Applications for compliance with the 2017 Florida Building Code, Energy Conservation via the residential Simulated Performance method shall include:

- A Form 405 report that documents that the Proposed Design complies with Section R405.3 of the Florida Energy Code. This form shall include a summary page indicating home address, e-ratio and the pass or fail status along with summary areas and types of components, whether the home was simulated as a worst-case orientation, name and version of the compliance software tool, name of individual completing the compliance report (1 page) and an input summary checklist that can be used for field verification (usually 4 pages/may be greater).

- Energy Performance Level (EPL) Display Card (one page)

- HVAC system sizing and selection based on ACCA Manual S or per exceptions provided in Section R403.7

- Mandatory Requirements (five pages)

Required prior to CO for the Performance method:

- Air Barrier and Insulation Inspection Component Criteria checklist (Table 402.4.1.1 - one page)

- A completed Envelope Leakage Test Report (usually one page)

- If Form R405 duct leakage type indicates anything other than "default leakage", then a completed Form R405 Duct Leakage Test Report (usually one page).
### FORM R405-2017

**FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION**

*Florida Department of Business and Professional Regulation - Residential Performance Method*

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Right-Energy® Florida 2014 Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street:</td>
<td>1516 Ninth Street</td>
</tr>
<tr>
<td>City, State, Zip:</td>
<td>Tampa, FL 33601</td>
</tr>
<tr>
<td>Owner:</td>
<td>Mr. and Mrs. Henry Wagner</td>
</tr>
<tr>
<td>Design Location:</td>
<td>FL, Tampa International AP</td>
</tr>
<tr>
<td>Builder Name:</td>
<td>Wrightsoft</td>
</tr>
<tr>
<td>Permit Office:</td>
<td>Tampa</td>
</tr>
<tr>
<td>Permit Number:</td>
<td>2222-1</td>
</tr>
<tr>
<td>Jurisdiction:</td>
<td>Hillsborough County</td>
</tr>
<tr>
<td>County:</td>
<td>Hillsborough (Florida Climate Zone 2)</td>
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</table>

