be equal to or more efficient than the required levels.
2. Complete page 1 based on the "To Be Installed" column information.
3. Read the requirements of Table R402B and check each box to indicate your intent to comply with all applicable items.
4. 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.

	Check
1. New construction, addition, or existing building	1. <u>New (From Plans)</u> _____
2. Single-family detached or multiple-family attached	2. <u>Single family</u> _____
3. If multiple-family, number of units covered by this submission	3. _____
4. Is this a worst case? (yes/no)	4. <u>No</u> _____
5. Conditioned floor area (sq. ft.)	5. <u>2000</u> _____
6. Windows type and area:	
a) U-factor:	6a. <u>0.378 (15sqft exempt*)</u> _____
b) Solar Heat Gain Coefficient (SHGC):	6b. <u>0.246 (15sqft exempt*)</u> _____
c) Area:	6c. <u>300</u> _____
7. Skylights, type and area:	
a) U-factor:	7a. <u>0.650</u> _____
b) Solar Heat Gain Coefficient (SHGC):	7b. <u>0.25</u> _____
c) Skylight area:	7c. <u>10</u> _____
8. Floor type, area or perimeter, and insulation: (Total exposed area = 2000 sqft)	
a) Slab-on-grade (R-value)	8a. <u>0</u> _____
b) Wood, raised (R-value)	8b. <u>Not Applicable</u> _____
c) Wood, common (R-value)	8c. <u>Not Applicable</u> _____
d) Concrete, raised (R-value)	8d. <u>Not Applicable</u> _____
e) Concrete, common (R-value)	8e. <u>Not Applicable</u> _____
9. Wall type, area and insulation: (Total exposed area = 1000 sqft)	
a) Exterior:	
1. Wood frame (Insulation R-value)	9a1. <u>13</u> _____
2. Masonry (Insulation R-value)	9a2. <u>7.2</u> _____
b) Adjacent:	
1. Wood frame (Insulation R-value)	9b1. <u>Not Applicable</u> _____
2. Masonry (Insulation R-value)	9b2. <u>Not Applicable</u> _____
10. Ceiling type, area and insulation (Total exposed area = 2000 sqft)	
a) Attic (Insulation R-value)	10a. <u>38</u> _____
b) Single assembly (Insulation R-value)	10b. <u>Not Applicable</u> _____
11. Air distribution system:	
a) Duct insulation	11a. <u>R6.0</u> _____
b) AHU location	11b. <u>Main</u> _____
c) Total Duct Leakage Test report attached	11c. <u>0.04(Substantially leak free)</u> _____
12. Cooling system:	
a) type:	12a. <u>Central Unit</u> _____
b) efficiency	12b. <u>14</u> _____
13. Heating system:	
a) type:	13a. <u>Electric Heat Pump</u> _____
b) efficiency	13b. <u>HSPF = 8.50</u> _____
14. HVAC sizing calculation: attached	14. <u>Verify attachment</u> _____
15. Water heating system:	
a) type	15a. <u>Electric Storage</u> _____
b) efficiency	15b. <u>0.95</u> _____

\*Passes after inspection see Florida Code 402.3.3

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 _____ I hereby certify that this building is in compliance with the <i>Florida Building Code, Energy Conservation</i> . OWNER/AGENT: _____ Date _____	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 _____
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**TABLE 402A**

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS <sup>1</sup>		INSTALLED VALUES	
	Climate Zone 1	Climate Zone 2	Fens. U-Factor(Ave) = 0.387	PASS
Windows	U-Factor = 0.65 <sup>2</sup> SHGC= 0.25	U-Factor = 0.40 <sup>2</sup> SHGC= 0.25	U-Factor(Avg)=0.378 (15sqft exempt*) SHGC(Avg)=0.246 (15sqft exempt*)	PASS
Skylights	U-Factor = 0.75 SHGC= 0.30	U-Factor = 0.65 SHGC= 0.30	U-Factor(Avg) = 0.65 SHGC(Avg) = 0.25	PASS
Doors: Exterior door	U-Factor = 0.65 <sup>3</sup>	U-Factor = 0.40 <sup>3</sup>	U-Factors(Max)=0.8 (24 sq.ft. exempt**)	PASS
Floors: Over unconditioned spaces <sup>4</sup> Common	R-13 R-11	R-13 R-11	Not Applicable Not Applicable	
Walls: Ext. and Adj. Frame Mass(Insulation on wall interior): Mass(Insulation on wall exterior): Common(multifamily):	R-13 R-4 R-3 Fr:R-11, Mass:R-6	R-13 R-6 R-4 Fr:R-11, Mass:R-6	R-Value(Min) = 13 R-Values = 7.2 Not Applicable Not Applicable	PASS PASS
Ceilings: Exposed Common	R-30 R-11	R-38 R-11	R-Value = 38 Not Applicable	PASS
Air infiltration:	Blower door test is required on the building envelope to verify leakage ≤ 5 ACH50; test report provided to code official.		Total leakage(ACH50) = 5.000 Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	PASS
Air distribution system <sup>5</sup> : Air handling unit  Duct R-Value  Air Leakage <sup>5</sup> : Duct test  Ducts in conditioned space	Not allowed in attic Sealed R-value ≥ R-8 (supply in unconditioned attics) or ≥R-6 (all other unconditioned duct locations).  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 in conditioned space.		Location: Main Sealed R-Value(Supply in unc. attic) = 8.0 R-Value(Others in unc. space) = 8.0  Substantially Leak Free Test report required? YES Location: Unconditioned	PASS PASS PASS PASS
Air conditioning systems: Central system ≤ 65,000 Btu/h  PTAC Other:	Minimum federal standard required by NAECA <sup>6</sup> SEER=14.0 EER [from Table C403.2.3(3)]		SEER(Min)=14	PASS
Heating systems: Heating Pump ≤ 65,000 Btu/h Gas Furnace, non-weatherized Oil Furnace, non-weatherized Other:	Minimum federal standard required by NAECA <sup>6</sup> HSPF= 8.2 AFUE 78% (AFUE 80% after Nov. 2015) AFUE 83%		HSPF(Min) = 8.5 Not Applicable Not Applicable	PASS
Water heating system (storage type): Electric: <sup>7</sup> Gas fired: <sup>8</sup> Other (describe):	Minimum federal standard required by NAECA <sup>6</sup> 50 gallons: EF=0.945 40 gallons: EF=0.62, 50 gallons: EF=0.60		50 gallons: EF=0.95 Not Applicable	PASS

User entry meets requirements of R-Value Calculation Method.

NR = No requirement

- (1) Each component present in the As Proposed home must meet or exceed each of the applicable criteria in order to comply with this code using this method.
- (2) 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 minimum U-factor shall be 0.75 in Climate Zone 1 and 0.65 in Climate Zone 2. An area-weighted average of U-factor and SHGC shall be accepted to meet the requirements, or 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 R403.3.3.
- (3) One side-hinged opaque door assembly up to 24 square feet is exempted from this U-factor requirement.
- (4) 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 percent of the insulation required for the "exterior of wall" is installed exterior of, or integral to, the wall.
- (5) Ducts & AHU installed "substantially leak free" per Section R403.2.2. Test required by an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes. The total leakage test is not required for ducts and air handlers located entirely within the thermal envelope.
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TABLE 402B MANDATORY REQUIREMENTS			
Component	Section	Summary of Requirement(s)	Check
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Programmable thermostat	R403.1.2	Where forced-air furnace is primary system, programmable thermostat is required.	
Air distribution system	R403.2.2 R403.2.4	Ducts shall be tested to Section 803 of the RESNET standards by an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes. Air handling units are not allowed in attics.	
Water heaters	R403.4	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	R403.6	Sizing calculation performed & attached. Special occasion cooling or heating capacity requires separate system or variable capacity system.	
Swimming pools & spas	R403.9	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 is 82%. Heat pump pool heaters minimum COP is 4.0	
Lighting equipment	R404.1	At least 75% of permanently installed lighting fixtures shall be high-efficacy lamps.	



# ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

**ESTIMATED ENERGY PERFORMANCE INDEX\* = 104**

The lower the EnergyPerformance Index, the more efficient the home.

12345 North 99th Street, Tampa, FL, 33614

<p>1. New construction or existing 2. Single family or multiple family 3. Number of units, if multiple family 4. Number of Bedrooms 5. Is this a worst case? 6. Conditioned floor area (ft²)</p> <p>7. Windows**</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">Description</td> <td style="width: 30%;">Area</td> </tr> <tr> <td>a. U-Factor:</td> <td>Dbl, U=0.27</td> <td>210.00 ft²</td> </tr> <tr> <td></td> <td>SHGC=0.17</td> <td></td> </tr> <tr> <td>b. U-Factor:</td> <td>Dbl, U=0.68</td> <td>75.00 ft²</td> </tr> <tr> <td></td> <td>SHGC=0.16</td> <td></td> </tr> <tr> <td>c. U-Factor:</td> <td>Sgl, U=1.26</td> <td>15.00 ft²</td> </tr> <tr> <td></td> <td>SHGC=0.80</td> <td></td> </tr> <tr> <td>d. U-Factor:</td> <td>other (see details)</td> <td>10.00 ft²</td> </tr> <tr> <td></td> <td>SHGC: other (see details)</td> <td></td> </tr> <tr> <td></td> <td>Area Weighted Average Overhang Depth:</td> <td>0.000 ft.</td> </tr> <tr> <td></td> <td>Area Weighted Average SHGC:</td> <td>0.273</td> </tr> </table> <p>8. Floor Types</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">Insulation</td> <td style="width: 30%;">Area</td> </tr> <tr> <td>a. Slab-On-Grade Edge Insulation</td> <td>R=0.0</td> <td>2000.00 ft²</td> </tr> <tr> <td>b. N/A</td> <td>R=</td> <td>ft²</td> </tr> <tr> <td>c. N/A</td> <td>R=</td> <td>ft²</td> </tr> </table>		Description	Area	a. U-Factor:	Dbl, U=0.27	210.00 ft²		SHGC=0.17		b. U-Factor:	Dbl, U=0.68	75.00 ft²		SHGC=0.16		c. U-Factor:	Sgl, U=1.26	15.00 ft²		SHGC=0.80		d. U-Factor:	other (see details)	10.00 ft²		SHGC: other (see details)			Area Weighted Average Overhang Depth:	0.000 ft.		Area Weighted Average SHGC:	0.273		Insulation	Area	a. Slab-On-Grade Edge Insulation	R=0.0	2000.00 ft²	b. N/A	R=	ft²	c. N/A	R=	ft²	<p>9. Wall Types</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 80%;">Insulation</td> <td style="width: 10%;">Area</td> </tr> <tr> <td>a. Concrete Block - Int Insul, Exterior</td> <td>R=6.0</td> <td>1700.00 ft²</td> </tr> <tr> <td>b. Frame - Wood, Exterior</td> <td>R=13.0</td> <td>100.00 ft²</td> </tr> <tr> <td>c. N/A</td> <td>R=</td> <td>ft²</td> </tr> <tr> <td>d. N/A</td> <td>R=</td> <td>ft²</td> </tr> </table> <p>10. Ceiling Types</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 80%;">Insulation</td> <td style="width: 10%;">Area</td> </tr> <tr> <td>a. Under Attic (Vented)</td> <td>R=38.0</td> <td>2000.00 ft²</td> </tr> <tr> <td>b. N/A</td> <td>R=</td> <td>ft²</td> </tr> <tr> <td>c. N/A</td> <td>R=</td> <td>ft²</td> </tr> </table> <p>11. Ducts</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 80%;">R</td> <td style="width: 10%;">ft²</td> </tr> <tr> <td>a. Sup: Attic, Ret: Main, AH: Main</td> <td>8</td> <td>400</td> </tr> </table> <p>12. Cooling systems</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 60%;">kBtu/hr</td> <td style="width: 20%;">Efficiency</td> </tr> <tr> <td>a. Central Unit</td> <td>21.0</td> <td>SEER:14.00</td> </tr> </table> <p>13. Heating systems</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 60%;">kBtu/hr</td> <td style="width: 20%;">Efficiency</td> </tr> <tr> <td>a. Electric Heat Pump</td> <td>21.0</td> <td>HSPF:8.50</td> </tr> </table> <p>14. Hot water systems</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 60%;">Cap: 50 gallons</td> <td style="width: 20%;">EF: 0.95</td> </tr> <tr> <td>a. Electric</td> <td></td> <td></td> </tr> <tr> <td>b. Conservation features</td> <td colspan="2">None</td> </tr> </table> <p>15. Credits</p> <p style="text-align: right;">None</p>		Insulation	Area	a. Concrete Block - Int Insul, Exterior	R=6.0	1700.00 ft²	b. Frame - Wood, Exterior	R=13.0	100.00 ft²	c. N/A	R=	ft²	d. N/A	R=	ft²		Insulation	Area	a. Under Attic (Vented)	R=38.0	2000.00 ft²	b. N/A	R=	ft²	c. N/A	R=	ft²		R	ft²	a. Sup: Attic, Ret: Main, AH: Main	8	400		kBtu/hr	Efficiency	a. Central Unit	21.0	SEER:14.00		kBtu/hr	Efficiency	a. Electric Heat Pump	21.0	HSPF:8.50		Cap: 50 gallons	EF: 0.95	a. Electric			b. Conservation features	None	
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I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction 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: \_\_\_\_\_



\*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

\*\*Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

# Florida Building Code, Energy Conservation

## Residential Building Thermal Envelope Approach R-Value Computation Method

FORM R402-2014

Climate Zone 2

**Scope:** Compliance with Section R402.1.1 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, renovations, and building systems in existing buildings, as applicable. To comply, a building must meet or exceed all of the energy efficiency requirements on Table R402A and all applicable mandatory requirements summarized in Table R402B of this form. If a building does not comply with this method, or by the UA Alternative method, it may still comply under Section R405 of the Florida Building Code, Energy Conservation.

PROJECT NAME:	TAM Tampa House 3	BUILDER: <b>INCOMPLETE</b>
AND ADDRESS:	12345 North 99th Street	PERMITTING OFFICE: <b>INCOMPLETE</b>
	Tampa FL 33614	JURISDICTION NUMBER: <b>INCOMPLETE</b>
OWNER:	<b>INCOMPLETE</b>	PERMIT NUMBER: <b>INCOMPLETE</b>

**General Instructions:**

1. Fill in all the applicable spaces of the "To Be Installed" column on Table R402A with the information requested. All "To Be Installed" values must be equal to or more efficient than the required levels.
2. Complete page 1 based on the "To Be Installed" column information.
3. Read the requirements of Table R402B and check each box to indicate your intent to comply with all applicable items.
4. 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.

	Check
1. New construction, addition, or existing building	1. <u>New (From Plans)</u> _____
2. Single-family detached or multiple-family attached	2. <u>Single family</u> _____
3. If multiple-family, number of units covered by this submission	3. _____
4. Is this a worst case? (yes/no)	4. <u>No</u> _____
5. Conditioned floor area (sq. ft.)	5. <u>2000</u> _____
6. Windows type and area:	
a) U-factor:	6a. <u>0.392</u> _____
b) Solar Heat Gain Coefficient (SHGC):	6b. <u>0.25 (15sqft exempt*)</u> _____
c) Area:	6c. <u>300</u> _____
7. Skylights, type and area:	
a) U-factor:	7a. <u>0.650</u> _____
b) Solar Heat Gain Coefficient (SHGC):	7b. <u>0.25</u> _____
c) Skylight area:	7c. <u>10</u> _____
8. Floor type, area or perimeter, and insulation: (Total exposed area = 2000 sqft)	
a) Slab-on-grade (R-value)	8a. <u>0</u> _____
b) Wood, raised (R-value)	8b. <u>Not Applicable</u> _____
c) Wood, common (R-value)	8c. <u>Not Applicable</u> _____
d) Concrete, raised (R-value)	8d. <u>Not Applicable</u> _____
e) Concrete, common (R-value)	8e. <u>Not Applicable</u> _____
9. Wall type, area and insulation: (Total exposed area = 1000 sqft)	
a) Exterior:	
1. Wood frame (Insulation R-value)	9a1. <u>18</u> _____
2. Masonry (Insulation R-value)	9a2. <u>Not Applicable</u> _____
b) Adjacent:	
1. Wood frame (Insulation R-value)	9b1. <u>Not Applicable</u> _____
2. Masonry (Insulation R-value)	9b2. <u>Not Applicable</u> _____
10. Ceiling type, area and insulation (Total exposed area = 2000 sqft)	
a) Attic (Insulation R-value)	10a. <u>30</u> <b>FAILED</b> _____
b) Single assembly (Insulation R-value)	10b. <u>Not Applicable</u> _____
11. Air distribution system:	
a) Duct insulation	11a. <u>R6.0</u> _____
b) AHU location	11b. <u>Main</u> _____
c) Total Duct Leakage Test report attached	11c. <u>0.04(Substantially leak free)</u> _____
12. Cooling system:	
a) type:	12a. <u>Central Unit</u> _____
b) efficiency	12b. <u>14</u> _____
13. Heating system:	
a) type:	13a. <u>Electric Heat Pump</u> _____
b) efficiency	13b. <u>HSPF = 8.50</u> _____
14. HVAC sizing calculation: attached	14. <u>Verify attachment</u> _____
15. Water heating system:	
a) type	15a. <u>Electric Storage</u> _____
b) efficiency	15b. <u>0.95</u> _____

\*Passes after inspection see Florida Code 402.3.3

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 _____ I hereby certify that this building is in compliance with the <i>Florida Building Code, Energy Conservation</i> . OWNER/AGENT: _____ Date _____	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 _____
---	--

**TABLE 402A**

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS <sup>1</sup>		INSTALLED VALUES	
	Climate Zone 1	Climate Zone 2	Fens. U-Factor(Ave) = 0.360 PASS	
Windows	U-Factor = 0.65 <sup>2</sup> SHGC= 0.25	U-Factor = 0.40 <sup>2</sup> SHGC= 0.25	U-Factor(Avg)=0.35 SHGC(Avg)=0.25 (15sqft exempt*) PASS	
Skylights	U-Factor = 0.75 SHGC= 0.30	U-Factor = 0.65 SHGC= 0.30	U-Factor(Avg) = 0.65 SHGC(Avg) = 0.25 PASS	
Doors: Exterior door	U-Factor = 0.65 <sup>3</sup>	U-Factor = 0.40 <sup>3</sup>	U-Factors(Max) = 0.4 PASS	
Floors: Over unconditioned spaces <sup>4</sup> Common	R-13 R-11	R-13 R-11	Not Applicable Not Applicable	
Walls: Ext. and Adj. Frame Mass(Insulation on wall interior): Mass(Insulation on wall exterior): Common(multifamily):	R-13 R-4 R-3 Fr:R-11, Mass:R-6	R-13 R-6 R-4 Fr:R-11, Mass:R-6	R-Value(Min) = 18 PASS Not Applicable Not Applicable Not Applicable	
Ceilings: Exposed Common	R-30 R-11	R-38 R-11	R-Value(Min) = 30 FAIL Not Applicable	
Air infiltration:	Blower door test is required on the building envelope to verify leakage ≤ 5 ACH50; test report provided to code official.		Total leakage(ACH50) = 5.000 PASS Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Air distribution system <sup>5</sup> : Air handling unit  Duct R-Value  Air Leakage <sup>5</sup> : Duct test  Ducts in conditioned space	Not allowed in attic Sealed R-value ≥ R-8 (supply in unconditioned attics) or ≥R-6 (all other unconditioned duct locations).  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 in conditioned space.		Location: Main PASS Sealed PASS R-Value(Supply in unc. attic) = 8.0 PASS R-Value(Others in unc. space) = 8.0 PASS  Substantially Leak Free Test report required? YES Location: Unconditioned	
Air conditioning systems: Central system ≤ 65,000 Btu/h  PTAC Other:	Minimum federal standard required by NAECA <sup>6</sup> SEER=14.0 EER [from Table C403.2.3(3)]		SEER(Min)=14 PASS	
Heating systems: Heating Pump ≤ 65,000 Btu/h Gas Furnace, non-weatherized Oil Furnace, non-weatherized Other:	Minimum federal standard required by NAECA <sup>6</sup> HSPF= 8.2 AFUE 78% (AFUE 80% after Nov. 2015) AFUE 83%		HSPF(Min) = 8.5 PASS Not Applicable Not Applicable	
Water heating system (storage type): Electric: <sup>7</sup> Gas fired: <sup>8</sup> Other (describe):	Minimum federal standard required by NAECA <sup>6</sup> 50 gallons: EF=0.945 40 gallons: EF=0.62, 50 gallons: EF=0.60		50 gallons: EF=0.95 PASS Not Applicable	

R-Value Calculation Method - **FAIL**

NR = No requirement

- (1) Each component present in the As Proposed home must meet or exceed each of the applicable criteria in order to comply with this code using this method.
- (2) 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 minimum U-factor shall be 0.75 in Climate Zone 1 and 0.65 in Climate Zone 2. An area-weighted average of U-factor and SHGC shall be accepted to meet the requirements, or 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 R403.3.3.
- (3) One side-hinged opaque door assembly up to 24 square feet is exempted from this U-factor requirement.
- (4) 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 percent of the insulation required for the "exterior of wall" is installed exterior of, or integral to, the wall.
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Programmable thermostat	R403.1.2	Where forced-air furnace is primary system, programmable thermostat is required.	
Air distribution system	R403.2.2 R403.2.4	Ducts shall be tested to Section 803 of the RESNET standards by an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes. Air handling units are not allowed in attics.	
Water heaters	R403.4	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.	
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Swimming pools & spas	R403.9	Spas and heated pools must have vapor-retardent 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	At least 75% of permanently installed lighting fixtures shall be high-efficacy lamps.	

# ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

**ESTIMATED ENERGY PERFORMANCE INDEX\* = 104**

The lower the EnergyPerformance Index, the more efficient the home.

12345 North 99th Street, Tampa, FL, 33614

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I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction 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: \_\_\_\_\_



\*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

\*\*Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

# Florida Building Code, Energy Conservation

## Residential Building Thermal Envelope Approach R-Value Computation Method

FORM R402-2014

Climate Zone 1

**Scope:** Compliance with Section R402.1.1 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, renovations, and building systems in existing buildings, as applicable. To comply, a building must meet or exceed all of the energy efficiency requirements on Table R402A and all applicable mandatory requirements summarized in Table R402B of this form. If a building does not comply with this method, or by the UA Alternative method, it may still comply under Section R405 of the Florida Building Code, Energy Conservation.

PROJECT NAME:	TAM Miami House 1	BUILDER: <b>INCOMPLETE</b>
AND ADDRESS:	12345 North 99th Street	PERMITTING OFFICE: <b>INCOMPLETE</b>
	Miami FL 33125	JURISDICTION NUMBER: <b>INCOMPLETE</b>
OWNER:	<b>INCOMPLETE</b>	PERMIT NUMBER: <b>INCOMPLETE</b>

**General Instructions:**

1. Fill in all the applicable spaces of the "To Be Installed" column on Table R402A with the information requested. All "To Be Installed" values must be equal to or more efficient than the required levels.
2. Complete page 1 based on the "To Be Installed" column information.
3. Read the requirements of Table R402B and check each box to indicate your intent to comply with all applicable items.
4. 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.

	Check
1. New construction, addition, or existing building	1. <u>New (From Plans)</u> _____
2. Single-family detached or multiple-family attached	2. <u>Single family</u> _____
3. If multiple-family, number of units covered by this submission	3. _____
4. Is this a worst case? (yes/no)	4. <u>No</u> _____
5. Conditioned floor area (sq. ft.)	5. <u>2000</u> _____
6. Windows type and area:	
a) U-factor:	6a. <u>0.650</u> _____
b) Solar Heat Gain Coefficient (SHGC):	6b. <u>0.25</u> _____
c) Area:	6c. <u>300</u> _____
7. Skylights, type and area:	
a) U-factor:	7a. <u>0.750</u> _____
b) Solar Heat Gain Coefficient (SHGC):	7b. <u>0.25</u> _____
c) Skylight area:	7c. <u>10</u> _____
8. Floor type, area or perimeter, and insulation: (Total exposed area = 2000 sqft)	
a) Slab-on-grade (R-value)	8a. <u>0</u> _____
b) Wood, raised (R-value)	8b. <u>Not Applicable</u> _____
c) Wood, common (R-value)	8c. <u>Not Applicable</u> _____
d) Concrete, raised (R-value)	8d. <u>Not Applicable</u> _____
e) Concrete, common (R-value)	8e. <u>Not Applicable</u> _____
9. Wall type, area and insulation: (Total exposed area = 1000 sqft)	
a) Exterior:	
1. Wood frame (Insulation R-value)	9a1. <u>13</u> _____
2. Masonry (Insulation R-value)	9a2. <u>5.2</u> _____
b) Adjacent:	
1. Wood frame (Insulation R-value)	9b1. <u>Not Applicable</u> _____
2. Masonry (Insulation R-value)	9b2. <u>Not Applicable</u> _____
10. Ceiling type, area and insulation (Total exposed area = 2000 sqft)	
a) Attic (Insulation R-value)	10a. <u>38</u> _____
b) Single assembly (Insulation R-value)	10b. <u>Not Applicable</u> _____
11. Air distribution system:	
a) Duct insulation	11a. <u>R6.0</u> _____
b) AHU location	11b. <u>Main</u> _____
c) Total Duct Leakage test report attached	11c. <u>0.04(Substantially leak free)</u> _____
12. Cooling system:	
a) type:	12a. <u>Central Unit</u> _____
b) efficiency	12b. <u>14</u> _____
13. Heating system:	
a) type:	13a. <u>Electric Heat Pump</u> _____
b) efficiency	13b. <u>HSPF = 8.20</u> _____
14. HVAC sizing calculation: attached	14. <u>Verify attachment</u> _____
15. Water heating system:	
a) type	15a. <u>Electric Storage</u> _____
b) efficiency	15b. <u>0.95</u> _____

DEMONSTRATION PURPOSES ONLY

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 _____	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.
I hereby certify that this building is in compliance with the <i>Florida Building Code, Energy Conservation</i> . OWNER/AGENT: _____ Date _____	CODE OFFICIAL: _____ Date _____

**TABLE 402A**

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS <sup>1</sup>		INSTALLED VALUES	
	Climate Zone 1	Climate Zone 2	Fens. U-Factor(Ave) = 0.650	PASS
Windows	U-Factor = 0.65 <sup>2</sup> SHGC= 0.25	U-Factor = 0.40 <sup>2</sup> SHGC= 0.25	U-Factor(Avg)=0.65 SHGC(Avg) = 0.25	PASS
Skylights	U-Factor = 0.75 SHGC= 0.30	U-Factor = 0.65 SHGC= 0.30	U-Factor(Avg) = 0.75 SHGC(Avg) = 0.25	PASS
Doors: Exterior door	U-Factor = 0.65 <sup>3</sup>	U-Factor = 0.40 <sup>3</sup>	U-Factors(Max)=0.65 (0 sq.ft. exempt**)	PASS
Floors: Over unconditioned spaces <sup>4</sup> Common	R-13 R-11	R-13 R-11	Not Applicable Not Applicable	
Walls: Ext. and Adj. Frame Mass(Insulation on wall interior): Mass(Insulation on wall exterior): Common(multifamily):	R-13 R-4 R-3 Fr:R-11, Mass:R-6	R-13 R-6 R-4 Fr:R-11, Mass:R-6	R-Value(Min) = 13 R-Values = 5.2 Not Applicable Not Applicable	PASS PASS
Ceilings: Exposed Common	R-30 R-11	R-38 R-11	R-Value = 38 Not Applicable	PASS
Air infiltration:	Blower door test is required on the building envelope to verify leakage ≤ 5 ACH50; test report provided to code official.		Total leakage(ACH50) = 5.000 Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	PASS
Air distribution system <sup>5</sup> : Air handling unit  Duct R-Value  Air Leakage <sup>5</sup> : Duct test  Ducts in conditioned space	Not allowed in attic Sealed R-value ≥ R-8 (supply in unconditioned attics) or ≥R-6 (all other unconditioned duct locations).  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 in conditioned space.		Location: Main Sealed R-Value(Supply in unc. attic) = 8.0 R-Value(Others in unc. space) = 8.0  Substantially Leak Free Test report required? YES Location: Unconditioned	PASS PASS PASS PASS
Air conditioning systems: Central system ≤ 65,000 Btu/h  PTAC Other:	Minimum federal standard required by NAECA <sup>6</sup> SEER=14.0 EER [from Table C403.2.3(3)]		SEER(Min)=14	PASS
Heating systems: Heating Pump ≤ 65,000 Btu/h Gas Furnace, non-weatherized Oil Furnace, non-weatherized Other:	Minimum federal standard required by NAECA <sup>6</sup> HSPF= 8.2 AFUE 78% (AFUE 80% after Nov. 2015) AFUE 83%		HSPF(Min) = 8.2 Not Applicable Not Applicable	PASS
Water heating system (storage type): Electric: <sup>7</sup> Gas fired: <sup>8</sup> Other (describe):	Minimum federal standard required by NAECA <sup>6</sup> 50 gallons: EF=0.945 40 gallons: EF=0.62, 50 gallons: EF=0.60		50 gallons: EF=0.95 Not Applicable	PASS

User entry meets requirements of R-Value Calculation Method.

NR = No requirement

- (1) Each component present in the As Proposed home must meet or exceed each of the applicable criteria in order to comply with this code using this method.
- (2) 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 minimum U-factor shall be 0.75 in Climate Zone 1 and 0.65 in Climate Zone 2. An area-weighted average of U-factor and SHGC shall be accepted to meet the requirements, or 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 R403.3.3.
- (3) One side-hinged opaque door assembly up to 24 square feet is exempted from this U-factor requirement.
- (4) 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 percent of the insulation required for the "exterior of wall" is installed exterior of, or integral to, the wall.
- (5) Ducts & AHU installed "substantially leak free" per Section R403.2.2. Test required by an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes. The total leakage test is not required for ducts and air handlers located entirely within the thermal envelope.
- (6) 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 (1-11) of the Commercial Provisions of the Florida Building Code, Energy Conservation.
- (7) For electric storage volumes ≤ 55, min. EF = 0.960 – (0.0003 \* volume). For electric storage volumes > 55, min. EF = 2.057 – (0.00113 \* volume).
- (8) For natural gas storage volumes ≤ 55, min. EF = 0.675 – (0.0015 \* volume). For natural gas storage volumes > 55, min. EF = 0.8012 – (0.00078 \* volume).
- (9) For electric tankless, min. EF = 0.93. For natural gas tankless, min. EF = 0.82

TABLE 402B MANDATORY 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 $\leq 2.0$ 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/DSA 101/I.S. 2/A440. Fireplaces: Tight-fitting flue dampers & outdoor combustion air.	
Programmable thermostat	R403.1.2	Where forced-air furnace is primary system, programmable thermostat is required.	
Air distribution system	R403.2.2 R403.2.4	Ducts shall be tested to Section 803 of the RESNET standards by an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes. Air handling units are not allowed in attics.	
Water heaters	R403.4	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	R403.6	Sizing calculation performed & attached. Special occasion cooling or heating capacity requires separate system or variable capacity system.	
Swimming pools & spas	R403.9	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 is 82%. Heat pump pool heaters minimum COP is 4.0	
Lighting equipment	R404.1	At least 75% of permanently installed lighting fixtures shall be high-efficacy lamps.	



# ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

**ESTIMATED ENERGY PERFORMANCE INDEX\* = 103**

The lower the EnergyPerformance Index, the more efficient the home.

12345 North 99th Street, Miami, FL, 33125

<p>1. New construction or existing 2. Single family or multiple family 3. Number of units, if multiple family 4. Number of Bedrooms 5. Is this a worst case? 6. Conditioned floor area (ft<sup>2</sup>) 7. Windows**</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">Description</td> <td style="width: 30%;">Area</td> </tr> <tr> <td>a. U-Factor:</td> <td>Dbl, U=0.65</td> <td>300.00 ft<sup>2</sup></td> </tr> <tr> <td>SHGC:</td> <td>SHGC=0.25</td> <td></td> </tr> <tr> <td>b. U-Factor:</td> <td>Dbl, U=0.75</td> <td>10.00 ft<sup>2</sup></td> </tr> <tr> <td>SHGC:</td> <td>SHGC=0.25</td> <td></td> </tr> <tr> <td>c. U-Factor:</td> <td>N/A</td> <td>ft<sup>2</sup></td> </tr> <tr> <td>SHGC:</td> <td></td> <td></td> </tr> <tr> <td>d. U-Factor:</td> <td>N/A</td> <td>ft<sup>2</sup></td> </tr> <tr> <td>SHGC:</td> <td></td> <td></td> </tr> <tr> <td colspan="2">Area Weighted Average Overhang Depth:</td> <td>0.000 ft.</td> </tr> <tr> <td colspan="2">Area Weighted Average SHGC:</td> <td>0.250</td> </tr> </table> <p>8. Floor Types</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">Insulation</td> <td style="width: 30%;">Area</td> </tr> <tr> <td>a. Slab-On-Grade Edge Insulation</td> <td>R=0.0</td> <td>2000.00 ft<sup>2</sup></td> </tr> <tr> <td>b. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> <tr> <td>c. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> </table>		Description	Area	a. U-Factor:	Dbl, U=0.65	300.00 ft <sup>2</sup>	SHGC:	SHGC=0.25		b. U-Factor:	Dbl, U=0.75	10.00 ft <sup>2</sup>	SHGC:	SHGC=0.25		c. U-Factor:	N/A	ft <sup>2</sup>	SHGC:			d. U-Factor:	N/A	ft <sup>2</sup>	SHGC:			Area Weighted Average Overhang Depth:		0.000 ft.	Area Weighted Average SHGC:		0.250		Insulation	Area	a. Slab-On-Grade Edge Insulation	R=0.0	2000.00 ft <sup>2</sup>	b. N/A	R=	ft <sup>2</sup>	c. N/A	R=	ft <sup>2</sup>	<p>9. Wall Types</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 80%;">Insulation</td> <td style="width: 10%;">Area</td> </tr> <tr> <td>a. Concrete Block - Int Insul, Exterior</td> <td>R=4.0</td> <td>1700.00 ft<sup>2</sup></td> </tr> <tr> <td>b. Frame - Wood, Exterior</td> <td>R=13.0</td> <td>100.00 ft<sup>2</sup></td> </tr> <tr> <td>c. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> <tr> <td>d. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> </table> <p>10. Ceiling Types</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 80%;">Insulation</td> <td style="width: 10%;">Area</td> </tr> <tr> <td>a. Under Attic (Vented)</td> <td>R=38.0</td> <td>2000.00 ft<sup>2</sup></td> </tr> <tr> <td>b. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> <tr> <td>c. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> </table> <p>11. Ducts</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 80%;">R</td> <td style="width: 10%;">ft<sup>2</sup></td> </tr> <tr> <td>a. Sup: Attic, Ret: Main, AH: Main</td> <td>8</td> <td>400</td> </tr> </table> <p>12. Cooling systems</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 60%;">kBtu/hr</td> <td style="width: 20%;">Efficiency</td> </tr> <tr> <td>a. Central Unit</td> <td>21.0</td> <td>SEER:14.00</td> </tr> </table> <p>13. Heating systems</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 60%;">kBtu/hr</td> <td style="width: 20%;">Efficiency</td> </tr> <tr> <td>a. Electric Heat Pump</td> <td>21.0</td> <td>HSPF:8.20</td> </tr> </table> <p>14. Hot water systems</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 60%;">Cap: 50 gallons</td> <td style="width: 20%;">EF: 0.95</td> </tr> <tr> <td>a. Electric</td> <td></td> <td></td> </tr> <tr> <td>b. Conservation features</td> <td colspan="2">None</td> </tr> </table> <p>15. Credits</p> <p style="text-align: right;">None</p>		Insulation	Area	a. Concrete Block - Int Insul, Exterior	R=4.0	1700.00 ft <sup>2</sup>	b. Frame - Wood, Exterior	R=13.0	100.00 ft <sup>2</sup>	c. N/A	R=	ft <sup>2</sup>	d. N/A	R=	ft <sup>2</sup>		Insulation	Area	a. Under Attic (Vented)	R=38.0	2000.00 ft <sup>2</sup>	b. N/A	R=	ft <sup>2</sup>	c. N/A	R=	ft <sup>2</sup>		R	ft <sup>2</sup>	a. Sup: Attic, Ret: Main, AH: Main	8	400		kBtu/hr	Efficiency	a. Central Unit	21.0	SEER:14.00		kBtu/hr	Efficiency	a. Electric Heat Pump	21.0	HSPF:8.20		Cap: 50 gallons	EF: 0.95	a. Electric			b. Conservation features	None	
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FOR DEMONSTRATION PURPOSES ONLY

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction 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: \_\_\_\_\_



\*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

\*\*Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

# Florida Building Code, Energy Conservation

## Residential Building Thermal Envelope Approach R-Value Computation Method

FORM R402-2014

Climate Zone 1

**Scope:** Compliance with Section R402.1.1 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, renovations, and building systems in existing buildings, as applicable. To comply, a building must meet or exceed all of the energy efficiency requirements on Table R402A and all applicable mandatory requirements summarized in Table R402B of this form. If a building does not comply with this method, or by the UA Alternative method, it may still comply under Section R405 of the Florida Building Code, Energy Conservation.