<table>
<thead>
<tr>
<th>1. New construction or existing</th>
<th>New (From Plans)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Single family or multiple family</td>
<td>Single-Family</td>
</tr>
<tr>
<td>3. Number of units, if multiple family</td>
<td>1</td>
</tr>
<tr>
<td>4. Number of bedrooms</td>
<td>3</td>
</tr>
<tr>
<td>5. Is this a worst case?</td>
<td>No</td>
</tr>
<tr>
<td>6. Conditioned floor area above grade (ft²)</td>
<td>2100.00</td>
</tr>
<tr>
<td>Conditioned floor area below grade (ft²)</td>
<td>0</td>
</tr>
<tr>
<td>7. Windows (340 ft²)</td>
<td></td>
</tr>
<tr>
<td>a. U-Factor:</td>
<td>Sgl, U=0.032</td>
</tr>
<tr>
<td>SHGC:</td>
<td>SHGC=0.25</td>
</tr>
<tr>
<td>b. U-Factor:</td>
<td>Dbl, U=0.032</td>
</tr>
<tr>
<td>SHGC:</td>
<td>SHGC=0.25</td>
</tr>
<tr>
<td>c. U-Factor:</td>
<td></td>
</tr>
<tr>
<td>SHGC:</td>
<td></td>
</tr>
<tr>
<td>d. U-Factor:</td>
<td></td>
</tr>
<tr>
<td>SHGC:</td>
<td></td>
</tr>
<tr>
<td>Area Weighted Average Overhang Depth:</td>
<td>1.000 ft</td>
</tr>
<tr>
<td>Area Weighted Average SHGC:</td>
<td>0.250</td>
</tr>
<tr>
<td>8. Floor types (2100.00 ft²)</td>
<td></td>
</tr>
<tr>
<td>a. Bg floor, light dry soil, on grade</td>
<td>R=0.0 2100.00</td>
</tr>
<tr>
<td>b. N/A</td>
<td>R=</td>
</tr>
<tr>
<td>c. N/A</td>
<td>R=</td>
</tr>
<tr>
<td>9. Wall types (1728 ft²)</td>
<td></td>
</tr>
<tr>
<td>a. Frm wall, eifs ext, r-15 ca</td>
<td>Insulation Area (ft²)</td>
</tr>
<tr>
<td>19.0</td>
<td>1458.00</td>
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<tr>
<td>b. Frm wall, stucco ext, r-15</td>
<td></td>
</tr>
<tr>
<td>15.0</td>
<td>270.00</td>
</tr>
<tr>
<td>c. N/A</td>
<td>R=</td>
</tr>
<tr>
<td>d. N/A</td>
<td>R=</td>
</tr>
<tr>
<td>10. Ceiling types (2100 ft²)</td>
<td></td>
</tr>
<tr>
<td>a. Attic ceiling, asphalt s</td>
<td>Insulation Area (ft²)</td>
</tr>
<tr>
<td>R=30.0</td>
<td>2100.00</td>
</tr>
<tr>
<td>b. N/A</td>
<td>R=</td>
</tr>
<tr>
<td>c. N/A</td>
<td>R=</td>
</tr>
<tr>
<td>11. Ducts</td>
<td></td>
</tr>
<tr>
<td>a. Sup:Living AH/Ret:Living AH/AH:Living AH</td>
<td>R Area (ft²)</td>
</tr>
<tr>
<td>8.0</td>
<td>222.79</td>
</tr>
<tr>
<td>12. Cooling systems</td>
<td>kBtu/hr Efficiency</td>
</tr>
<tr>
<td>a. Split air source heat pump</td>
<td>20.2 SEER: 14.0</td>
</tr>
<tr>
<td>13. Heating systems</td>
<td>kBtu/hr Efficiency</td>
</tr>
<tr>
<td>a. Split air source heat pump</td>
<td>22.4 HSPF: 8.2</td>
</tr>
<tr>
<td>14. Hot water systems</td>
<td></td>
</tr>
<tr>
<td>a. Electric conventional (40 gal)</td>
<td></td>
</tr>
<tr>
<td>Cap: 40 gal</td>
<td>EF: 0.96</td>
</tr>
<tr>
<td>15. Credits</td>
<td>Solar WH</td>
</tr>
</tbody>
</table>

**Glass/Floor area: 0.162**

**Total Proposed Modified Loads: 54.63**

**Total Baseline Loads: 65.84**

**PASS**

**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.**

**PREPARED BY:**

**DATE:**

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

**OWNER/AGENT:**

**DATE:**

- **Building Official:**

**DATE:**

- **Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.2.2.1.**
- **Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and starting July 1, 2017, this project requires an envelope leakage test report with envelope leakage no greater than 7.0 ACH50 (R402.4.1.2).**
**Building Input Summary Report**

**PROJECT**

- **Title:** Right-Energy® Florida 2014
- **Building Type:** FLasBuilt
- **Owner:** Mr. and Mrs. Henry Wagner
- **Lot #:** Lot. 111
- **Conditioned Area:** 2100
- **Total Stories:** 1
- **Block/Subdivision:** Lexington Crossing
- **Street:** 1516 Ninth Street
- **City, State, Zip:** Tampa, FL 33601

**CLIMATE**

<table>
<thead>
<tr>
<th>Design Location</th>
<th>TMY Site</th>
<th>IECC Zone</th>
<th>Design Temp</th>
<th>Int Design Temp</th>
<th>Heating Degree Days</th>
<th>Design Moisture</th>
<th>Daily Temp Range</th>
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<tbody>
<tr>
<td>FL, Tampa International AP</td>
<td>FL_Tampa_Intl_AP</td>
<td>2</td>
<td>43</td>
<td>91</td>
<td>70</td>
<td>75</td>
<td>0</td>
</tr>
</tbody>
</table>