PROJECT NAME:	TAM Miami House 3	BUILDER: <b>INCOMPLETE</b>
AND ADDRESS:	12345 North 99th Street	PERMITTING OFFICE: <b>INCOMPLETE</b>
	Miami FL 33125	JURISDICTION NUMBER: <b>INCOMPLETE</b>
OWNER:	<b>INCOMPLETE</b>	PERMIT NUMBER: <b>INCOMPLETE</b>

**General Instructions:**

1. Fill in all the applicable spaces of the "To Be Installed" column on Table R402A with the information requested. All "To Be Installed" values must be equal to or more efficient than the required levels.
2. Complete page 1 based on the "To Be Installed" column information.
3. Read the requirements of Table R402B and check each box to indicate your intent to comply with all applicable items.
4. 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.

	Check
1. New construction, addition, or existing building	1. <u>New (From Plans)</u> _____
2. Single-family detached or multiple-family attached	2. <u>Single family</u> _____
3. If multiple-family, number of units covered by this submission	3. _____
4. Is this a worst case? (yes/no)	4. <u>No</u> _____
5. Conditioned floor area (sq. ft.)	5. <u>2000</u> _____
6. Windows type and area:	
a) U-factor:	6a. <u>0.650</u> _____
b) Solar Heat Gain Coefficient (SHGC):	6b. <u>0.25</u> _____
c) Area:	6c. <u>300</u> _____
7. Skylights, type and area:	
a) U-factor:	7a. <u>0.750</u> _____
b) Solar Heat Gain Coefficient (SHGC):	7b. <u>0.25</u> _____
c) Skylight area:	7c. <u>10</u> _____
8. Floor type, area or perimeter, and insulation: (Total exposed area = 2000 sqft)	
a) Slab-on-grade (R-value)	8a. <u>0</u> _____
b) Wood, raised (R-value)	8b. <u>Not Applicable</u> _____
c) Wood, common (R-value)	8c. <u>Not Applicable</u> _____
d) Concrete, raised (R-value)	8d. <u>Not Applicable</u> _____
e) Concrete, common (R-value)	8e. <u>Not Applicable</u> _____
9. Wall type, area and insulation: (Total exposed area = 1000 sqft)	
a) Exterior:	
1. Wood frame (Insulation R-value)	9a1. <u>13</u> _____
2. Masonry (Insulation R-value)	9a2. <u>4</u> _____
b) Adjacent:	
1. Wood frame (Insulation R-value)	9b1. <u>Not Applicable</u> _____
2. Masonry (Insulation R-value)	9b2. <u>Not Applicable</u> _____
10. Ceiling type, area and insulation (Total exposed area = 2000 sqft)	
a) Attic (Insulation R-value)	10a. <u>30</u> _____
b) Single assembly (Insulation R-value)	10b. <u>Not Applicable</u> _____
11. Air distribution system:	
a) Duct insulation	11a. <b>R6.0</b> <b>FAILED</b> _____
b) AHU location	11b. <u>Main</u> _____
c) Total Duct Leakage test report attached	11c. <u>0.04(Substantially leak free)</u> _____
12. Cooling system:	
a) type:	12a. <u>Central Unit</u> _____
b) efficiency	12b. <u>14</u> _____
13. Heating system:	
a) type:	13a. <u>Electric Heat Pump</u> _____
b) efficiency	13b. <u>HSPF = 8.20</u> _____
14. HVAC sizing calculation: attached	14. <u>Verify attachment</u> _____
15. Water heating system:	
a) type	15a. <u>Electric Storage</u> _____
b) efficiency	15b. <u>0.95</u> _____

DEMONSTRATION PURPOSES ONLY

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 _____	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.
I hereby certify that this building is in compliance with the <i>Florida Building Code, Energy Conservation</i> . OWNER/AGENT: _____ Date _____	CODE OFFICIAL: _____ Date _____

**TABLE 402A**

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS <sup>1</sup>		INSTALLED VALUES	
	Climate Zone 1	Climate Zone 2	Fens. U-Factor(Ave) = 0.650	PASS
Windows	U-Factor = 0.65 <sup>2</sup> SHGC= 0.25	U-Factor = 0.40 <sup>2</sup> SHGC= 0.25	U-Factor(Avg)=0.65 SHGC(Avg) = 0.25	PASS
Skylights	U-Factor = 0.75 SHGC= 0.30	U-Factor = 0.65 SHGC= 0.30	U-Factor(Avg) = 0.75 SHGC(Avg) = 0.25	PASS
Doors: Exterior door	U-Factor = 0.65 <sup>3</sup>	U-Factor = 0.40 <sup>3</sup>	U-Factors(Max)=0.65 (0 sq.ft. exempt**)	PASS
Floors: Over unconditioned spaces <sup>4</sup> Common	R-13 R-11	R-13 R-11	Not Applicable Not Applicable	
Walls: Ext. and Adj. Frame Mass(Insulation on wall interior): Mass(Insulation on wall exterior): Common(multifamily):	R-13 R-4 R-3 Fr:R-11, Mass:R-6	R-13 R-6 R-4 Fr:R-11, Mass:R-6	R-Value(Min) = 13 R-Values = 4 Not Applicable Not Applicable	PASS PASS
Ceilings: Exposed Common	R-30 R-11	R-38 R-11	R-Value = 30 Not Applicable	PASS
Air infiltration:	Blower door test is required on the building envelope to verify leakage ≤ 5 ACH50; test report provided to code official.		Total leakage(ACH50) = 5.000 Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	PASS
Air distribution system <sup>5</sup> : Air handling unit  Duct R-Value  Air Leakage <sup>5</sup> : Duct test  Ducts in conditioned space	Not allowed in attic Sealed R-value ≥ R-8 (supply in unconditioned attics) or ≥R-6 (all other unconditioned duct locations).  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 in conditioned space.		Location: Main Sealed R-Value(Supply in unc. attic) = <b>6.0</b> R-Value(Others in unc. space) = 6.0  Substantially Leak Free Test report required? YES Location: Unconditioned	PASS PASS <b>FAIL</b> PASS
Air conditioning systems: Central system ≤ 65,000 Btu/h  PTAC Other:	Minimum federal standard required by NAECA <sup>6</sup> SEER=14.0 EER [from Table C403.2.3(3)]		SEER(Min)=14	PASS
Heating systems: Heating Pump ≤ 65,000 Btu/h Gas Furnace, non-weatherized Oil Furnace, non-weatherized Other:	Minimum federal standard required by NAECA <sup>6</sup> HSPF= 8.2 AFUE 78% (AFUE 80% after Nov. 2015) AFUE 83%		HSPF(Min) = 8.2 Not Applicable Not Applicable	PASS
Water heating system (storage type): Electric: <sup>7</sup> Gas fired: <sup>8</sup> Other (describe):	Minimum federal standard required by NAECA <sup>6</sup> 50 gallons: EF=0.945 40 gallons: EF=0.62, 50 gallons: EF=0.60		50 gallons: EF=0.95 Not Applicable	PASS

R-Value Calculation Method - **FAIL**

NR = No requirement

- (1) Each component present in the As Proposed home must meet or exceed each of the applicable criteria in order to comply with this code using this method.
- (2) 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 minimum U-factor shall be 0.75 in Climate Zone 1 and 0.65 in Climate Zone 2. An area-weighted average of U-factor and SHGC shall be accepted to meet the requirements, or 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 R403.3.3.
- (3) One side-hinged opaque door assembly up to 24 square feet is exempted from this U-factor requirement.
- (4) 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 percent of the insulation required for the "exterior of wall" is installed exterior of, or integral to, the wall.
- (5) Ducts & AHU installed "substantially leak free" per Section R403.2.2. Test required by an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes. The total leakage test is not required for ducts and air handlers located entirely within the thermal envelope.
- (6) 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 (1-11) of the Commercial Provisions of the Florida Building Code, Energy Conservation.
- (7) For electric storage volumes ≤ 55, min. EF = 0.960 – (0.0003 \* volume). For electric storage volumes > 55, min. EF = 2.057 – (0.00113 \* volume).
- (8) For natural gas storage volumes ≤ 55, min. EF = 0.675 – (0.0015 \* volume). For natural gas storage volumes > 55, min. EF = 0.8012 – (0.00078 \* volume).
- (9) For electric tankless, min. EF = 0.93. For natural gas tankless, min. EF = 0.82

TABLE 402B MANDATORY 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 $\leq 2.0$ 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/DSA 101/I.S. 2/A440. Fireplaces: Tight-fitting flue dampers & outdoor combustion air.	
Programmable thermostat	R403.1.2	Where forced-air furnace is primary system, programmable thermostat is required.	
Air distribution system	R403.2.2 R403.2.4	Ducts shall be tested to Section 803 of the RESNET standards by an energy rater certified in accordance with Section 553.99, Florida Statutes, or as authorized by Florida Statutes. Air handling units are not allowed in attics.	
Water heaters	R403.4	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	R403.6	Sizing calculation performed & attached. Special occasion cooling or heating capacity requires separate system or variable capacity system.	
Swimming pools & spas	R403.9	Spas and heated pools must have vapor-retardent 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	At least 75% of permanently installed lighting fixtures shall be high-efficacy lamps.	

# ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

**ESTIMATED ENERGY PERFORMANCE INDEX\* = 100**

The lower the EnergyPerformance Index, the more efficient the home.

12345 North 99th Street, Miami, FL, 33125

<p>1. New construction or existing 2. Single family or multiple family 3. Number of units, if multiple family 4. Number of Bedrooms 5. Is this a worst case? 6. Conditioned floor area (ft<sup>2</sup>) 7. Windows**</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">Description</td> <td style="width: 30%;">Area</td> </tr> <tr> <td>a. U-Factor:</td> <td>Dbl, U=0.65</td> <td>300.00 ft<sup>2</sup></td> </tr> <tr> <td>SHGC:</td> <td>SHGC=0.25</td> <td></td> </tr> <tr> <td>b. U-Factor:</td> <td>Dbl, U=0.75</td> <td>10.00 ft<sup>2</sup></td> </tr> <tr> <td>SHGC:</td> <td>SHGC=0.25</td> <td></td> </tr> <tr> <td>c. U-Factor:</td> <td>N/A</td> <td>ft<sup>2</sup></td> </tr> <tr> <td>SHGC:</td> <td></td> <td></td> </tr> <tr> <td>d. U-Factor:</td> <td>N/A</td> <td>ft<sup>2</sup></td> </tr> <tr> <td>SHGC:</td> <td></td> <td></td> </tr> <tr> <td colspan="2">Area Weighted Average Overhang Depth:</td> <td>0.000 ft.</td> </tr> <tr> <td colspan="2">Area Weighted Average SHGC:</td> <td>0.250</td> </tr> </table> <p>8. Floor Types</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">Insulation</td> <td style="width: 30%;">Area</td> </tr> <tr> <td>a. Slab-On-Grade Edge Insulation</td> <td>R=0.0</td> <td>2000.00 ft<sup>2</sup></td> </tr> <tr> <td>b. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> <tr> <td>c. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> </table>		Description	Area	a. U-Factor:	Dbl, U=0.65	300.00 ft <sup>2</sup>	SHGC:	SHGC=0.25		b. U-Factor:	Dbl, U=0.75	10.00 ft <sup>2</sup>	SHGC:	SHGC=0.25		c. U-Factor:	N/A	ft <sup>2</sup>	SHGC:			d. U-Factor:	N/A	ft <sup>2</sup>	SHGC:			Area Weighted Average Overhang Depth:		0.000 ft.	Area Weighted Average SHGC:		0.250		Insulation	Area	a. Slab-On-Grade Edge Insulation	R=0.0	2000.00 ft <sup>2</sup>	b. N/A	R=	ft <sup>2</sup>	c. N/A	R=	ft <sup>2</sup>	<p>9. Wall Types</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">Insulation</td> <td style="width: 30%;">Area</td> </tr> <tr> <td>a. Concrete Block - Polystyrene Bead Agg</td> <td>R=4.0</td> <td>1700.00 ft<sup>2</sup></td> </tr> <tr> <td>b. Frame - Wood, Exterior</td> <td>R=13.0</td> <td>100.00 ft<sup>2</sup></td> </tr> <tr> <td>c. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> <tr> <td>d. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> </table> <p>10. Ceiling Types</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">Insulation</td> <td style="width: 30%;">Area</td> </tr> <tr> <td>a. Under Attic (Vented)</td> <td>R=30.0</td> <td>2000.00 ft<sup>2</sup></td> </tr> <tr> <td>b. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> <tr> <td>c. N/A</td> <td>R=</td> <td>ft<sup>2</sup></td> </tr> </table> <p>11. Ducts</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">R</td> <td style="width: 30%;">ft<sup>2</sup></td> </tr> <tr> <td>a. Sup: Attic, Ret: Main, AH: Main</td> <td>6</td> <td>400</td> </tr> </table> <p>12. Cooling systems</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">kBtu/hr</td> <td style="width: 30%;">Efficiency</td> </tr> <tr> <td>a. Central Unit</td> <td>21.0</td> <td>SEER:14.00</td> </tr> </table> <p>13. Heating systems</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">kBtu/hr</td> <td style="width: 30%;">Efficiency</td> </tr> <tr> <td>a. Electric Heat Pump</td> <td>21.0</td> <td>HSPF:8.20</td> </tr> </table> <p>14. Hot water systems</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 50%;">Cap: 50 gallons</td> <td style="width: 30%;">EF: 0.95</td> </tr> <tr> <td>a. Electric</td> <td></td> <td></td> </tr> <tr> <td>b. Conservation features</td> <td colspan="2">None</td> </tr> </table> <p>15. Credits</p> <p style="text-align: right;">None</p>		Insulation	Area	a. Concrete Block - Polystyrene Bead Agg	R=4.0	1700.00 ft <sup>2</sup>	b. Frame - Wood, Exterior	R=13.0	100.00 ft <sup>2</sup>	c. N/A	R=	ft <sup>2</sup>	d. N/A	R=	ft <sup>2</sup>		Insulation	Area	a. Under Attic (Vented)	R=30.0	2000.00 ft <sup>2</sup>	b. N/A	R=	ft <sup>2</sup>	c. N/A	R=	ft <sup>2</sup>		R	ft <sup>2</sup>	a. Sup: Attic, Ret: Main, AH: Main	6	400		kBtu/hr	Efficiency	a. Central Unit	21.0	SEER:14.00		kBtu/hr	Efficiency	a. Electric Heat Pump	21.0	HSPF:8.20		Cap: 50 gallons	EF: 0.95	a. Electric			b. Conservation features	None	
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FOR DEMONSTRATION PURPOSES ONLY

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction 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: \_\_\_\_\_



\*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

\*\*Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

## **RESIDENTIAL ENERGY CONSERVATION CODE DOCUMENTATION CHECKLIST**

### **Florida Department of Business and Professional Regulation Residential Total UA Prescriptive Method**

**Applications for compliance with the 2014 Florida Building Code, Energy Conservation via the residential Total UA Alternative prescriptive method should include**

- This Checklist***
- Total UA Report including Total UA Alternative Prescriptive Requirements Checklist(two pages)***
- Input Summary Report (usually 4 pages/may be greater)***
- Energy Performance Level (EPL) Display Card (one page)***
- Mandatory requirements(three pages)***

**Required prior to CO for the Total UA method:**

- A completed Air Distribution System Test Report (usually one page), unless all duct work and air handler units are located within the building thermal envelope.***
- A completed Envelope Leakage Test Report(usually one page)***
- A completed Air Barrier and Insulation Inspection Component Criteria checklist (Table 402.4.1.1 of the 2014 Florida Building Code, Energy Conservation with added checkboxes - one page)***

# FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Total UA Method

Project Name: TAM Tampa House 1 Street: 12345 North 99th Street City, State, Zip: Tampa, FL 33614 Owner: Design Location: FL, Tampa	Builder Name: Permit Office: Permit Number: Jurisdiction:
---	--

1. New construction or existing	New (From Plans)	4. Number of Bedrooms	3
2. Single family or multiple family	Single-family	5. Conditioned floor area above grade (ft2)	2000
3. Number of units, if multiple family		6. Conditioned floor area below grade (ft2)	0

Proposed UA	
Windows	126.5
Doors	9.6
Walls	149.7
Floor	0.0
Ceiling	69.1
<b>Overall UA</b>	<b>354.8</b>

Baseline UA	
Windows	124.0
Doors	9.6
Walls	204.3
Floor	0.0
Ceiling	60.0
<b>Overall UA</b>	<b>397.9</b>

### Compliance Criteria

Overall UA	354.84	PASS	
Window-to-Floor Area	15.5%	N/A	
SHGC Area Weighted	0.250;0.250	PASS	
Air Handler Location	Not attic	PASS	
Duct Insulation	6.000	PASS	
Duct leakage total	MUST TEST		Duct leakage total must be tested as substantially leak free
Roof Reflectance	0.25	PASS	
Wall Area (ft2)	1476.0	WARNING	Wall area appears large - please check
Ceiling Area (ft2)	2000.0	PASS	
Floor Area (ft2)	2000.0	PASS	
Common Wall Mass R	N/A		There are no common mass walls in this building
Common Wall Frame R	N/A		There are no common frame walls in this building
Common Floor Low R	N/A		There are no common floors in this building
Common Ceiling Low R	N/A		There are no common ceilings in this building
Window Area (ft2)	310.0		
Door Area (ft2)	24.0		

User entry meets requirements of Total UA Calculation Method.