**BLOCKS**

1. **Living AH**
   - **Area:** 2100.00 ft²
   - **Volume:** 18900.00 ft³

**SPACES**

1. **Living**
   - **Area:** 2100.00 ft²
   - **Volume:** 18900.00 ft³
   - **Kitchen:** No
   - **Occupants:** 4
   - **Bedrooms:** 3
   - **Bathrooms:** 1
   - **Infil ID:** 1
   - **Finished:** Yes
   - **Cooled:** Yes
   - **Heated:** Yes

**FLOORS**

1. **Bg floor, light dry soil, on grade depth, carp 80**
   - **Floor Type:** Living
   - **Space:** 162 ft²
   - **Perimeter:** 0
   - **R-Value:** 2100.00 ft²
   - **Tile:** 0
   - **Wood:** 0
   - **Carpet:** 0.8

**ROOF**

1. **Gable or shed**
   - **Type:** RoofAsph
   - **Materials:** 2661 ft²
   - **Gable Area:** 100 ft²
   - **Roof Color:** Light
   - **Solar Absor.:** No
   - **SA Tested:** 0.60
   - **Emittance Tested:** 0.90
   - **Deck Insul.:** 2
   - **Pitch (deg):** 22

**ATTIC**

1. **Full attic**
   - **Ventilation:** Vented
   - **Space:** 300
   - **RBS:** 2100.00 ft²
   - **IRCC:** N

**CEILING**

1. **Attic ceiling, asphalt s**
   - **Ceiling Type:** Living
   - **Space:** 10
   - **R-Value:** 0
   - **Framing Fraction:** 30
   - **Truss Type:** --

**WALLS**

1. **Exterior**
   - **Framing Type:** Frm wall, s
   - **Height:** 30
   - **Width:** 2100.00 ft²
   - **Framing Fraction:** 0.10
   - **Below Grade%:** --

**DOORS**

1. **Door, wd sc type**
   - **Space:** 30
   - **U-Value:** 0.390
   - **Height:** 6
   - **Area:** 20.0 ft²

2. **Door, wd sc type**
   - **Space:** 30
   - **U-Value:** 0.390
   - **Height:** 6
   - **Area:** 21.1 ft²
## WINDOWS

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<thead>
<tr>
<th>#</th>
<th>Omt</th>
<th>Wall ID</th>
<th>Frame</th>
<th>Panes</th>
<th>NFRC</th>
<th>U-Factor</th>
<th>SHGC</th>
<th>Storms</th>
<th>Area</th>
<th>Depth</th>
<th>Separation</th>
<th>Interior Shade</th>
<th>Screening</th>
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<tr>
<td>1</td>
<td>N</td>
<td>1</td>
<td>None</td>
<td>Single (Clear)</td>
<td>Yes</td>
<td>0.032</td>
<td>0.25</td>
<td>No</td>
<td>14.61 ft²</td>
<td>1 ft 0 in</td>
<td>1 ft 4 in</td>
<td>Blinds 45°/outdoor</td>
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<tr>
<td>2</td>
<td>N</td>
<td>1</td>
<td>None</td>
<td>Single (Clear)</td>
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<td>0.25</td>
<td>No</td>
<td>30.01 ft²</td>
<td>1 ft 0 in</td>
<td>1 ft 4 in</td>
<td>Blinds 45°/outdoor</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>N</td>
<td>1</td>
<td>None</td>
<td>Single (Clear)</td>
<td>Yes</td>
<td>0.032</td>
<td>0.25</td>
<td>No</td>
<td>30.01 ft²</td>
<td>1 ft 0 in</td>
<td>1 ft 4 in</td>
<td>Blinds 45°/outdoor</td>
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</tr>
<tr>
<td>4</td>
<td>E</td>
<td>2</td>
<td>None</td>
<td>Single (Clear)</td>
<td>Yes</td>
<td>0.032</td>
<td>0.25</td>
<td>No</td>
<td>45.01 ft²</td>
<td>1 ft 0 in</td>
<td>1 ft 4 in</td>
<td>Blinds 45°/outdoor</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>S</td>
<td>3</td>
<td>Wood</td>
<td>Double (Clear)</td>
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<td>0.032</td>
<td>0.25</td>
<td>No</td>
<td>40.61 ft²</td>
<td>1 ft 0 in</td>
<td>1 ft 4 in</td>
<td>Blinds 45°/outdoor</td>
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</tr>
<tr>
<td>6</td>
<td>S</td>
<td>3</td>
<td>None</td>
<td>Single (Clear)</td>
<td>Yes</td>
<td>0.032</td>
<td>0.25</td>
<td>No</td>
<td>135 ft²</td>
<td>1 ft 0 in</td>
<td>1 ft 4 in</td>
<td>Blinds 45°/outdoor</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>W</td>
<td>4</td>
<td>None</td>
<td>Single (Clear)</td>
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<td>0.032</td>
<td>0.25</td>
<td>No</td>
<td>45.01 ft²</td>
<td>1 ft 0 in</td>
<td>1 ft 4 in</td>
<td>Blinds 45°/outdoor</td>
<td></td>
</tr>
</tbody>
</table>

## GARAGE

<table>
<thead>
<tr>
<th>#</th>
<th>Floor Area</th>
<th>Ceiling Area</th>
<th>Exposed Wall Perimeter</th>
<th>Avg. Wall Height</th>
<th>Exposed Wall Insulation</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>440 ft²</td>
<td>440 ft²</td>
<td>54 ft</td>
<td>9 ft</td>
<td>19</td>
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## INfiltrATION

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<tr>
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<th>Scope</th>
<th>Method</th>
<th>SLA</th>
<th>CFM 50</th>
<th>ELA</th>
<th>EqLA</th>
<th>ACH</th>
<th>ACH 50</th>
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<tbody>
<tr>
<td>1</td>
<td>Wholehouse</td>
<td>Blower Door</td>
<td>0.000401</td>
<td>2205</td>
<td>121.3</td>
<td>227.8</td>
<td>0.41</td>
<td>7.00</td>
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</table>

## HEATING SYSTEM

<table>
<thead>
<tr>
<th>#</th>
<th>System Type</th>
<th>Subtype</th>
<th>Efficiency</th>
<th>Capacity</th>
<th>Block</th>
<th>Ducts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Split air source heat pump</td>
<td>HSPF: 8.2</td>
<td>22.4 kBtu/hr</td>
<td>1</td>
<td>sys#1</td>
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## COOLING SYSTEM

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<th>Subtype</th>
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<th>Capacity</th>
<th>Air Flow</th>
<th>SHR</th>
<th>Block</th>
<th>Ducts</th>
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</thead>
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<td>673 cfm</td>
<td>0.70</td>
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## HOT WATER SYSTEM

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<tr>
<th>FSEC Cert</th>
<th>Company Name</th>
<th>System Model #</th>
<th>Collector Model #</th>
<th>Collector Area</th>
<th>Storage Volume</th>
<th>FEF</th>
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</thead>
<tbody>
<tr>
<td>12345</td>
<td>Sample</td>
<td>SSWS-678</td>
<td>SSWC-123</td>
<td>35.0 ft²</td>
<td>70.0 gal</td>
<td>3.0</td>
</tr>
</tbody>
</table>

## SOLAR HOT WATER SYSTEM

**Programmable Thermostat:**

**Ceiling Fans:**

| Thrmostat Schedule Schedule Type | Florida Building Code, 6th Edition (2017) | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
|---------------------------------|------------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Cooling (WD)                    |                                           |    |    | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| Cooling (WEH)                   |                                           |    |    | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| Heating (WD)                   |                                           |    |    | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 |
| Heating (WEH)                   |                                           |    |    | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 |

**Thermostat Schedule Schedule Type:**

**Florida Building Code, 6th Edition (2017):**

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<tr>
<th>Hours</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TEMPERATURES**