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

PREPARED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Review of the 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 with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: \_\_\_\_\_  
 DATE: \_\_\_\_\_



DEMONSTRATION PURPOSES ONLY

Total UA Alternative Report – R402.1.4 Compliance

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS	INSTALLED VALUES	
Air infiltration:	Blower door test is required on the building envelope to verify leakage $\leq 5$ ACH50; test report provided to code official.	Total leakage(ACH50) = 5.000 Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	PASS
Air distribution system <sup>1</sup> :			
Air handling unit	Not allowed in attic Sealed	Location: Main Sealed	PASS PASS
Duct R-Value	R-value $\geq$ R-8 (supply in attics) or $\geq$ R-6 (all other duct locations).	R-Value(Supply in unc. attic) = 8.0 R-Value(Others in unc. space) = 8.0	PASS PASS
Air Leakage <sup>1</sup> :			
Duct test	Air handler installed: Total leakage $\leq 4$ cfm/100 s.f. Air handler Not installed: Total leakage $\leq 3$ cfm/100 s.f.	4.00 cfm/100 s.f. Test report required? YES	PASS
Ducts in conditioned space	Test not required if all ducts and AHU are in conditioned space.	Location: Unconditioned	
Air conditioning systems:	Minimum federal standard required by NAECA <sup>2</sup>		
Central system $\leq 65,000$ Btu/h	SEER=14.0 EER [from Table C403.2.3(3)]	SEER(Min)=14	PASS
Room unit or PTAC	See Tables C403.2.3(1)-(11)		
Other:			
Heating systems:	Minimum federal standard required by NAECA <sup>2</sup>		
Heating Pump $\leq 65,000$ Btu/h	HSPF= 8.2	HSPF(Min) = 8.5	PASS
Gas Furnace, non-weatherized	AFUE 78 % (AFUE 80% after Nov. 2015)	Not Applicable	
Oil Furnace, non-weatherized	AFUE 83%	Not Applicable	
Other:			
Water heating system (storage type):	Minimum federal standard required by NAECA <sup>2</sup>		
Electric: <sup>3</sup>	50 gallons: EF=0.945	50 gallons: EF=0.95	PASS
Gas fired: <sup>4</sup>	40 gallons: EF=0.62, 50 gallons: EF=0.60	Not Applicable	
Other (describe):			

NR = No requirement.

- (1) Ducts & AHU installed "substantially leak free" per Section R403.2.2. Test required by an energy rater certified in accordance with Section 553.99, *Florida Statutes*, or as authorized by *Florida Statutes*. The total leakage test is not required for ducts and air handlers located entirely within the thermal envelope.
- (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 (1-11) of the Commercial Provisions of the *Florida Building Code, Energy Conservation*.
- (3) For other electric storage volumes  $\geq 55$ , min. EF = 2.057 – (0.00113 \* volume).
- (4) For other natural gas storage volumes  $\geq 55$ , min. EF = 0.8012 – (0.00078 \* volume).

DEMONSTRATION PURPOSES ONLY



# Building Input Summary Report

PROJECT											
Title:	TAM Tampa House 1	Bedrooms:	3	Address Type:	Street Address						
Building Type:	User	Bathrooms:	0	Lot #							
Owner:		Conditioned Area:	2000 sq.ft.	Block/SubDivision:							
# of Units:	1	Total Stories:	1	PlatBook:							
Builder Name:		Worst Case:	No	Street:	12345 North 99th Street						
Permit Office:		Rotate Angle:	0	County:	Hillsborough						
Jurisdiction:		Cross Ventilation:		City, State, Zip:	Tampa , FL , 33614						
Family Type:	Single-family	Whole House Fan:									
New/Existing:	New (From Plans)	Terrain:	Suburban								
Year Construct:	2015	Shielding:	Suburban								
Comment:											
CLIMATE											
Design Location	Tmy Site	Design Temp 97.5 %	2.5 %	Int Design Temp Winter	Summer	Heating Degree Days	Design Moisture	Daily Temp Range			
FL, Tampa	FL_TAMPA_INTERNATIONAL_AP	39	91	70	75	645.5	54	Medium			
UTILITY RATES											
Fuel	Unit	Utility Name					Monthly Fixed Cost	\$/Unit			
Electricity	kWh	EnergyGauge Default					0	0.1188			
Natural Gas	Therm	EnergyGauge Default					0	1.72			
Fuel Oil	Gallon	EnergyGauge Default					0	1.1			
Propane	Gallon	EnergyGauge Default					0	1.4			
SURROUNDINGS											
Ornt	Type	Shade Trees			Adjacent Buildings						
		Height	Width	Distance	Exist	Height	Width	Distance			
N	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
NE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
E	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
SE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
S	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
SW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
W	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
NW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
BLOCKS											
Number	Name	Area	Volume								
1	Block1	2000	20000								
SPACES											
Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated		
1	Main	2000	20000	No	1	3	Yes	Yes	Yes		
FLOORS											
#	Floor Type	Space	Perimeter	R-Value	Area	Tile		Wood	Carpet		
1	Slab-On-Grade Edge Insulation	Main	180 ft	0	2000 ft²	----		0	0	1	

# Building Input Summary Report

ROOF														
#	Type	Materials		Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)		
1	Gable or shed	Composition shingles		2166 ft²	416 ft²	Medium	0.75	No	0.9	No	0	22.6		
ATTIC														
#	Type	Ventilation		Vent Ratio (1 in)	Area	RBS	IRCC							
1	Full attic	Vented		300	2000 ft²	N	N							
CEILING														
#	Ceiling Type	Space		R-Value	Area	Framing Fraction		Truss Type						
1	Under Attic ( )	Main		38	2000 ft²	0.07		Wood						
WALLS														
Wall orientation below is as entered. Actual orientation is modified by rotate angle shown in "Project" section above.														
#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
1	N	Exterior	Concrete Block - Int Insul	Main	7.22	50		10		500.0 ft²		0	0.5	0
2	E	Exterior	Concrete Block - Int Insul	Main	7.22	40		10		400.0 ft²		0	0.75	0
3	S	Exterior	Concrete Block - Int Insul	Main	7.22	40		10		400.0 ft²		0	0.5	0
4	S	Exterior	Frame - Wood	Main	13	10		10		100.0 ft²		0.25	0.5	0
5	W	Exterior	Concrete Block - Int Insul	Main	7.22	40		10		400.0 ft²		0	0.5	0
DOORS														
#	Ornt	Door Type		Space	Storms		U-Value	Width Ft	In	Height Ft	In	Area		
1	N	Wood		Main	None		.4	8		3		24 ft²		
WINDOWS														
#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Storm	Area	Overhang		Interior Shade	Screening	
1	N	1	Vinyl	Low-E Double	Yes	0.4	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
2	E	2	Vinyl	Low-E Double	Yes	0.4	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
3	S	3	Vinyl	Low-E Double	Yes	0.4	0.25	N	15.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
4	S	4	Vinyl	Low-E Double	Yes	0.4	0.25	N	60.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
5	W	5	Vinyl	Low-E Double	Yes	0.4	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
6	W	Sky/I	None	Double (Clear)	Yes	0.65	0.25	N	10.0 ft²	2 ft 0 in	0 ft 0 in	Drapes/blinds	None	
INFILTRATION														
#	Scope	Method		SLA	CFM 50	ELA	EqLA	ACH	ACH 50	Space(s)				
1	Wholehouse	Proposed ACH(50)		.000318	1666.7	91.5	172.08	.2383	5	All				
MASS														
Mass Type		Area		Thickness		Furniture Fraction		Space						
No Added Mass		0 ft²		0 ft		0.3		Main						

# Building Input Summary Report

HEATING SYSTEM														
#	System Type	Subtype	Efficiency	Capacity	-----Geothermal HeatPump-----				Ducts	Block				
					Entry	Power	Volt.	Curr						
1	Electric Heat Pump	None	HSPF:8.5	21 kBtu/hr	0	0	0		sys#1	1				
COOLING SYSTEM														
#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Ducts	Block						
1	Central Unit	None	SEER:14	21 kBtu/hr	630 cfm	0.75	sys#1	1						
HOT WATER SYSTEM														
#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Credits						
1	Electric	None	Main	0.95	50 gal	60 gal	120 deg	None						
SOLAR HOT WATER														
Collector Type	Collector Tilt	Surface Azimuth	Area	Absorp. Loss Coef.	Trans. Corr.	Tank Volume	Tank U-Value	Tank Surf Area	Heat Exch Eff	PV Pumped	Pump Energy			
DUCTS														
DUCT #	Location	Supply R-Value	Area	Return Location	Area	Number	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	Coil
1	Attic	8	400 ft²	Main	100 ft²	1	Proposed Qn	Main	--- cfm	--- cfm	0.04	0.00	1	1
TEMPERATURES														
Programable Thermostat: N							Ceiling Fans: N							
Cooling	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input checked="" type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec		
Heating	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec		
Venting	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input checked="" type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec		
Thermostat Schedule: HERS 2006 Reference														
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12	
Cooling (WD)	AM PM	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	
Cooling (WEH)	AM PM	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	
Heating (WD)	AM PM	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	
Heating (WEH)	AM PM	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	

# Building Input Summary Report

<b>APPLIANCES &amp; LIGHTING</b>													
Appliance Schedule: HERS 2006 Reference		Hours											
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12
Ceiling Fans (Summer)	AM	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.33	0.33	0.33	0.33	0.33
% Released: 100	PM	0.33	0.33	0.33	0.33	0.33	1	0.9	0.9	0.9	0.9	0.9	0.65
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Clothes Washer	AM	0.105	0.081	0.046	0.046	0.081	0.128	0.256	0.57	0.849	1	0.977	0.872
% Released: 60	PM	0.779	0.698	0.605	0.57	0.581	0.57	0.57	0.57	0.57	0.488	0.43	0.198
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Dishwasher	AM	0.139	0.05	0.028	0.024	0.029	0.09	0.169	0.303	0.541	0.594	0.502	0.443
% Released: 60	PM	0.377	0.396	0.335	0.323	0.344	0.448	0.791	1	0.8	0.597	0.383	0.281
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Dryer	AM	0.2	0.1	0.05	0.05	0.05	0.075	0.2	0.375	0.5	0.8	0.95	1
% Released: 10	PM	0.875	0.85	0.8	0.625	0.625	0.6	0.575	0.55	0.625	0.7	0.65	0.375
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Lighting	AM	0.16	0.15	0.16	0.18	0.23	0.45	0.4	0.26	0.19	0.16	0.12	0.11
% Released: 90	PM	0.16	0.17	0.25	0.27	0.34	0.55	0.55	0.88	1	0.86	0.51	0.28
Annual Use: 2055 kWh/Yr		Peak Value: 671 Watts											
Miscellaneous	AM	0.48	0.47	0.47	0.47	0.47	0.47	0.64	0.71	0.67	0.61	0.55	0.53
% Released: 90	PM	0.52	0.5	0.5	0.5	0.59	0.73	0.79	0.99	1	0.96	0.77	0.55
Annual Use: 3364 kWh/Yr		Peak Value: 617 Watts											
Pool Pump	AM	0	0	0	0	0	0	0	0	0	1	1	1
% Released: 0	PM	1	1	1	1	0	0	0	0	0	0	0	0
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Range	AM	0.057	0.057	0.057	0.057	0.057	0.114	0.171	0.286	0.343	0.343	0.343	0.4
% Released: 100	PM	0.457	0.343	0.286	0.4	0.571	1	0.857	0.429	0.286	0.229	0.171	0.114
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Refrigeration	AM	0.85	0.78	0.75	0.73	0.73	0.73	0.75	0.75	0.8	0.8	0.8	0.8
% Released: 100	PM	0.88	0.85	0.85	0.83	0.88	0.95	1	0.98	0.95	0.93	0.9	0.85
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Well Pump	AM	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.1	0.1	0.1
% Released: 0	PM	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
<b>REFRIGERATORS</b>													
ID	Type	Screen	Location	Quantity	Vol	FrZ. Vol	Make	Model	Schedule	kWhPerYr			
1		Default New	Main	1									
<b>CLOTHES WASHERS</b>													
ID	Type	Screen	Location	Capacity	Make	Model	Schedule	LoadsPerYr					
1	1 Main	Default New	Main	2.847			HERS201	(invalid)					
<b>CLOTHES DRYERS</b>													
ID	Type	Screen	Location	Capacity	Fuel Type	Make	Model	Schedule	LoadsPerYr				
1	Dryers	Default New	Main		Electricity								

# Building Input Summary Report

<b>DISHWASHERS</b>										
ID	Type	Screen	Location	Capacity	Vintage	Make	Model	Schedule	kWhPerYr	
1	Dishwash	Default New	Main	12	2004 or N			HERS201	372	
<b>RANGE OVEN</b>										
ID	Type	Screen	Location	Type	Fueltype	Make	Model	Cooktop	Oven	
1	Ranges	Default New	Main	CooktopOven C	Electric			Electric FI	Not Conv	
<b>HARD WIRED LIGHTING</b>										
ID	Type	Screen	Location	Total#	Qualify#	Comp FI	All Other FL	txtBulbtype	Schedule	Watts per bulb
1	Hard-Wir	By Count - Qualify	Main	100	10	0	10			
2	Hard-Wir	Default New	Exterior							
3	Hard-Wir	Default New	Garage							
<b>MISC ELECTRICAL LOADS</b>										
ID	Type	Screen	Item	Quantity	Catagory	Operating	Location	Schedule	Off Standby	
1	Misc Elec	Simple Default		1		1	Main	HERS201	1	

# FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Total UA Method

Project Name: TAM Tampa House 2 Street: 12345 North 99th Street City, State, Zip: Tampa, FL 33614 Owner: Design Location: FL, Tampa	Builder Name: Permit Office: Permit Number: Jurisdiction:
---	--

1. New construction or existing	New (From Plans)	4. Number of Bedrooms	3
2. Single family or multiple family	Single-family	5. Conditioned floor area above grade (ft2)	2000
3. Number of units, if multiple family		6. Conditioned floor area below grade (ft2)	0

Proposed UA	
Windows	132.2
Doors	19.2
Walls	149.7
Floor	0.0
Ceiling	69.1
<b>Overall UA</b>	<b>370.1</b>

Baseline UA	
Windows	124.0
Doors	9.6
Walls	204.3
Floor	0.0
Ceiling	60.0
<b>Overall UA</b>	<b>397.9</b>

### Compliance Criteria

Overall UA	370.14	PASS	
Window-to-Floor Area	15.5%	N/A	
SHGC Area Weighted	0.274;0.250	FAIL	Max vertical SHGC is 0.25; max skylight SHGC is 0.3
Air Handler Location	Not attic	PASS	
Duct Insulation	6.000	PASS	
Duct leakage total	MUST	TEST	Duct leakage total must be tested as substantially leak free
Roof Reflectance	0.25	PASS	
Wall Area (ft2)	1476.0	WARNING	Wall area appears large - please check
Ceiling Area (ft2)	2000.0	PASS	
Floor Area (ft2)	2000.0	PASS	
Common Wall Mass R	N/A		There are no common mass walls in this building
Common Wall Frame R	N/A		There are no common frame walls in this building
Common Floor Low R	N/A		There are no common floors in this building
Common Ceiling Low R	N/A		There are no common ceilings in this building
Window Area (ft2)	310.0		
Door Area (ft2)	24.0		

Total UA Calculation Method - **FAIL**


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

PREPARED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Review of the 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 with Section 553.908 Florida Statutes.



BUILDING OFFICIAL: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Total UA Alternative Report – R402.1.4 Compliance

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS	INSTALLED VALUES
Air infiltration:	Blower door test is required on the building envelope to verify leakage $\leq 5$ ACH50; test report provided to code official.	Total leakage(ACH50) = 5.000 Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No PASS
Air distribution system <sup>1</sup> : Air handling unit Duct R-Value Air Leakage <sup>1</sup> : Duct test Ducts in conditioned space	Not allowed in attic Sealed R-value $\geq R-8$ (supply in attics) or $\geq R-6$ (all other duct locations).  Air handler installed: Total leakage $\leq 4$ cfm/100 s.f. Air handler Not installed: Total leakage $\leq 3$ cfm/100 s.f. Test not required if all ducts and AHU are in conditioned space.	Location: Main Sealed R-Value(Supply in unc. attic) = 8.0 R-Value(Others in unc. space) = 8.0  4.00 cfm/100 s.f. Test report required? YES Location: Unconditioned PASS PASS PASS PASS
Air conditioning systems: Central system $\leq 65,000$ Btu/h Room unit or PTAC Other:	Minimum federal standard required by NAECA <sup>2</sup> SEER=14.0 EER [from Table C403.2.3(3)] See Tables C403.2.3(1)-(11)	SEER(Min)=14 PASS
Heating systems: Heating Pump $\leq 65,000$ Btu/h Gas Furnace, non-weatherized Oil Furnace, non-weatherized Other:	Minimum federal standard required by NAECA <sup>2</sup> HSPF= 8.2 AFUE 78 % (AFUE 80% after Nov. 2015) AFUE 83%	HSPF(Min) = 8.5 Not Applicable Not Applicable PASS
Water heating system (storage type): Electric: <sup>3</sup> Gas fired: <sup>4</sup> Other (describe):	Minimum federal standard required by NAECA <sup>2</sup> 50 gallons: EF=0.945 40 gallons: EF=0.62, 50 gallons: EF=0.60	50 gallons: EF=0.95 Not Applicable PASS

NR = No requirement.

- (1) Ducts & AHU installed "substantially leak free" per Section R403.2.2. Test required by an energy rater certified in accordance with Section 553.99, *Florida Statutes*, or as authorized by *Florida Statutes*. The total leakage test is not required for ducts and air handlers located entirely within the thermal envelope.
- (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 (1-11) of the Commercial Provisions of the *Florida Building Code, Energy Conservation*.
- (3) For other electric storage volumes  $\geq 55$ , min. EF =  $2.057 - (0.00113 * \text{volume})$ .
- (4) For other natural gas storage volumes  $\geq 55$ , min. EF =  $0.8012 - (0.00078 * \text{volume})$ .