<table>
<thead>
<tr>
<th>Programmable Thermostat:</th>
<th>Ceiling Fans:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling (WD)</td>
<td></td>
</tr>
<tr>
<td>Cooling (WEH)</td>
<td></td>
</tr>
<tr>
<td>Heating (WD)</td>
<td></td>
</tr>
<tr>
<td>Heating (WEH)</td>
<td></td>
</tr>
</tbody>
</table>

**Right-Suite® Universal 2017 17.0.29 RSU00000 Right-Energy® Florida 2017 Section 405.4.1 Compliant Software 2017-Oct-06 16:32:56**

... leads to the completion of the document.
1. New construction or existing
   New (From Plans)
2. Single family or multiple family
   Single-Family
3. Number of units, if multiple family
   1
4. Number of bedrooms
   3
5. Is this a worst case?
   No
6. Conditioned floor area (ft²)
   2100.00
7. Windows**
   a. U-Factor: Sgl, U=0.032
   b. U-Factor: Dbl, U=0.032
   c. U-Factor: SHGC:
   d. U-Factor: SHGC:
   Area Weighted Average Overhang Depth:
   Area Weighted Average SHGC:
   1.000 ft
   0.250
8. Floor Types
   a. Bg floor, light dry soil, on grade
   b. N/A
   c. N/A
   Insulation Area (ft²)
   R=0.0 2100.00
   R=
9. Wall Types
   a. Frm wall, eifs ext, r-15
   b. Frm wall, stucco ext, r-15
   c. N/A
   d. N/A
   Insulation Area (ft²)
   R=15.0 1458.00
   R=270.00
10. Ceiling Types
    a. Attic ceiling, asphalt s
    b. N/A
    c. N/A
    Insulation Area (ft²)
    R=30.0 2100.00
11. Ducts
    a. Sup:Living AH/Ret:Living AH/AH:Living AH
    b. Sup:Living AH/Ret:Living AH/AH:Living AH
    SEER: 14.0
    Btu/hr 22.4
12. Cooling systems
    a. Split air source heat pump
    b. Split air source heat pump
    SEER: 14.0
    Btu/hr 22.4
13. Heating systems
    a. Split air source heat pump
    b. Split air source heat pump
    SEER: 14.0
    Btu/hr 22.4
14. Hot water systems
    a. Electric conventional (40 gal)
    b. Conservation features
    Solar: FEF=3.0
    Cap: 40 gal
    EF: 0.96
15. Credits
    Solar WH

I certify that this home 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: _______________________

**Label required by Section 303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.
MANDATORY REQUIREMENTS - See individual code sections for full details.

SECTION R401 GENERAL

- R401.3 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 RD.

- R402.4 Air leakage (Mandatory). The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.5.

  Exception: Dwelling units of R-2 Occupancies and multiple attached single family dwellings shall be permitted to comply with Section C402.5.

  - 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 seven air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. Testing shall be conducted in accordance with ANSI/RESET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7), Florida Statutes or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or 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.

  Exception: Testing is not required for additions, alterations, renovations, or repairs, of the building thermal envelope of existing buildings in which the new construction is less than 85 percent 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.
    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. Where using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace. Where using tight-fitting doors on masonry fireplaces, the doors shall be listed and labeled in accordance with UL 907.

  - 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/m²), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m²), when tested according to NFRC 400 or AAMA/WDMA/CSA 101/1.S.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer.

  Exception: Site-built windows, skylights and doors.
MANDATORY REQUIREMENTS - (Continued)

- 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-3.6.

- **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 1/2 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 system.** 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 Heating equipment capacity**
  - **R403.6.1.1.1 Gas and oil-fired pool and spa heaters.** All gas- and oil-fired pool and spa heaters shall have a minimum COP of 1.1 when tested in accordance with ANSI Z 21.56. The capacity of gas- and oil-fired pool and spa heaters shall not be less than the design load calculated in accordance with Section R403.6.1.
  - **R403.6.1.1.2 Heat pump pool heaters.** Heat pump pool heaters shall have a minimum COP of 4.0 when tested in accordance with 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.
  - **R403.6.1.1.3 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.