DEMONSTRATION PURPOSES ONLY

# Building Input Summary Report

PROJECT										
Title:	TAM Tampa House 2	Bedrooms:	3	Address Type:	Street Address					
Building Type:	User	Bathrooms:	0	Lot #						
Owner:		Conditioned Area:	2000 sq.ft.	Block/SubDivision:						
# of Units:	1	Total Stories:	1	PlatBook:						
Builder Name:		Worst Case:	No	Street:	12345 North 99th Street					
Permit Office:		Rotate Angle:	0	County:	Hillsborough					
Jurisdiction:		Cross Ventilation:		City, State, Zip:	Tampa , FL , 33614					
Family Type:	Single-family	Whole House Fan:								
New/Existing:	New (From Plans)	Terrain:	Suburban							
Year Construct:	2015	Shielding:	Suburban							
Comment:										
CLIMATE										
Design Location	Tmy Site	Design Temp 97.5 %	2.5 %	Int Design Temp Winter	Summer	Heating Degree Days	Design Moisture	Daily Temp Range		
FL, Tampa	FL_TAMPA_INTERNATIONAL_AP	39	91	70	75	645.5	54	Medium		
UTILITY RATES										
Fuel	Unit	Utility Name				Monthly Fixed Cost	\$/Unit			
Electricity	kWh	EnergyGauge Default				0	0.1188			
Natural Gas	Therm	EnergyGauge Default				0	1.72			
Fuel Oil	Gallon	EnergyGauge Default				0	1.1			
Propane	Gallon	EnergyGauge Default				0	1.4			
SURROUNDINGS										
Ornt	Type	Shade Trees			Adjacent Buildings					
		Height	Width	Distance	Exist	Height	Width	Distance		
N	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft		
NE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft		
E	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft		
SE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft		
S	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft		
SW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft		
W	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft		
NW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft		
BLOCKS										
Number	Name	Area	Volume							
1	Block1	2000	20000							
SPACES										
Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated	
1	Main	2000	20000	No	1	3	Yes	Yes	Yes	
FLOORS										
#	Floor Type	Space	Perimeter	R-Value	Area	Tile		Wood	Carpet	
1	Slab-On-Grade Edge Insulation	Main	180 ft	0	2000 ft²	----		0	0	1



# Building Input Summary Report

ROOF														
#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)			
1	Gable or shed	Composition shingles	2166 ft²	416 ft²	Medium	0.75	No	0.9	No	0	22.6			
ATTIC														
#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC								
1	Full attic	Vented	300	2000 ft²	N	N								
CEILING														
#	Ceiling Type	Space	R-Value	Area	Framing Fraction	Truss Type								
1	Under Attic ()	Main	38	2000 ft²	0.07	Wood								
WALLS														
Wall orientation below is as entered. Actual orientation is modified by rotate angle shown in "Project" section above.														
#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
1	N	Exterior	Concrete Block - Int Insul	Main	7.22	50	10	10	10	500.0 ft²		0	0.5	0
2	E	Exterior	Concrete Block - Int Insul	Main	7.22	40	10	10	10	400.0 ft²		0	0.75	0
3	S	Exterior	Concrete Block - Int Insul	Main	7.22	40	10	10	10	400.0 ft²		0	0.5	0
4	S	Exterior	Frame - Wood	Main	13	10	10	10	10	100.0 ft²		0.25	0.5	0
5	W	Exterior	Concrete Block - Int Insul	Main	7.22	40	10	10	10	400.0 ft²		0	0.5	0
DOORS														
#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area				
1	N	Wood	Main	None	.8	8		3		24 ft²				
WINDOWS														
#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Storm	Area	Overhang Depth	Overhang Separation	Interior Shade	Screening	
1	N	1	Metal	Double (Clear)	Yes	0.68	0.46	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
2	E	2	Vinyl	Low-E Double	Yes	0.27	0.17	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
3	S	3	Metal	Single (Clear)	Yes	1.2	0.8	N	15.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
4	S	4	Vinyl	Low-E Double	Yes	0.27	0.17	N	60.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
5	W	5	Vinyl	Low-E Double	Yes	0.27	0.17	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
6	W	Sky/lt	None	Double (Clear)	Yes	0.65	0.25	N	10.0 ft²	2 ft 0 in	0 ft 0 in	Drapes/blinds	None	
INFILTRATION														
#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50	Space(s)					
1	Wholehouse	Proposed ACH(50)	.000318	1666.7	91.5	172.08	.2383	5	All					
MASS														
Mass Type	Area	Thickness	Furniture Fraction	Space										
No Added Mass	0 ft²	0 ft	0.3	Main										

# Building Input Summary Report

HEATING SYSTEM															
#	System Type	Subtype	Efficiency	Capacity	-----Geothermal HeatPump-----				Ducts	Block					
					Entry	Power	Volt.	Curr							
1	Electric Heat Pump	None	HSPF:8.5	21 kBtu/hr	0	0	0		sys#1	1					
COOLING SYSTEM															
#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Ducts	Block							
1	Central Unit	None	SEER:14	21 kBtu/hr	630 cfm	0.75	sys#1	1							
HOT WATER SYSTEM															
#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Credits							
1	Electric	None	Main	0.95	50 gal	60 gal	120 deg	None							
SOLAR HOT WATER															
Collector Type	Collector Tilt	Surface Azimuth	Area	Absorp. Loss Coef.	Trans. Corr.	Tank Volume	Tank U-Value	Tank Surf Area	Heat Exch Eff	PV Pumped	Pump Energy				
DUCTS															
DUCT #	Location	Supply R-Value	Area	Return Location	Area	Number	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool	
1	Attic	8	400 ft²	Main	100 ft²	1	Proposed Qn	Main	--- cfm	--- cfm	0.04	0.00	1	1	
TEMPERATURES															
Programable Thermostat: N							Ceiling Fans: N								
Cooling	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input checked="" type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec			
Heating	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec			
Venting	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input checked="" type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec			
Thermostat Schedule: HERS 2006 Reference															
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12		
Cooling (WD)	AM PM	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	
Cooling (WEH)	AM PM	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	
Heating (WD)	AM PM	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	
Heating (WEH)	AM PM	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	

# Building Input Summary Report

<b>APPLIANCES &amp; LIGHTING</b>													
Appliance Schedule: HERS 2006 Reference		Hours											
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12
Ceiling Fans (Summer)	AM	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.33	0.33	0.33	0.33	0.33
% Released: 100	PM	0.33	0.33	0.33	0.33	0.33	1	0.9	0.9	0.9	0.9	0.9	0.65
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Clothes Washer	AM	0.105	0.081	0.046	0.046	0.081	0.128	0.256	0.57	0.849	1	0.977	0.872
% Released: 60	PM	0.779	0.698	0.605	0.57	0.581	0.57	0.57	0.57	0.57	0.488	0.43	0.198
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Dishwasher	AM	0.139	0.05	0.028	0.024	0.029	0.09	0.169	0.303	0.541	0.594	0.502	0.443
% Released: 60	PM	0.377	0.396	0.335	0.323	0.344	0.448	0.791	1	0.8	0.597	0.383	0.281
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Dryer	AM	0.2	0.1	0.05	0.05	0.05	0.075	0.2	0.375	0.5	0.8	0.95	1
% Released: 10	PM	0.875	0.85	0.8	0.625	0.625	0.6	0.575	0.55	0.625	0.7	0.65	0.375
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Lighting	AM	0.16	0.15	0.16	0.18	0.23	0.45	0.4	0.26	0.19	0.16	0.12	0.11
% Released: 90	PM	0.16	0.17	0.25	0.27	0.34	0.55	0.55	0.88	1	0.86	0.51	0.28
Annual Use: 2055 kWh/Yr		Peak Value: 671 Watts											
Miscellaneous	AM	0.48	0.47	0.47	0.47	0.47	0.47	0.64	0.71	0.67	0.61	0.55	0.53
% Released: 90	PM	0.52	0.5	0.5	0.5	0.59	0.73	0.79	0.99	1	0.96	0.77	0.55
Annual Use: 3364 kWh/Yr		Peak Value: 617 Watts											
Pool Pump	AM	0	0	0	0	0	0	0	0	0	1	1	1
% Released: 0	PM	1	1	1	1	0	0	0	0	0	0	0	0
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Range	AM	0.057	0.057	0.057	0.057	0.057	0.114	0.171	0.286	0.343	0.343	0.343	0.4
% Released: 100	PM	0.457	0.343	0.286	0.4	0.571	1	0.857	0.429	0.286	0.229	0.171	0.114
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Refrigeration	AM	0.85	0.78	0.75	0.73	0.73	0.73	0.75	0.75	0.8	0.8	0.8	0.8
% Released: 100	PM	0.88	0.85	0.85	0.83	0.88	0.95	1	0.98	0.95	0.93	0.9	0.85
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Well Pump	AM	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.1	0.1	0.1
% Released: 0	PM	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
<b>REFRIGERATORS</b>													
ID	Type	Screen	Location	Quantity	Vol	FrZ. Vol	Make	Model	Schedule	kWhPerYr			
1		Default New	Main	1									
<b>CLOTHES WASHERS</b>													
ID	Type	Screen	Location	Capacity	Make	Model	Schedule	LoadsPerYr					
1	1 Main	Default New	Main	2.847			HERS201	(invalid)					
<b>CLOTHES DRYERS</b>													
ID	Type	Screen	Location	Capacity	Fuel Type	Make	Model	Schedule	LoadsPerYr				
1	Dryers	Default New	Main		Electricity								

# Building Input Summary Report

<b>DISHWASHERS</b>										
ID	Type	Screen	Location	Capacity	Vintage	Make	Model	Schedule	kWhPerYr	
1	Dishwash	Default New	Main	12	2004 or N			HERS201	372	
<b>RANGE OVEN</b>										
ID	Type	Screen	Location	Type	Fueltype	Make	Model	Cooktop	Oven	
1	Ranges	Default New	Main	CooktopOven C	Electric			Electric FI	Not Conv	
<b>HARD WIRED LIGHTING</b>										
ID	Type	Screen	Location	Total#	Qualify#	Comp FI	All Other FL	txtBulbtype	Schedule	Watts per bulb
1	Hard-Wir	By Count - Qualify	Main	100	10	0	10			
2	Hard-Wir	Default New	Exterior							
3	Hard-Wir	Default New	Garage							
<b>MISC ELECTRICAL LOADS</b>										
ID	Type	Screen	Item	Quantity	Catagory	Operating	Location	Schedule	Off Standby	
1	Misc Elec	Simple Default		1		1	Main	HERS201	1	

# FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Total UA Method

Project Name: TAM Tampa House 3 Street: 12345 North 99th Street City, State, Zip: Tampa, FL 33614 Owner: Design Location: FL, Tampa	Builder Name: Permit Office: Permit Number: Jurisdiction:
---	--

1. New construction or existing	New (From Plans)	4. Number of Bedrooms	3
2. Single family or multiple family	Single-family	5. Conditioned floor area above grade (ft2)	2000
3. Number of units, if multiple family		6. Conditioned floor area below grade (ft2)	0

Proposed UA	
Windows	124.2
Doors	9.6
Walls	85.9
Floor	0.0
Ceiling	78.4
<b>Overall UA</b>	<b>298.1</b>

Baseline UA	
Windows	124.0
Doors	9.6
Walls	121.0
Floor	0.0
Ceiling	60.0
<b>Overall UA</b>	<b>314.6</b>

### Compliance Criteria

Overall UA	298.13	PASS	
Window-to-Floor Area	15.5%	N/A	
SHGC Area Weighted	0.278;0.250	FAIL	Max vertical SHGC is 0.25; max skylight SHGC is 0.3
Air Handler Location	Not attic	PASS	
Duct Insulation	6.000	PASS	
Duct leakage total	MUST	TEST	Duct leakage total must be tested as substantially leak free
Roof Reflectance	0.25	PASS	
Wall Area (ft2)	1476.0	WARNING	Wall area appears large - please check
Ceiling Area (ft2)	2000.0	PASS	
Floor Area (ft2)	2000.0	PASS	
Common Wall Mass R	N/A		There are no common mass walls in this building
Common Wall Frame R	N/A		There are no common frame walls in this building
Common Floor Low R	N/A		There are no common floors in this building
Common Ceiling Low R	N/A		There are no common ceilings in this building
Window Area (ft2)	310.0		
Door Area (ft2)	24.0		

Total UA Calculation Method - **FAIL**


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

PREPARED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Review of the 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 with Section 553.908 Florida Statutes.



BUILDING OFFICIAL: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Total UA Alternative Report – R402.1.4 Compliance

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS	INSTALLED VALUES
Air infiltration:	Blower door test is required on the building envelope to verify leakage $\leq 5$ ACH50; test report provided to code official.	Total leakage(ACH50) = 5.000 Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No PASS
Air distribution system <sup>1</sup> : Air handling unit Duct R-Value Air Leakage <sup>1</sup> : Duct test Ducts in conditioned space	Not allowed in attic Sealed R-value $\geq R-8$ (supply in attics) or $\geq R-6$ (all other duct locations).  Air handler installed: Total leakage $\leq 4$ cfm/100 s.f. Air handler Not installed: Total leakage $\leq 3$ cfm/100 s.f. Test not required if all ducts and AHU are in conditioned space.	Location: Main Sealed R-Value(Supply in unc. attic) = 8.0 R-Value(Others in unc. space) = 8.0  4.00 cfm/100 s.f. Test report required? YES Location: Unconditioned PASS PASS PASS PASS
Air conditioning systems: Central system $\leq 65,000$ Btu/h Room unit or PTAC Other:	Minimum federal standard required by NAECA <sup>2</sup> SEER=14.0 EER [from Table C403.2.3(3)] See Tables C403.2.3(1)-(11)	SEER(Min)=14 PASS
Heating systems: Heating Pump $\leq 65,000$ Btu/h Gas Furnace, non-weatherized Oil Furnace, non-weatherized Other:	Minimum federal standard required by NAECA <sup>2</sup> HSPF= 8.2 AFUE 78 % (AFUE 80% after Nov. 2015) AFUE 83%	HSPF(Min) = 8.5 Not Applicable Not Applicable PASS
Water heating system (storage type): Electric: <sup>3</sup> Gas fired: <sup>4</sup> Other (describe):	Minimum federal standard required by NAECA <sup>2</sup> 50 gallons: EF=0.945 40 gallons: EF=0.62, 50 gallons: EF=0.60	50 gallons: EF=0.95 Not Applicable PASS

NR = No requirement.

- (1) Ducts & AHU installed "substantially leak free" per Section R403.2.2. Test required by an energy rater certified in accordance with Section 553.99, *Florida Statutes*, or as authorized by *Florida Statutes*. The total leakage test is not required for ducts and air handlers located entirely within the thermal envelope.
- (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 (1-11) of the Commercial Provisions of the *Florida Building Code, Energy Conservation*.
- (3) For other electric storage volumes  $\geq 55$ , min. EF = 2.057 – (0.00113 \* volume).
- (4) For other natural gas storage volumes  $\geq 55$ , min. EF = 0.8012 – (0.00078 \* volume).

DEMONSTRATION PURPOSES ONLY

# Building Input Summary Report

PROJECT											
Title:	TAM Tampa House 3	Bedrooms:	3	Address Type:	Street Address						
Building Type:	User	Bathrooms:	0	Lot #							
Owner:		Conditioned Area:	2000 sq.ft.	Block/SubDivision:							
# of Units:	1	Total Stories:	1	PlatBook:							
Builder Name:		Worst Case:	No	Street:	12345 North 99th Street						
Permit Office:		Rotate Angle:	0	County:	hillsborough						
Jurisdiction:		Cross Ventilation:		City, State, Zip:	Tampa , FL , 33614						
Family Type:	Single-family	Whole House Fan:									
New/Existing:	New (From Plans)	Terrain:	Suburban								
Year Construct:	2015	Shielding:	Suburban								
Comment:											
CLIMATE											
Design Location	Tmy Site	Design Temp 97.5 %	2.5 %	Int Design Temp Winter	Summer	Heating Degree Days	Design Moisture	Daily Temp Range			
FL, Tampa	FL_TAMPA_INTERNATIONAL_AP	39	91	70	75	645.5	54	Medium			
UTILITY RATES											
Fuel	Unit	Utility Name					Monthly Fixed Cost	\$/Unit			
Electricity	kWh	EnergyGauge Default					0	0.1188			
Natural Gas	Therm	EnergyGauge Default					0	1.72			
Fuel Oil	Gallon	EnergyGauge Default					0	1.1			
Propane	Gallon	EnergyGauge Default					0	1.4			
SURROUNDINGS											
Ornt	Type	Shade Trees			Adjacent Buildings						
		Height	Width	Distance	Exist	Height	Width	Distance			
N	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
NE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
E	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
SE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
S	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
SW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
W	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
NW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft			
BLOCKS											
Number	Name	Area	Volume								
1	Block1	2000	20000								
SPACES											
Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated		
1	Main	2000	20000	No	1	3	Yes	Yes	Yes		
FLOORS											
#	Floor Type	Space	Perimeter	R-Value	Area	Tile		Wood	Carpet		
1	Slab-On-Grade Edge Insulation	Main	180 ft	0	2000 ft²	----		0	0	1	

# Building Input Summary Report

ROOF														
#	Type	Materials		Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)		
1	Gable or shed	Composition shingles		2166 ft²	416 ft²	Medium	0.75	No	0.9	No	0	22.6		
ATTIC														
#	Type	Ventilation		Vent Ratio (1 in)		Area	RBS	IRCC						
1	Full attic	Vented		300		2000 ft²	N	N						
CEILING														
#	Ceiling Type	Space		R-Value	Area	Framing Fraction		Truss Type						
1	Under Attic ()	Main		30	2000 ft²	0.07		Wood						
WALLS														
Wall orientation below is as entered. Actual orientation is modified by rotate angle shown in "Project" section above.														
#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
1	N	Exterior	Frame - Wood	Main	13	50	10	500.0 ft²	5	0.25	0.5	0		
2	E	Exterior	Frame - Wood	Main	13	40	10	400.0 ft²	5	0.25	0.5	0		
3	S	Exterior	Frame - Wood	Main	13	40	10	400.0 ft²	5	0.25	0.5	0		
4	S	Exterior	Frame - Wood	Main	13	10	10	100.0 ft²	5	0.25	0.5	0		
5	W	Exterior	Frame - Wood	Main	13	40	10	400.0 ft²	5	0.25	0.5	0		
DOORS														
#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area				
1	N	Wood	Main	None	.4	8	3	24 ft²						
WINDOWS														
#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Storm	Area	Overhang Depth	Separation	Interior Shade	Screening	
1	N	1	Vinyl	Low-E Double	Yes	0.35	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
2	E	2	Vinyl	Low-E Double	Yes	0.35	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
3	S	3	Metal	Single (Clear)	Yes	1.2	0.8	N	15.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
4	S	4	Vinyl	Low-E Double	Yes	0.35	0.25	N	60.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
5	W	5	Vinyl	Low-E Double	Yes	0.35	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None	
6	W	Sky/lt	None	Double (Clear)	Yes	0.65	0.25	N	10.0 ft²	2 ft 0 in	0 ft 0 in	Drapes/blinds	None	
INFILTRATION														
#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50	Space(s)					
1	Wholehouse	Proposed ACH(50)	.000318	1666.7	91.5	172.08	.2383	5	All					
MASS														
Mass Type			Area	Thickness	Furniture Fraction		Space							
No Added Mass			0 ft²	0 ft	0.3		Main							



# Building Input Summary Report

HEATING SYSTEM														
#	System Type	Subtype		Efficiency	Capacity	-----Geothermal HeatPump-----				Ducts	Block			
						Entry	Power	Volt.	Curr					
1	Electric Heat Pump	None		HSPF:8.5	21 kBtu/hr	0	0	0	0	sys#1	1			
COOLING SYSTEM														
#	System Type	Subtype		Efficiency	Capacity	Air Flow	SHR	Ducts	Block					
1	Central Unit	None		SEER:14	21 kBtu/hr	630 cfm	0.75	sys#1	1					
HOT WATER SYSTEM														
#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Credits						
1	Electric	None	Main	0.95	50 gal	60 gal	120 deg	None						
SOLAR HOT WATER														
Collector Type	Collector Tilt	Surface Azimuth	Area	Absorp. Loss Coef.	Trans. Corr.	Tank Volume	Tank U-Value	Tank Surf Area	Heat Exch Eff	PV Pumped	Pump Energy			
DUCTS														
DUCT #	Location	----- Supply -----		----- Return -----			Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC #	
		R-Value	Area	Location	Area	Number							Heat	Cool
1	Attic	8	400 ft²	Main	100 ft²	1	Proposed Qn	Main	--- cfm	--- cfm	0.04	0.00	1	1
TEMPERATURES														
Programable Thermostat: N					Ceiling Fans: N									
Cooling	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input checked="" type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec		
Heating	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec		
Venting	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input checked="" type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec		
Thermostat Schedule: HERS 2006 Reference														
Schedule Type		Hours												
		1	2	3	4	5	6	7	8	9	10	11	12	
Cooling (WD)	AM	78	78	78	78	78	78	78	78	78	78	78	78	
	PM	78	78	78	78	78	78	78	78	78	78	78	78	
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78	
	PM	78	78	78	78	78	78	78	78	78	78	78	78	
Heating (WD)	AM	68	68	68	68	68	68	68	68	68	68	68	68	
	PM	68	68	68	68	68	68	68	68	68	68	68	68	
Heating (WEH)	AM	68	68	68	68	68	68	68	68	68	68	68	68	
	PM	68	68	68	68	68	68	68	68	68	68	68	68	

# Building Input Summary Report

APPLIANCES & LIGHTING													
Appliance Schedule: HERS 2006 Reference		Hours											
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12
Ceiling Fans (Summer)	AM	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.33	0.33	0.33	0.33	0.33
% Released: 100	PM	0.33	0.33	0.33	0.33	0.33	1	0.9	0.9	0.9	0.9	0.9	0.65
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Clothes Washer	AM	0.105	0.081	0.046	0.046	0.081	0.128	0.256	0.57	0.849	1	0.977	0.872
% Released: 60	PM	0.779	0.698	0.605	0.57	0.581	0.57	0.57	0.57	0.57	0.488	0.43	0.198
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Dishwasher	AM	0.139	0.05	0.028	0.024	0.029	0.09	0.169	0.303	0.541	0.594	0.502	0.443
% Released: 60	PM	0.377	0.396	0.335	0.323	0.344	0.448	0.791	1	0.8	0.597	0.383	0.281
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Dryer	AM	0.2	0.1	0.05	0.05	0.05	0.075	0.2	0.375	0.5	0.8	0.95	1
% Released: 10	PM	0.875	0.85	0.8	0.625	0.625	0.6	0.575	0.55	0.625	0.7	0.65	0.375
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Lighting	AM	0.16	0.15	0.16	0.18	0.23	0.45	0.4	0.26	0.19	0.16	0.12	0.11
% Released: 90	PM	0.16	0.17	0.25	0.27	0.34	0.55	0.55	0.88	1	0.86	0.51	0.28
Annual Use: 2055 kWh/Yr		Peak Value: 671 Watts											
Miscellaneous	AM	0.48	0.47	0.47	0.47	0.47	0.47	0.64	0.71	0.67	0.61	0.55	0.53
% Released: 90	PM	0.52	0.5	0.5	0.5	0.59	0.73	0.79	0.99	1	0.96	0.77	0.55
Annual Use: 3364 kWh/Yr		Peak Value: 617 Watts											
Pool Pump	AM	0	0	0	0	0	0	0	0	0	1	1	1
% Released: 0	PM	1	1	1	1	0	0	0	0	0	0	0	0
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Range	AM	0.057	0.057	0.057	0.057	0.057	0.114	0.171	0.286	0.343	0.343	0.343	0.4
% Released: 100	PM	0.457	0.343	0.286	0.4	0.571	1	0.857	0.429	0.286	0.229	0.171	0.114
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Refrigeration	AM	0.85	0.78	0.75	0.73	0.73	0.73	0.75	0.75	0.8	0.8	0.8	0.8
% Released: 100	PM	0.88	0.85	0.85	0.83	0.88	0.95	1	0.98	0.95	0.93	0.9	0.85
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
Well Pump	AM	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.1	0.1	0.1
% Released: 0	PM	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts											
REFRIGERATORS													
ID	Type	Screen	Location	Quantity	Vol	FrZ. Vol	Make	Model	Schedule	kWhPerYr			
1		Default New	Main	1									
CLOTHES WASHERS													
ID	Type	Screen	Location	Capacity	Make	Model	Schedule	LoadsPerYr					
1	1 Main	Default New	Main	2.847			HERS201	(invalid)					
CLOTHES DRYERS													
ID	Type	Screen	Location	Capacity	Fuel Type	Make	Model	Schedule	LoadsPerYr				
1	Dryers	Default New	Main		Electricity								

# Building Input Summary Report

DISHWASHERS										
ID	Type	Screen	Location	Capacity	Vintage	Make	Model	Schedule	kWhPerYr	
1	Dishwash	Default New	Main	12	2004 or N			HERS201	372	
RANGE OVEN										
ID	Type	Screen	Location	Type	Fueltype	Make	Model	Cooktop	Oven	
1	Ranges	Default New	Main	CooktopOven C	Electric			Electric FI	Not Conv	
HARD WIRED LIGHTING										
ID	Type	Screen	Location	Total#	Qualify#	Comp FI	All Other FL	txtBulbtype	Schedule	Watts per bulb
1	Hard-Wir	By Count - Qualify	Main	100	10	0	10			
2	Hard-Wir	Default New	Exterior							
3	Hard-Wir	Default New	Garage							
MISC ELECTRICAL LOADS										
ID	Type	Screen	Item	Quantity	Catagory	Operating	Location	Schedule	Off Standby	
1	Misc Elec	Simple Default		1		1	Main	HERS201	1	

# Building Input Summary Report

PROJECT									
Title:	TAM Miami House 1	Bedrooms:	3	Address Type:	Street Address				
Building Type:	User	Bathrooms:	0	Lot #					
Owner:		Conditioned Area:	2000 sq.ft.	Block/SubDivision:					
# of Units:	1	Total Stories:	1	PlatBook:					
Builder Name:		Worst Case:	No	Street:	12345 North 99th Street				
Permit Office:		Rotate Angle:	0	County:	Miami-Dade				
Jurisdiction:		Cross Ventilation:		City, State, Zip:	Miami ,				
Family Type:	Single-family	Whole House Fan:			FL , 33125				
New/Existing:	New (From Plans)	Terrain:	Suburban						
Year Construct:	2015	Shielding:	Suburban						
Comment:									
CLIMATE									
Design Location	Tmy Site	Design Temp 97.5 %	2.5 %	Int Design Temp Winter	Summer	Heating Degree Days	Design Moisture	Daily Temp Range	
FL, Miami	FL_MIAMI_INTL_AP	51	90	70	75	149.5	56	Low	
UTILITY RATES									
Fuel	Unit	Utility Name				Monthly Fixed Cost	\$/Unit		
Electricity	kWh	EnergyGauge Default				0	0.1188		
Natural Gas	Therm	EnergyGauge Default				0	1.72		
Fuel Oil	Gallon	EnergyGauge Default				0	1.1		
Propane	Gallon	EnergyGauge Default				0	1.4		
SURROUNDINGS									
Ornt	Type	Shade Trees			Adjacent Buildings				
		Height	Width	Distance	Exist	Height	Width	Distance	
N	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
NE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
E	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
SE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
S	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
SW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
W	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
NW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
BLOCKS									
Number	Name	Area	Volume						
1	Block1	2722	22166						
SPACES									
Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated
1	Main	2000	20000	No	1	3	Yes	Yes	Yes
2	Attic	722	2166	No	0	0	Yes	No	No

# Building Input Summary Report

FLOORS														
#	Floor Type	Space	Perimeter	R-Value	Area	Tile	Wood	Carpet						
1	Slab-On-Grade Edge Insulation	Main	180 ft	0	2000 ft <sup>2</sup>	----	0	0	1					
ROOF														
#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt Tested	Deck Insul.	Pitch (deg)				
1	Gable or shed	Composition shingles	2166 ft <sup>2</sup>	416 ft <sup>2</sup>	Medium	0.75	No	0.9	No	0	22.6			
ATTIC														
#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC								
1	Full attic	Vented	300	2000 ft <sup>2</sup>	N	N								
CEILING														
#	Ceiling Type	Space	R-Value	Area	Framing Fraction	Truss Type								
1	Under Attic ()	Main	38	2000 ft <sup>2</sup>	0.07	Wood								
WALLS														
Wall orientation below is as entered. Actual orientation is modified by rotate angle shown in "Project" section above.														
#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
1	N	Exterior	Concrete Block - Int Insul	Main	5.22	50		10		500.0 ft <sup>2</sup>		0	0.5	0
2	E	Exterior	Concrete Block - Int Insul	Main	5.22	40		10		400.0 ft <sup>2</sup>		0	0.75	0
3	S	Exterior	Concrete Block - Int Insul	Main	5.22	40		10		400.0 ft <sup>2</sup>		0	0.5	0
4	S	Exterior	Frame - Wood	Main	13	10		10		100.0 ft <sup>2</sup>		0.25	0.5	0
5	W	Exterior	Concrete Block - Int Insul	Main	5.22	40		10		400.0 ft <sup>2</sup>		0	0.5	0
DOORS														
#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area				
1	N	Wood	Main	None	.65	8		3		24 ft <sup>2</sup>				

# Building Input Summary Report

WINDOWS													
#	Ornt	Wall		Panels	NFRC	U-Factor	SHGC	Storm	Area	Overhang		Interior Shade	Screening
		ID	Frame							Depth	Separation		
1	N	1	Vinyl	Low-E Double	Yes	0.65	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
2	E	2	Vinyl	Low-E Double	Yes	0.65	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
3	S	3	Vinyl	Low-E Double	Yes	0.65	0.25	N	15.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
4	S	4	Vinyl	Low-E Double	Yes	0.65	0.25	N	60.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
5	W	5	Vinyl	Low-E Double	Yes	0.65	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
6	W	Skylt	None	Double (Clear)	Yes	0.75	0.25	N	10.0 ft²	2 ft 0 in	0 ft 0 in	Drapes/blinds	None
INFILTRATION													
#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50	Space(s)				
1	Wholehouse	Proposed ACH(50)	.000318	1666.7	91.5	172.08	.2192	5	All				
MASS													
Mass Type			Area	Thickness	Furniture Fraction			Space					
No Added Mass			0 ft²	0 ft	0.3			Main					
No Added Mass			0 ft²	0 ft	0.3			Attic					
HEATING SYSTEM													
#	System Type	Subtype	Efficiency	Capacity	-----Geothermal HeatPump-----			Ducts	Block				
					Entry	Power	Volt.	Curr					
1	Electric Heat Pump	None	HSPF:8.2	21 kBtu/hr	0	0	0	sys#1	1				
COOLING SYSTEM													
#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Ducts	Block					
1	Central Unit	None	SEER:14	21 kBtu/hr	630 cfm	0.75	sys#1	1					
HOT WATER SYSTEM													
#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Credits					
1	Electric	None	Main	0.95	50 gal	60 gal	120 deg	None					
SOLAR HOT WATER													
Collector Type	Collector Tilt	Azimuth	Surface Area	Absorp. Loss Coef.	Trans. Prod.	Tank Corr.	Tank Volume	Tank U-Value	Tank Surf Area	Heat Exch Eff	PV Pumped	Pump Energy	
DUCTS													
DUCT #	Location	Supply R-Value	Area	Return Location	Area	Number	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat Cool
1	Attic	8	400 ft²	Main	100 ft²	1	Proposed Qn	Main	--- cfm	--- cfm	0.04	0.00	1 1

# Building Input Summary Report

TEMPERATURES														
Programable Thermostat: N				Ceiling Fans: N										
Cooling	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input checked="" type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec		
Heating	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec		
Venting	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec		
Thermostat Schedule: HERS 2006 Reference														
Hours														
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12	
Cooling (WD)	AM	78	78	78	78	78	78	78	78	78	78	78	78	
	PM	78	78	78	78	78	78	78	78	78	78	78	78	
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78	
	PM	78	78	78	78	78	78	78	78	78	78	78	78	
Heating (WD)	AM	68	68	68	68	68	68	68	68	68	68	68	68	
	PM	68	68	68	68	68	68	68	68	68	68	68	68	
Heating (WEH)	AM	68	68	68	68	68	68	68	68	68	68	68	68	
	PM	68	68	68	68	68	68	68	68	68	68	68	68	
APPLIANCES & LIGHTING														
Appliance Schedule: HERS 2006 Reference														
Hours														
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12	
Ceiling Fans (Summer)	AM	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.33	0.33	0.33	0.33	0.33	
% Released: 100	PM	0.33	0.33	0.33	0.33	0.33	1	0.9	0.9	0.9	0.9	0.9	0.65	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Clothes Washer	AM	0.105	0.081	0.046	0.046	0.081	0.128	0.256	0.57	0.849	1	0.977	0.872	
% Released: 60	PM	0.779	0.698	0.605	0.57	0.581	0.57	0.57	0.57	0.57	0.488	0.43	0.198	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Dishwasher	AM	0.139	0.05	0.028	0.024	0.029	0.09	0.169	0.303	0.541	0.594	0.502	0.443	
% Released: 60	PM	0.377	0.396	0.335	0.323	0.344	0.448	0.791	1	0.8	0.597	0.383	0.281	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Dryer	AM	0.2	0.1	0.05	0.05	0.05	0.075	0.2	0.375	0.5	0.8	0.95	1	
% Released: 10	PM	0.875	0.85	0.8	0.625	0.625	0.6	0.575	0.55	0.625	0.7	0.65	0.375	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Lighting	AM	0.16	0.15	0.16	0.18	0.23	0.45	0.4	0.26	0.19	0.16	0.12	0.11	
% Released: 90	PM	0.16	0.17	0.25	0.27	0.34	0.55	0.55	0.88	1	0.86	0.51	0.28	
Annual Use: 2633 kWh/Yr		Peak Value: 860 Watts												
Miscellaneous	AM	0.48	0.47	0.47	0.47	0.47	0.47	0.64	0.71	0.67	0.61	0.55	0.53	
% Released: 90	PM	0.52	0.5	0.5	0.5	0.59	0.73	0.79	0.99	1	0.96	0.77	0.55	
Annual Use: 4764 kWh/Yr		Peak Value: 874 Watts												
Pool Pump	AM	0	0	0	0	0	0	0	0	0	1	1	1	
% Released: 0	PM	1	1	1	1	0	0	0	0	0	0	0	0	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Range	AM	0.057	0.057	0.057	0.057	0.057	0.114	0.171	0.286	0.343	0.343	0.343	0.4	
% Released: 100	PM	0.457	0.343	0.286	0.4	0.571	1	0.857	0.429	0.286	0.229	0.171	0.114	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Refrigeration	AM	0.85	0.78	0.75	0.73	0.73	0.73	0.75	0.75	0.8	0.8	0.8	0.8	
% Released: 100	PM	0.88	0.85	0.85	0.83	0.88	0.95	1	0.98	0.95	0.93	0.9	0.85	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Well Pump	AM	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.1	0.1	0.1	
% Released: 0	PM	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												

# Building Input Summary Report

REFRIGERATORS										
ID	Type	Screen	Location	Quantity	Vol	FrZ. Vol	Make	Model	Schedule	kWhPerYr
1		Default New	Main	1						
CLOTHES WASHERS										
ID	Type	Screen	Location	Capacity			Make	Model	Schedule	LoadsPerYr
1	1 Main	Default New	Main	2.847					HERS201	(invalid)
CLOTHES DRYERS										
ID	Type	Screen	Location	Capacity	Fuel Type		Make	Model	Schedule	LoadsPerYr
1	Dryers	Default New	Main		Electricity					
DISHWASHERS										
ID	Type	Screen	Location	Capacity	Vintage		Make	Model	Schedule	kWhPerYr
1	Dishwash	Default New	Main	12	2004 or N				HERS201	372
RANGE OVEN										
ID	Type	Screen	Location	Type	Fueltype		Make	Model	Cooktop	Oven
1	Ranges	Default New	Main	CooktopOven C	Electric				Electric FI	Not Conv
HARD WIRED LIGHTING										
ID	Type	Screen	Location	Total#	Qualify#	Comp FI	All Other FL	txtBulbtype	Schedule	Watts per bulb
1	Hard-Wir	By Count - Qualify	Main	100	10	0	10			
2	Hard-Wir	Default New	Exterior							
3	Hard-Wir	Default New	Garage							
MISC ELECTRICAL LOADS										
ID	Type	Screen	Item	Quantity	Catagory	Operating	Location	Schedule	Off Standby	
1	Misc Elec	Simple Default		1		1	Main	HERS201	1	



# FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Total UA Method

Project Name: TAM Miami House 1 Street: 12345 North 99th Street City, State, Zip: Miami, FL 33125 Owner: Design Location: FL, Miami	Builder Name: Permit Office: Permit Number: Jurisdiction:
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1. New construction or existing	New (From Plans)	4. Number of Bedrooms	3
2. Single family or multiple family	Single-family	5. Conditioned floor area above grade (ft2)	2000
3. Number of units, if multiple family		6. Conditioned floor area below grade (ft2)	0

Proposed UA	
Windows	202.5
Doors	15.6
Walls	187.1
Floor	0.0
Ceiling	69.1
<b>Overall UA</b>	<b>474.2</b>

Baseline UA	
Windows	155.0
Doors	12.0
Walls	247.4
Floor	0.0
Ceiling	70.0
<b>Overall UA</b>	<b>484.4</b>

### Compliance Criteria

Overall UA	474.23	PASS	
Window-to-Floor Area	15.5%	N/A	
SHGC Area Weighted	0.250;0.250	PASS	
Air Handler Location	Not attic	PASS	
Duct Insulation	6.000	PASS	
Duct leakage total	MUST	TEST	Duct leakage total must be tested as substantially leak free
Roof Reflectance	0.25	PASS	
Wall Area (ft2)	1476.0	WARNING	Wall area appears large - please check
Ceiling Area (ft2)	2000.0	PASS	
Floor Area (ft2)	2000.0	PASS	
Common Wall Mass R	N/A		There are no common mass walls in this building
Common Wall Frame R	N/A		There are no common frame walls in this building
Common Floor Low R	N/A		There are no common floors in this building
Common Ceiling Low R	N/A		There are no common ceilings in this building
Window Area (ft2)	310.0		
Door Area (ft2)	24.0		

User entry meets requirements of Total UA Calculation Method.