- **R403.6.1.2 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.

- **R403.6.1.2.1 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.

- **R403.9.1 Swimming pools, inground spas and portable spas**
  - **R403.9.1.1 Gas and oil-fired pool and spa heaters.** All gas- and oil-fired pool and spa 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.

- **R403.9.2 Time switches.** Time switches or other control method that can automatically turn on and off 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 the site-recovered energy, such as a heat pump or solar energy source computed over an operating season.

- **R403.9.4 Snow and ice-melting systems.** 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 shut off when the outdoor temperature is above 40°F.

- **R403.9.5 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.

- **R403.9.6 Systems serving multiple dwelling units**
  - **R403.9.6.1 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.

- **R403.9.7 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 shut off when the outdoor temperature is above 40°F.

- **R403.9.8 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.

- **R403.9.9 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.

- **R404.1 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.

- **R404.2 Performance ONLY.** All ducts not entirely inside the building thermal envelope shall be insulated to a minimum of R-6.

- **R405.2 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.
MANDATORY REQUIREMENTS - (Continued)

o R403.7.1.1 Cooling equipment capacity. (continued) 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 R403.7, or the closest available size provided by the manufacturer’s product lines. The corresponding latent load capacity of the equipment shall not be less than the calculated latent load.

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 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 temperatures 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 multiple-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. Where pumps are powered exclusively from on-site renewable generation.

o R403.7.1.2 Heating equipment capacity.
  • R403.7.1.2.1 Heat pumps. Heat pump sizing shall be based on the cooling requirements as calculated according to Section R403.7.1.1, and the heat pump total cooling capacity shall not be more than 1.15 times greater than the design cooling load even if the design heating load is 1.15 times greater than the design cooling load.
  • R403.7.1.2.2 Electric resistance furnaces. Electric resistance furnaces shall be sized within 4 kW of the design requirements calculated according to the procedure selected in Section R403.7.1.
  • R403.7.1.2.3 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 R403.7.1.

o R403.7.1.3 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.

□ R403.8 Systems serving multiple dwelling units (Mandatory). Systems serving multiple dwelling units shall comply with Sections C403 and C404 of the IEC—Commercial Provisions in lieu of Section R403.

□ R403.9 Snow melt and ice 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 50°F (10°C), and no precipitation is falling and an automatic or manual control that will allow shutdown when the outdoor temperature is above 40°F (4.4°C).

□ R403.10 Pools and permanent spa energy consumption (Mandatory). The energy consumption of pools and permanent spas shall be in accordance with Sections R403.10.1 through R403.10.5.
  • R403.10.1 Heaters. The electric power to heaters shall be controlled by a readily accessible on-off switch that is an integral part of the heater mounted on the exterior of the heater, or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater. Gas-fired heaters shall not be equipped with continuously burning ignition pilots.
  • R403.10.2 Time switches. Time switches or other control methods that can automatically turn off and on according to a preset schedule shall be installed for heaters and pump motors. Heaters and pump motors that have built-in time switches shall be in compliance with this section.

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

o R403.10.3 Covers. Outdoor heated swimming pools and outdoor permanent 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: Where more than 70 percent of the energy for heating, computed over an operation season, is from site-recovered energy, such as from a heat pump or solar energy source, covers or other vapor-retardant means shall not be required.

o R403.10.4 Gas- and oil-fired pool and spa heaters. All gas- and oil-fired pool and spa 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 Z21.56. Pool heaters fired by natural or LP gas shall not have continuously burning pilot lights.
**R403.10.5 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.

**R403.11 Portable spas (Mandatory).** The energy consumption of electric-powered portable spas shall be controlled by the requirements of APSP-14.