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

PREPARED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Review of the 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 with Section 553.908 Florida Statutes.



BUILDING OFFICIAL: \_\_\_\_\_  
 DATE: \_\_\_\_\_

## Total UA Alternative Report – R402.1.4 Compliance

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS	INSTALLED VALUES
Air infiltration:	Blower door test is required on the building envelope to verify leakage $\leq$ 5 ACH50; test report provided to code official.	Total leakage(ACH50) = 5.000 Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No PASS
Air distribution system <sup>1</sup> :		
Air handling unit	Not allowed in attic Sealed	Location: Main Sealed PASS PASS
Duct R-Value	R-value $\geq$ R-8 (supply in attics) or $\geq$ R-6 (all other duct locations).	R-Value(Supply in unc. attic) = 8.0 R-Value(Others in unc. space) = 8.0 PASS PASS
Air Leakage <sup>1</sup> :		
Duct test	Air handler installed: Total leakage $\leq$ 4 cfm/100 s.f. Air handler Not installed: Total leakage $\leq$ 3 cfm/100 s.f.	4.00 cfm/100 s.f. Test report required? YES PASS
Ducts in conditioned space	Test not required if all ducts and AHU are in conditioned space.	Location: Unconditioned
Air conditioning systems:	Minimum federal standard required by NAECA <sup>2</sup>	
Central system $\leq$ 65,000 Btu/h	SEER=14.0 EER [from Table C403.2.3(3)]	SEER(Min)=14 PASS
Room unit or PTAC	See Tables C403.2.3(1)-(11)	
Other:		
Heating systems:	Minimum federal standard required by NAECA <sup>2</sup>	
Heating Pump $\leq$ 65,000 Btu/h	HSPF= 8.2	HSPF(Min) = 8.2 PASS
Gas Furnace, non-weatherized	AFUE 78 % (AFUE 80% after Nov. 2015)	Not Applicable
Oil Furnace, non-weatherized	AFUE 83%	Not Applicable
Other:		
Water heating system (storage type):	Minimum federal standard required by NAECA <sup>2</sup>	
Electric: <sup>3</sup>	50 gallons: EF=0.945	50 gallons: EF=0.95 PASS
Gas fired: <sup>4</sup>	40 gallons: EF=0.62, 50 gallons: EF=0.60	Not Applicable
Other (describe):		

NR = No requirement.

- (1) Ducts & AHU installed "substantially leak free" per Section R403.2.2. Test required by an energy rater certified in accordance with Section 553.99, *Florida Statutes*, or as authorized by *Florida Statutes*. The total leakage test is not required for ducts and air handlers located entirely within the thermal envelope.
- (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 (1-11) of the Commercial Provisions of the *Florida Building Code, Energy Conservation*.
- (3) For other electric storage volumes  $\geq$  55, min. EF = 2.057 – (0.00113 \* volume).
- (4) For other natural gas storage volumes  $\geq$  55, min. EF = 0.8012 – (0.00078 \* volume).

# FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Total UA Method

Project Name: TAM Miami House 2 Street: 12345 North 99th Street City, State, Zip: Miami, FL 33125 Owner: Design Location: FL, Miami	Builder Name: Permit Office: Permit Number: Jurisdiction:
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1. New construction or existing	New (From Plans)	4. Number of Bedrooms	3
2. Single family or multiple family	Single-family	5. Conditioned floor area above grade (ft2)	2000
3. Number of units, if multiple family		6. Conditioned floor area below grade (ft2)	0

Proposed UA	
Windows	232.5
Doors	15.6
Walls	229.0
Floor	98.0
Ceiling	69.1
<b>Overall UA</b>	<b>644.2</b>

Baseline UA	
Windows	155.0
Doors	12.0
Walls	121.0
Floor	128.0
Ceiling	70.0
<b>Overall UA</b>	<b>486.0</b>

### Compliance Criteria

Overall UA	644.22	FAIL	Overall 'Submitted UA' must be <= Overall 'Baseline UA'
Window-to-Floor Area	15.5%	N/A	
SHGC Area Weighted	0.250;0.250	PASS	
Air Handler Location	Not attic	PASS	
Duct Insulation	6.000	PASS	
Duct leakage total	MUST	TEST	Duct leakage total must be tested as substantially leak free
Roof Reflectance	0.25	PASS	
Wall Area (ft2)	1476.0	WARNING	Wall area appears large - please check
Ceiling Area (ft2)	2000.0	PASS	
Floor Area (ft2)	2000.0	PASS	
Common Wall Mass R	N/A		There are no common mass walls in this building
Common Wall Frame R	N/A		There are no common frame walls in this building
Common Floor Low R	N/A		There are no common floors in this building
Common Ceiling Low R	N/A		There are no common ceilings in this building
Window Area (ft2)	310.0		
Door Area (ft2)	24.0		

Total UA Calculation Method - **FAIL**


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

PREPARED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Review of the 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 with Section 553.908 Florida Statutes.



BUILDING OFFICIAL: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Total UA Alternative Report – R402.1.4 Compliance

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS	INSTALLED VALUES
Air infiltration:	Blower door test is required on the building envelope to verify leakage $\leq$ 5 ACH50; test report provided to code official.	Total leakage(ACH50) = 5.000 Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No PASS
Air distribution system <sup>1</sup> : Air handling unit Duct R-Value Air Leakage <sup>1</sup> : Duct test Ducts in conditioned space	Not allowed in attic Sealed R-value $\geq$ R-8 (supply in attics) or $\geq$ R-6 (all other duct locations).  Air handler installed: Total leakage $\leq$ 4 cfm/100 s.f. Air handler Not installed: Total leakage $\leq$ 3 cfm/100 s.f. Test not required if all ducts and AHU are in conditioned space.	Location: Main Sealed R-Value(Supply in unc. attic) = 8.0 R-Value(Others in unc. space) = 8.0  4.00 cfm/100 s.f. Test report required? YES Location: Unconditioned PASS PASS PASS PASS
Air conditioning systems: Central system $\leq$ 65,000 Btu/h Room unit or PTAC Other:	Minimum federal standard required by NAECA <sup>2</sup> SEER=14.0 EER [from Table C403.2.3(3)] See Tables C403.2.3(1)-(11)	SEER(Min)=14 PASS
Heating systems: Heating Pump $\leq$ 65,000 Btu/h Gas Furnace, non-weatherized Oil Furnace, non-weatherized Other:	Minimum federal standard required by NAECA <sup>2</sup> HSPF= 8.2 AFUE 78 % (AFUE 80% after Nov. 2015) AFUE 83%	HSPF(Min) = 8.2 Not Applicable Not Applicable PASS
Water heating system (storage type): Electric: <sup>3</sup> Gas fired: <sup>4</sup> Other (describe):	Minimum federal standard required by NAECA <sup>2</sup> 50 gallons: EF=0.945 40 gallons: EF=0.62, 50 gallons: EF=0.60	50 gallons: EF=0.95 Not Applicable PASS

NR = No requirement.

- (1) Ducts & AHU installed "substantially leak free" per Section R403.2.2. Test required by an energy rater certified in accordance with Section 553.99, *Florida Statutes*, or as authorized by *Florida Statutes*. The total leakage test is not required for ducts and air handlers located entirely within the thermal envelope.
- (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 (1-11) of the Commercial Provisions of the *Florida Building Code, Energy Conservation*.
- (3) For other electric storage volumes  $\geq$  55, min. EF = 2.057 – (0.00113 \* volume).
- (4) For other natural gas storage volumes  $\geq$  55, min. EF = 0.8012 – (0.00078 \* volume).

DEMONSTRATION PURPOSES ONLY

# Building Input Summary Report

PROJECT									
Title:	TAM Miami House 2	Bedrooms:	3	Address Type:	Street Address				
Building Type:	User	Bathrooms:	0	Lot #					
Owner:		Conditioned Area:	2000 sq.ft.	Block/SubDivision:					
# of Units:	1	Total Stories:	1	PlatBook:					
Builder Name:		Worst Case:	No	Street:	12345 North 99th Street				
Permit Office:		Rotate Angle:	0	County:	Miami-Dade				
Jurisdiction:		Cross Ventilation:		City, State, Zip:	Miami ,				
Family Type:	Single-family	Whole House Fan:			FL , 33125				
New/Existing:	New (From Plans)	Terrain:	Suburban						
Year Construct:	2015	Shielding:	Suburban						
Comment:									
CLIMATE									
Design Location	Tmy Site	Design Temp 97.5 %	2.5 %	Int Design Temp Winter	Summer	Heating Degree Days	Design Moisture	Daily Temp Range	
FL, Miami	FL_MIAMI_INTL_AP	51	90	70	75	149.5	56	Low	
UTILITY RATES									
Fuel	Unit	Utility Name				Monthly Fixed Cost	\$/Unit		
Electricity	kWh	EnergyGauge Default				0	0.1188		
Natural Gas	Therm	EnergyGauge Default				0	1.72		
Fuel Oil	Gallon	EnergyGauge Default				0	1.1		
Propane	Gallon	EnergyGauge Default				0	1.4		
SURROUNDINGS									
Ornt	Type	Shade Trees			Adjacent Buildings				
		Height	Width	Distance	Exist	Height	Width	Distance	
N	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
NE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
E	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
SE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
S	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
SW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
W	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
NW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
BLOCKS									
Number	Name	Area	Volume						
1	Block1	2722	22166						
SPACES									
Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated
1	Main	2000	20000	No	1	3	Yes	Yes	Yes
2	Attic	722	2166	No	0	0	Yes	No	No

# Building Input Summary Report

FLOORS														
#	Floor Type	Space	R-Value	Area	Tile	Wood	Carpet							
1	Raised Floor	Main	----	2000 ft <sup>2</sup>	19	0	0	1						
ROOF														
#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt Tested	Deck Insul.	Pitch (deg)				
1	Gable or shed	Composition shingles	2166 ft <sup>2</sup>	416 ft <sup>2</sup>	Medium	0.75	No	0.9	No	0	22.6			
ATTIC														
#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC								
1	Full attic	Vented	300	2000 ft <sup>2</sup>	N	N								
CEILING														
#	Ceiling Type	Space	R-Value	Area	Framing Fraction	Truss Type								
1	Under Attic ()	Main	38	2000 ft <sup>2</sup>	0.07	Wood								
WALLS														
Wall orientation below is as entered. Actual orientation is modified by rotate angle shown in "Project" section above.														
#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
1	N	Exterior	Frame - Steel	Main	13	50		10		500.0 ft <sup>2</sup>	0.125	0.5	0	
2	E	Exterior	Frame - Steel	Main	13	40		10		400.0 ft <sup>2</sup>	0.125	0.75	0	
3	S	Exterior	Frame - Steel	Main	13	40		10		400.0 ft <sup>2</sup>	0.125	0.5	0	
4	S	Exterior	Frame - Wood	Main	13	10		10		100.0 ft <sup>2</sup>	0.25	0.5	0	
5	W	Exterior	Frame - Steel	Main	13	40		10		400.0 ft <sup>2</sup>	0.125	0.5	0	
DOORS														
#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area				
1	N	Wood	Main	None	.65	8		3		24 ft <sup>2</sup>				

# Building Input Summary Report

WINDOWS													
#	Ornt	Wall		Panels	NFRC	U-Factor	SHGC	Storm	Area	Overhang		Interior Shade	Screening
		ID	Frame							Depth	Separation		
1	N	1	Vinyl	Low-E Double	Yes	0.75	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
2	E	2	Vinyl	Low-E Double	Yes	0.75	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
3	S	3	Vinyl	Low-E Double	Yes	0.75	0.25	N	15.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
4	S	4	Vinyl	Low-E Double	Yes	0.75	0.25	N	60.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
5	W	5	Vinyl	Low-E Double	Yes	0.75	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
6	W	Skylt	None	Double (Clear)	Yes	0.75	0.25	N	10.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None

INFILTRATION										
#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50	Space(s)	
1	Wholehouse	Proposed ACH(50)	.000318	1666.7	91.5	172.08	.2192	5	All	

MASS				
Mass Type	Area	Thickness	Furniture Fraction	Space
No Added Mass	0 ft²	0 ft	0.3	Main
No Added Mass	0 ft²	0 ft	0.3	Attic

HEATING SYSTEM										
#	System Type	Subtype	Efficiency	Capacity	-----Geothermal HeatPump-----			Ducts	Block	
					Entry	Power	Volt.	Curr		
1	Electric Heat Pump	None	HSPF:8.2	21 kBtu/hr	0	0	0	sys#1	1	

COOLING SYSTEM								
#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Ducts	Block
1	Central Unit	None	SEER:14	21 kBtu/hr	630 cfm	0.75	sys#1	1

HOT WATER SYSTEM								
#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Credits
1	Electric	None	Main	0.95	50 gal	60 gal	120 deg	None

SOLAR HOT WATER												
Collector Type	Collector Tilt	Collector Azimuth	Surface Area	Absorp. Loss Coef.	Absorp. Prod.	Trans. Corr.	Tank Volume	Tank U-Value	Tank Surf Area	Heat Exch Eff	PV Pumped	Pump Energy

DUCTS														
DUCT #	----- Supply -----			----- Return -----			Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC #	
	Location	R-Value	Area	Location	Area	Number							Heat	Cool
1	Attic	8	400 ft²	Main	100 ft²	1	Proposed Qn	Main	--- cfm	--- cfm	0.04	0.00	1	1

# Building Input Summary Report

TEMPERATURES														
Programable Thermostat: N				Ceiling Fans: N										
Cooling	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input checked="" type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec		
Heating	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input checked="" type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec		
Venting	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec		
Thermostat Schedule: HERS 2006 Reference														
Hours														
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12	
Cooling (WD)	AM	78	78	78	78	78	78	78	78	78	78	78	78	
	PM	78	78	78	78	78	78	78	78	78	78	78	78	
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78	
	PM	78	78	78	78	78	78	78	78	78	78	78	78	
Heating (WD)	AM	68	68	68	68	68	68	68	68	68	68	68	68	
	PM	68	68	68	68	68	68	68	68	68	68	68	68	
Heating (WEH)	AM	68	68	68	68	68	68	68	68	68	68	68	68	
	PM	68	68	68	68	68	68	68	68	68	68	68	68	
APPLIANCES & LIGHTING														
Appliance Schedule: HERS 2006 Reference														
Hours														
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12	
Ceiling Fans (Summer)	AM	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.33	0.33	0.33	0.33	0.33	
% Released: 100	PM	0.33	0.33	0.33	0.33	0.33	1	0.9	0.9	0.9	0.9	0.9	0.65	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Clothes Washer	AM	0.105	0.081	0.046	0.046	0.081	0.128	0.256	0.57	0.849	1	0.977	0.872	
% Released: 60	PM	0.779	0.698	0.605	0.57	0.581	0.57	0.57	0.57	0.57	0.488	0.43	0.198	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Dishwasher	AM	0.139	0.05	0.028	0.024	0.029	0.09	0.169	0.303	0.541	0.594	0.502	0.443	
% Released: 60	PM	0.377	0.396	0.335	0.323	0.344	0.448	0.791	1	0.8	0.597	0.383	0.281	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Dryer	AM	0.2	0.1	0.05	0.05	0.05	0.075	0.2	0.375	0.5	0.8	0.95	1	
% Released: 10	PM	0.875	0.85	0.8	0.625	0.625	0.6	0.575	0.55	0.625	0.7	0.65	0.375	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Lighting	AM	0.16	0.15	0.16	0.18	0.23	0.45	0.4	0.26	0.19	0.16	0.12	0.11	
% Released: 90	PM	0.16	0.17	0.25	0.27	0.34	0.55	0.55	0.88	1	0.86	0.51	0.28	
Annual Use: 2633 kWh/Yr		Peak Value: 860 Watts												
Miscellaneous	AM	0.48	0.47	0.47	0.47	0.47	0.47	0.64	0.71	0.67	0.61	0.55	0.53	
% Released: 90	PM	0.52	0.5	0.5	0.5	0.59	0.73	0.79	0.99	1	0.96	0.77	0.55	
Annual Use: 4764 kWh/Yr		Peak Value: 874 Watts												
Pool Pump	AM	0	0	0	0	0	0	0	0	0	1	1	1	
% Released: 0	PM	1	1	1	1	0	0	0	0	0	0	0	0	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Range	AM	0.057	0.057	0.057	0.057	0.057	0.114	0.171	0.286	0.343	0.343	0.343	0.4	
% Released: 100	PM	0.457	0.343	0.286	0.4	0.571	1	0.857	0.429	0.286	0.229	0.171	0.114	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Refrigeration	AM	0.85	0.78	0.75	0.73	0.73	0.73	0.75	0.75	0.8	0.8	0.8	0.8	
% Released: 100	PM	0.88	0.85	0.85	0.83	0.88	0.95	1	0.98	0.95	0.93	0.9	0.85	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Well Pump	AM	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.1	0.1	0.1	
% Released: 0	PM	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												