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**Section R404**

**ELECTRICAL POWER AND LIGHTING SYSTEMS**

- **R404.1 Lighting equipment (Mandatory).** Not less than 75 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps or not less than 75 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.
  - **Exception:** Low-voltage lighting.
- **R404.1.1 Lighting equipment (Mandatory).** Fuel gas lighting systems shall not have continuously burning pilot lights.
<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>AIR BARRIER CRITERIA</th>
<th>INSULATION INSTALLATION CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>General requirements</td>
<td>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.</td>
<td>Air-permeable insulation shall not be used as a sealing material.</td>
</tr>
<tr>
<td>Ceiling/attic</td>
<td>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 attics or spaces shall be sealed.</td>
<td>The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.</td>
</tr>
<tr>
<td>Walls</td>
<td>The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.</td>
<td>Cavities with corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.</td>
</tr>
<tr>
<td>Windows, skylights and doors</td>
<td>The space between window/door jambs and framing, and skylights and framing shall be sealed.</td>
<td></td>
</tr>
<tr>
<td>Rim joists</td>
<td>Rim joists are insulated and include an air barrier.</td>
<td>Rim joists shall be insulated.</td>
</tr>
<tr>
<td>Floors (including above-garage and cantilevered floors)</td>
<td>The air barrier shall be installed at any exposed edge of insulation.</td>
<td></td>
</tr>
<tr>
<td>Crawl space walls</td>
<td>Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.</td>
<td>Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls.</td>
</tr>
<tr>
<td>Shafts, penetrations</td>
<td>Duct shafts, utility penetrations, and flue shaft openings to exterior or unconditioned space shall be sealed.</td>
<td></td>
</tr>
<tr>
<td>Narrow cavities</td>
<td>Batt insulation shall be cut neatly to fit around insulation that on installation readily conforms to the available cavity spaces.</td>
<td></td>
</tr>
<tr>
<td>Garage separation</td>
<td>Air sealing shall be provided between the garage and conditioned spaces.</td>
<td></td>
</tr>
<tr>
<td>Recessed lighting</td>
<td>Recessed light fixtures installed in the building thermal envelope shall be sealed to the drywall.</td>
<td>Recessed light fixtures installed in the building thermal envelope shall be air tight and IC-rated.</td>
</tr>
<tr>
<td>Plumbing and wiring</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Shower/tub on exterior wall</td>
<td>The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.</td>
<td>Exterior walls adjacent to showers and tubs shall be insulated.</td>
</tr>
<tr>
<td>Electrical/phone box on exterior walls</td>
<td>The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.</td>
<td></td>
</tr>
<tr>
<td>HVAC register boots</td>
<td>HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.</td>
<td></td>
</tr>
<tr>
<td>Concealed sprinklers</td>
<td>When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.</td>
<td></td>
</tr>
</tbody>
</table>
FLORIDA ENERGY EFFICIENCY CODE  
FOR BUILDING CONSTRUCTION

Envelope Leakage Test Report  
Performance Methods

| Project Name: Right-Energy® Florida 2014 Example | Builder Name: Wrightsoft |
| Street: 1516 Ninth Street | Permit Office: Tampa |
| City, State, Zip: Tampa, FL 33601 | Permit Number: 2222-1 |
| Design Location: FL Tampa International AP | Jurisdiction: Hillsborough County |
| Cond. Floor Area: 2100 ft² | Cond. Volume: 18900 ft³ |

Envelope Leakage Test Results

Regression Data:

C: n: R:

<table>
<thead>
<tr>
<th>Single or Multi Point Test Data:</th>
<th>HOUSE PRESSURE</th>
<th>FLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pa</td>
<td>cfm</td>
</tr>
<tr>
<td>2</td>
<td>Pa</td>
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<tr>
<td>5</td>
<td>Pa</td>
<td>cfm</td>
</tr>
<tr>
<td>6</td>
<td>Pa</td>
<td>cfm</td>
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</tbody>
</table>

Leakage Characteristics

Required ACH(50) from FORM R405-2017:

Tested ACH(50)*:

* Tested leakage must be less than or equal to the required ACH(50) shown on Form R405-2017 for this building. If the tested ACH(50) is less than 3, the building must have a mechanical ventilation system.

402.4.1.2 Testing option. The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 7 air changes per hour in Climate Zones 1 and 2. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7), Florida Statutes or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or 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: ________________________________

BUILDING OFFICIAL: ________________________________

DATE: _________________________________________
FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION
Form R405 Duct Leakage Test Report Performance Method

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Right-Energy© Florida 2014 Example</th>
<th>Builder:</th>
<th>Wrightsoft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street:</td>
<td>1516 Ninth Street</td>
<td>Permit Office:</td>
<td>Tampa</td>
</tr>
<tr>
<td>City, State, Zip:</td>
<td>Tampa, FL 33601</td>
<td>Permit Number:</td>
<td>2222-1</td>
</tr>
<tr>
<td>Design Location:</td>
<td>FL, Tampa International AP</td>
<td>Jurisdiction:</td>
<td>Hillsborough County</td>
</tr>
</tbody>
</table>

**Duct Leakage Test Results**

<table>
<thead>
<tr>
<th>CFM25 Duct Leakage Test Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>1</td>
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<tr>
<td>2</td>
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</tbody>
</table>

*Tested Qn (Out) must be less than or equal to the required Qn (Out)

I certify the above tested leakage to outside, Qn, is not greater than the proposed duct leakage Qn specified on FORM R405-2017.

Signature: _____________________________
Printed Name: __________________________
DATE: _________________________________

Duct tightness shall be verified by testing to ANSI/RESNET/ICC 380 by either individuals as defined in Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i), Florida Statutes.

BUILDING OFFICIAL: ________________________
DATE: _________________________________
## Reference Home Characteristics

Mr. and Mrs. Henry Wagner  
1516 Ninth Street  
Tampa, FL 33601

<table>
<thead>
<tr>
<th>Title: SimpleHouse</th>
<th>TMY City: FL_Tampa_Intl_AP</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLBase2014</td>
<td></td>
</tr>
</tbody>
</table>

**Above-grade Walls (Uo)**: 0.084  
**Above-grade Wall Solar Absorptance**: 0.75  
**Above-grade Wall Infrared Emittance**: 0.90  
**Basement Walls (Uo)**: n/a  
**Above-grade Floors (Uo)**: n/a  
**Slab Insulation R-Value**: 0.0  
**Ceilings (Uo)**: 0.030  
**Roof Solar Absorptance**: 0.75  
**Roof Infrared Emittance**: 0.90  
**Attic Vent Area (ft²)**: 7.00  
**Crawlspace Vent Area (ft²)**: n/a  
**Exposed Masonry Floor Area (ft²)**: 508.00  
**Carpet & Pad R-Value**: 2.0  
**Door Area (ft²)**: 40.00  
**Door U-Factor**: 0.400  
**North Window Area (ft²)**: 78.75  
**South Window Area (ft²)**: 78.75  
**East Window Area (ft²)**: 78.75  
**West Window Area (ft²)**: 78.75  
**Window U-Factor**: 0.400  
**Window SHGC (Heating)**: 0.2169  
**Window SHGC (Cooling)**: 0.2169  
**ACH50**: 7.00  
**Internal Gains * (Btu/day)**: 80192  
**Water heater gallons per day**: 60.00  
**Water Heater set point temperature**: 120.00  
**Water heater efficiency rating**: 0.95  
**Labeled Heating System Rating and Efficiency**: HSPF = 8.2  
**Labeled Cooling System Rating and Efficiency**: SEER = 14.0  
**Air Distribution System Efficiency**: 0.88  
**Thermostat Type**: Manual  
**Heating Thermostat Settings**: 72.0 (All hours)  
**Cooling Thermostat Settings**: 75.0 (All hours)