# Building Input Summary Report

REFRIGERATORS										
ID	Type	Screen	Location	Quantity	Vol	FrZ. Vol	Make	Model	Schedule	kWhPerYr
1		Default New	Main	1						
CLOTHES WASHERS										
ID	Type	Screen	Location	Capacity		Make	Model	Schedule	LoadsPerYr	
1	1 Main	Default New	Main	2.847				HERS201	(invalid)	
CLOTHES DRYERS										
ID	Type	Screen	Location	Capacity	Fuel Type	Make	Model	Schedule	LoadsPerYr	
1	Dryers	Default New	Main		Electricity					
DISHWASHERS										
ID	Type	Screen	Location	Capacity	Vintage	Make	Model	Schedule	kWhPerYr	
1	Dishwash	Default New	Main	12	2004 or N			HERS201	372	
RANGE OVEN										
ID	Type	Screen	Location	Type	Fueltype	Make	Model	Cooktop	Oven	
1	Ranges	Default New	Main	CooktopOven C	Electric			Electric FI	Not Conv	
HARD WIRED LIGHTING										
ID	Type	Screen	Location	Total#	Qualify#	Comp FI	All Other FL	txtBulbtype	Schedule	Watts per bulb
1	Hard-Wir	By Count - Qualify	Main	100	10	0	10			
2	Hard-Wir	Default New	Exterior							
3	Hard-Wir	Default New	Garage							
MISC ELECTRICAL LOADS										
ID	Type	Screen	Item	Quantity	Catagory	Operating	Location	Schedule	Off Standby	
1	Misc Elec	Simple Default		1		1	Main	HERS201	1	

# FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Total UA Method

Project Name: TAM Miami House 3 Street: 12345 North 99th Street City, State, Zip: Miami, FL 33125 Owner: Design Location: FL, Miami	Builder Name: Permit Office: Permit Number: Jurisdiction:
---	--

1. New construction or existing	New (From Plans)	4. Number of Bedrooms	3
2. Single family or multiple family	Single-family	5. Conditioned floor area above grade (ft2)	2000
3. Number of units, if multiple family		6. Conditioned floor area below grade (ft2)	0

Proposed UA	
Windows	202.5
Doors	15.6
Walls	153.0
Floor	0.0
Ceiling	78.4
<b>Overall UA</b>	<b>449.5</b>

Baseline UA	
Windows	155.0
Doors	12.0
Walls	247.4
Floor	0.0
Ceiling	70.0
<b>Overall UA</b>	<b>484.4</b>

### Compliance Criteria

Overall UA	449.48	PASS	
Window-to-Floor Area	15.5%	N/A	
SHGC Area Weighted	0.250;0.250	PASS	
Air Handler Location	Not attic	PASS	
Duct Insulation	6.000	FAIL	Ducts must have R8 in attics & R6 in all other unconditioned spaces.
Duct leakage total	MUST	TEST	Duct leakage total must be tested as substantially leak free
Roof Reflectance	0.25	PASS	
Wall Area (ft2)	1476.0	WARNING	Wall area appears large - please check
Ceiling Area (ft2)	2000.0	PASS	
Floor Area (ft2)	2000.0	PASS	
Common Wall Mass R	N/A		There are no common mass walls in this building
Common Wall Frame R	N/A		There are no common frame walls in this building
Common Floor Low R	N/A		There are no common floors in this building
Common Ceiling Low R	N/A		There are no common ceilings in this building
Window Area (ft2)	310.0		
Door Area (ft2)	24.0		

Total UA Calculation Method - **FAIL**


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

PREPARED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Review of the 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 with Section 553.908 Florida Statutes.



BUILDING OFFICIAL: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Total UA Alternative Report – R402.1.4 Compliance

BUILDING COMPONENT	PRESCRIPTIVE REQUIREMENTS	INSTALLED VALUES	
Air infiltration:	Blower door test is required on the building envelope to verify leakage $\leq 5$ ACH50; test report provided to code official.	Total leakage(ACH50) = 5.000 Test report attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	PASS
Air distribution system <sup>1</sup> :			
Air handling unit	Not allowed in attic Sealed	Location: Main Sealed	PASS PASS
Duct R-Value	R-value $\geq$ R-8 (supply in attics) or $\geq$ R-6 (all other duct locations).	R-Value(Supply in unc. attic) = 6.0 R-Value(Others in unc. space) = 6.0	FAIL PASS
Air Leakage <sup>1</sup> :			
Duct test	Air handler installed: Total leakage $\leq 4$ cfm/100 s.f. Air handler Not installed: Total leakage $\leq 3$ cfm/100 s.f.	4.00 cfm/100 s.f. Test report required? YES	PASS
Ducts in conditioned space	Test not required if all ducts and AHU are in conditioned space.	Location: Unconditioned	
Air conditioning systems:	Minimum federal standard required by NAECA <sup>2</sup>		
Central system $\leq 65,000$ Btu/h	SEER=14.0 EER [from Table C403.2.3(3)]	SEER(Min)=14	PASS
Room unit or PTAC	See Tables C403.2.3(1)-(11)		
Other:			
Heating systems:	Minimum federal standard required by NAECA <sup>2</sup>		
Heating Pump $\leq 65,000$ Btu/h	HSPF= 8.2	HSPF(Min) = 8.2	PASS
Gas Furnace, non-weatherized	AFUE 78 % (AFUE 80% after Nov. 2015)	Not Applicable	
Oil Furnace, non-weatherized	AFUE 83%	Not Applicable	
Other:			
Water heating system (storage type):	Minimum federal standard required by NAECA <sup>2</sup>		
Electric: <sup>3</sup>	50 gallons: EF=0.945	50 gallons: EF=0.95	PASS
Gas fired: <sup>4</sup>	40 gallons: EF=0.62, 50 gallons: EF=0.60	Not Applicable	
Other (describe):			

NR = No requirement.

- (1) Ducts & AHU installed "substantially leak free" per Section R403.2.2. Test required by an energy rater certified in accordance with Section 553.99, *Florida Statutes*, or as authorized by *Florida Statutes*. The total leakage test is not required for ducts and air handlers located entirely within the thermal envelope.
- (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 (1-11) of the Commercial Provisions of the *Florida Building Code, Energy Conservation*.
- (3) For other electric storage volumes  $\geq 55$ , min. EF = 2.057 – (0.00113 \* volume).
- (4) For other natural gas storage volumes  $\geq 55$ , min. EF = 0.8012 – (0.00078 \* volume).

DEMONSTRATION PURPOSES ONLY

# Building Input Summary Report

PROJECT									
Title:	TAM Miami House 3	Bedrooms:	3	Address Type:	Street Address				
Building Type:	User	Bathrooms:	0	Lot #					
Owner:		Conditioned Area:	2000 sq.ft.	Block/SubDivision:					
# of Units:	1	Total Stories:	1	PlatBook:					
Builder Name:		Worst Case:	No	Street:	12345 North 99th Street				
Permit Office:		Rotate Angle:	0	County:	Miami-Dade				
Jurisdiction:		Cross Ventilation:		City, State, Zip:	Miami ,				
Family Type:	Single-family	Whole House Fan:			FL , 33125				
New/Existing:	New (From Plans)	Terrain:	Suburban						
Year Construct:	2015	Shielding:	Suburban						
Comment:									
CLIMATE									
Design Location	Tmy Site	Design Temp 97.5 %	2.5 %	Int Design Temp Winter	Summer	Heating Degree Days	Design Moisture	Daily Temp Range	
FL, Miami	FL_MIAMI_INTL_AP	51	90	70	75	149.5	56	Low	
UTILITY RATES									
Fuel	Unit	Utility Name				Monthly Fixed Cost	\$/Unit		
Electricity	kWh	EnergyGauge Default				0	0.1188		
Natural Gas	Therm	EnergyGauge Default				0	1.72		
Fuel Oil	Gallon	EnergyGauge Default				0	1.1		
Propane	Gallon	EnergyGauge Default				0	1.4		
SURROUNDINGS									
Ornt	Type	Shade Trees			Adjacent Buildings				
		Height	Width	Distance	Exist	Height	Width	Distance	
N	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
NE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
E	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
SE	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
S	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
SW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
W	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
NW	None	0 ft	0 ft	0 ft		0 ft	0 ft	0 ft	
BLOCKS									
Number	Name	Area	Volume						
1	Block1	2722	22166						
SPACES									
Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated
1	Main	2000	20000	No	1	3	Yes	Yes	Yes
2	Attic	722	2166	No	0	0	Yes	No	No

# Building Input Summary Report

FLOORS												
#	Floor Type	Space	Perimeter	R-Value	Area	Tile	Wood	Carpet				
1	Slab-On-Grade Edge Insulation	Main	180 ft	0	2000 ft <sup>2</sup>	----	0	0	1			
ROOF												
#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt Tested	Deck Insul.	Pitch (deg)		
1	Gable or shed	Composition shingles	2166 ft <sup>2</sup>	416 ft <sup>2</sup>	Medium	0.75	No	0.9	No	0	22.6	
ATTIC												
#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC						
1	Full attic	Vented	300	2000 ft <sup>2</sup>	N	N						
CEILING												
#	Ceiling Type	Space	R-Value	Area	Framing Fraction	Truss Type						
1	Under Attic ()	Main	30	2000 ft <sup>2</sup>	0.07	Wood						
WALLS												
Wall orientation below is as entered. Actual orientation is modified by rotate angle shown in "Project" section above.												
#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft In	Height Ft In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
1	N	Exterior	Concrete Block - Polystyren	Main	4	50	10	500.0 ft <sup>2</sup>	0	0	0.5	0
2	E	Exterior	Concrete Block - Polystyren	Main	4	40	10	400.0 ft <sup>2</sup>	0	0	0.75	0
3	S	Exterior	Concrete Block - Polystyren	Main	4	40	10	400.0 ft <sup>2</sup>	0	0	0.5	0
4	S	Exterior	Frame - Wood	Main	13	10	10	100.0 ft <sup>2</sup>		0.25	0.5	0
5	W	Exterior	Concrete Block - Polystyren	Main	4	40	10	400.0 ft <sup>2</sup>	0	0	0.5	0
DOORS												
#	Ornt	Door Type	Space	Storms	U-Value	Width Ft In	Height Ft In	Area				
1	N	Wood	Main	None	.65	8	3	24 ft <sup>2</sup>				

# Building Input Summary Report

WINDOWS													
#	Ornt	Wall		Panes	NFRC	U-Factor	SHGC	Storm	Area	Overhang		Interior Shade	Screening
		ID	Frame							Depth	Separation		
1	N	1	Vinyl	Low-E Double	Yes	0.65	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
2	E	2	Vinyl	Low-E Double	Yes	0.65	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
3	S	3	Vinyl	Low-E Double	Yes	0.65	0.25	N	15.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
4	S	4	Vinyl	Low-E Double	Yes	0.65	0.25	N	60.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
5	W	5	Vinyl	Low-E Double	Yes	0.65	0.25	N	75.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None
6	W	Skylt	None	Double (Clear)	Yes	0.75	0.25	N	10.0 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None

INFILTRATION										
#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50	Space(s)	
1	Wholehouse	Proposed ACH(50)	.000318	1666.7	91.5	172.08	.2192	5	All	

MASS				
Mass Type	Area	Thickness	Furniture Fraction	Space
No Added Mass	0 ft²	0 ft	0.3	Main
No Added Mass	0 ft²	0 ft	0.3	Attic

HEATING SYSTEM										
#	System Type	Subtype	Efficiency	Capacity	-----Geothermal HeatPump-----			Ducts	Block	
					Entry	Power	Volt.	Curr		
1	Electric Heat Pump	None	HSPF:8.2	21 kBtu/hr	0	0	0	sys#1	1	

COOLING SYSTEM								
#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Ducts	Block
1	Central Unit	None	SEER:14	21 kBtu/hr	630 cfm	0.75	sys#1	1

HOT WATER SYSTEM								
#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Credits
1	Electric	None	Main	0.95	50 gal	60 gal	120 deg	None

SOLAR HOT WATER												
Collector Type	Collector Tilt	Surface Azimuth	Area	Loss Coef.	Absorp. Prod.	Trans. Corr.	Tank Volume	Tank U-Value	Tank Surf Area	Heat Exch Eff	PV Pumped	Pump Energy

DUCTS														
DUCT #	----- Supply -----			----- Return -----			Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC #	
	Location	R-Value	Area	Location	Area	Number							Heat	Cool
1	Attic	6	400 ft²	Main	100 ft²	1	Proposed Qn	Main	--- cfm	--- cfm	0.04	0.00	1	1

# Building Input Summary Report

TEMPERATURES														
Programable Thermostat: N				Ceiling Fans: N										
Cooling	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input checked="" type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec		
Heating	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input checked="" type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec		
Venting	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec		
Thermostat Schedule: HERS 2006 Reference														
Hours														
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12	
Cooling (WD)	AM	78	78	78	78	78	78	78	78	78	78	78	78	
	PM	78	78	78	78	78	78	78	78	78	78	78	78	
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78	
	PM	78	78	78	78	78	78	78	78	78	78	78	78	
Heating (WD)	AM	68	68	68	68	68	68	68	68	68	68	68	68	
	PM	68	68	68	68	68	68	68	68	68	68	68	68	
Heating (WEH)	AM	68	68	68	68	68	68	68	68	68	68	68	68	
	PM	68	68	68	68	68	68	68	68	68	68	68	68	
APPLIANCES & LIGHTING														
Appliance Schedule: HERS 2006 Reference														
Hours														
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12	
Ceiling Fans (Summer)	AM	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.33	0.33	0.33	0.33	0.33	
% Released: 100	PM	0.33	0.33	0.33	0.33	0.33	1	0.9	0.9	0.9	0.9	0.9	0.65	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Clothes Washer	AM	0.105	0.081	0.046	0.046	0.081	0.128	0.256	0.57	0.849	1	0.977	0.872	
% Released: 60	PM	0.779	0.698	0.605	0.57	0.581	0.57	0.57	0.57	0.57	0.488	0.43	0.198	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Dishwasher	AM	0.139	0.05	0.028	0.024	0.029	0.09	0.169	0.303	0.541	0.594	0.502	0.443	
% Released: 60	PM	0.377	0.396	0.335	0.323	0.344	0.448	0.791	1	0.8	0.597	0.383	0.281	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Dryer	AM	0.2	0.1	0.05	0.05	0.05	0.075	0.2	0.375	0.5	0.8	0.95	1	
% Released: 10	PM	0.875	0.85	0.8	0.625	0.625	0.6	0.575	0.55	0.625	0.7	0.65	0.375	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Lighting	AM	0.16	0.15	0.16	0.18	0.23	0.45	0.4	0.26	0.19	0.16	0.12	0.11	
% Released: 90	PM	0.16	0.17	0.25	0.27	0.34	0.55	0.55	0.88	1	0.86	0.51	0.28	
Annual Use: 2633 kWh/Yr		Peak Value: 860 Watts												
Miscellaneous	AM	0.48	0.47	0.47	0.47	0.47	0.47	0.64	0.71	0.67	0.61	0.55	0.53	
% Released: 90	PM	0.52	0.5	0.5	0.5	0.59	0.73	0.79	0.99	1	0.96	0.77	0.55	
Annual Use: 4764 kWh/Yr		Peak Value: 874 Watts												
Pool Pump	AM	0	0	0	0	0	0	0	0	0	1	1	1	
% Released: 0	PM	1	1	1	1	0	0	0	0	0	0	0	0	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Range	AM	0.057	0.057	0.057	0.057	0.057	0.114	0.171	0.286	0.343	0.343	0.343	0.4	
% Released: 100	PM	0.457	0.343	0.286	0.4	0.571	1	0.857	0.429	0.286	0.229	0.171	0.114	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Refrigeration	AM	0.85	0.78	0.75	0.73	0.73	0.73	0.75	0.75	0.8	0.8	0.8	0.8	
% Released: 100	PM	0.88	0.85	0.85	0.83	0.88	0.95	1	0.98	0.95	0.93	0.9	0.85	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												
Well Pump	AM	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.1	0.1	0.1	
% Released: 0	PM	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Annual Use: 0 kWh/Yr		Peak Value: 0 Watts												

# Building Input Summary Report

REFRIGERATORS										
ID	Type	Screen	Location	Quantity	Vol	FrZ. Vol	Make	Model	Schedule	kWhPerYr
1		Default New	Main	1						
CLOTHES WASHERS										
ID	Type	Screen	Location	Capacity			Make	Model	Schedule	LoadsPerYr
1	1 Main	Default New	Main	2.847					HERS201	(invalid)
CLOTHES DRYERS										
ID	Type	Screen	Location	Capacity	Fuel Type		Make	Model	Schedule	LoadsPerYr
1	Dryers	Default New	Main		Electricity					
DISHWASHERS										
ID	Type	Screen	Location	Capacity	Vintage		Make	Model	Schedule	kWhPerYr
1	Dishwash	Default New	Main	12	2004 or N				HERS201	372
RANGE OVEN										
ID	Type	Screen	Location	Type	Fueltype		Make	Model	Cooktop	Oven
1	Ranges	Default New	Main	CooktopOven C	Electric				Electric FI	Not Conv
HARD WIRED LIGHTING										
ID	Type	Screen	Location	Total#	Qualify#	Comp FI	All Other FL	txtBulbtype	Schedule	Watts per bulb
1	Hard-Wir	By Count - Qualify	Main	100	10	0	10			
2	Hard-Wir	Default New	Exterior							
3	Hard-Wir	Default New	Garage							
MISC ELECTRICAL LOADS										
ID	Type	Screen	Item	Quantity	Catagory	Operating	Location	Schedule	Off Standby	
1	Misc Elec	Simple Default		1		1	Main	HERS201	1	