**5th Edition (2014) Florida Building Code, Energy Conservation Chapter 4 [RE] Residential Energy Efficiency**

**R406 Energy Rating Index Compliance Alternative. Add Section R406 to read as follows:**

**SECTION R406 ENERGY RATING INDEX COMPLIANCE ALTERNATIVE**

**R406.1 Scope.** This section establishes criteria for compliance using an Energy Rating Index (ERI) analysis.

**R406.2 Mandatory requirements.** Compliance with this section requires that the provisions identified in Sections R401 through R404 of the 5th Edition (2014) Florida Building Code, Energy Conservation labeled as “mandatory” shall be met. Additionally, ~~and~~ Section R403.5.3 Hot water pipe insulation of the *2015 International Energy Conservation Code* shall be met. The building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table 402.1.1 or 402.1.3 of the 2009 *International Energy Conservation Code*.

**Exception:** Supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6.

**R406.3 Energy Rating Index.** The Energy Rating Index (ERI) shall be a numerical integer value that is based on a linear scale constructed such that the *ERI reference design* has

an Index value of 100 and a *residential building* that uses no net purchased energy has an Index value of 0. Each integer value on the scale shall represent a 1-percent change in the ~~total energy use~~ annual total normalized modified loads of the ~~rated design~~ *rated design* relative to the annual total ~~energy use~~ loads of the *ERI reference design*. The ERI shall consider all energy used in the *residential building*.

**R406.3.1 ERI reference design.** The *ERI reference design* shall be configured such that it meets the minimum requirements of the 2006 *International Energy Conservation Code* prescriptive requirements.

~~The proposed~~ *~~residential building~~* ~~shall be shown to have an annual total normalized modified load less than or equal to the annual total loads of the~~ *~~ERI reference design~~*~~.~~

**R406.4 ERI-based compliance.** The ERI for the *rated design* shall be determined in accordance with ANSI/RESNET/ICC 301-2014, including Addendum A-2015, and ~~Compliance based on an ERI analysis requires that the~~ *~~rated design~~* be shown to have an ERI less than or equal to the appropriate value listed in Table R406.4 ~~when compared to the~~ *~~ERI reference design~~*.

**R406.5 Verification by approved agency.** Verification of compliance with Section R406 shall be completed by an *approved* third party.

**R406.6 Documentation.** Documentation of the software used to determine the ERI and the parameters for the residential building shall be in accordance with Sections R406.6.1 through R406.6.3.

# R406.6.1 Compliance software tools.

Computer software utilized for demonstration of code compliance shall have been approved by the Florida Building Commission in accordance with requirements of this code. ~~Documentation verifying that the methods and accuracy of the compliance software tools conform to the provisions of this section shall be provided to the code official.~~

**R406.6.2 Compliance report.** Compliance software tools shall generate a report that documents that the ERI of the *rated design* complies with Sections R406.3 and R406.4.

The compliance documentation shall include the following information:

1. Address or other identification of the residential building.
2. An inspection checklist documenting the building component characteristics of the *rated design*. The inspection checklist shall show results for both the *ERI reference design* and the *rated design*, and shall document all inputs entered by the user necessary to reproduce the results.
3. Name of individual completing the compliance report.
4. Name and version of the compliance software tool.

**Exception:** Multiple orientations. Where an otherwise identical building model is offered in multiple orientations, compliance for any orientation shall be permitted by documenting that the building meets the performance requirements in each of the four (north, east, south and west) cardinal orientations.

# TABLE R406.4 MAXIMUM ENERGY RATING INDEX

|  |  |
| --- | --- |
| **CLIMATE ZONE**  1 | **ENERGY RATING INDEX**  ~~52~~ 58 |
| 2 | ~~52~~ 58 |
| 3 | 51 |
| 4 | 54 |
| 5 | 55 |

|  |  |
| --- | --- |
| 6 | 54 |
| 7 | 53 |
| 8 | 53 |

**R406.6.3 Additional documentation.** The *code official* shall be permitted to require the following documents:

1. Documentation of the building component characteristics of the *ERI reference design*.
2. A certification signed by the builder providing the building component characteristics of the

*rated design.*

1. Documentation of the actual values used in the software calculations for the *rated design*.

**R406.7 Calculation software tools.** Calculation software, where used, shall be in accordance with Sections R406.7.1 through R406.7.3.

**R406.7.1 Minimum capabilities.** Calculation procedures used to comply with this section shall be software tools capable of calculating the ERI as described in Section R406.3, and shall include the following capabilities:

* 1. Computer generation of the *ERI reference design* using only the input for the *rated design*.

The calculation procedure shall not allow the user to directly modify the building component characteristics of the *ERI reference design*.

~~The calculation procedure shall not allow the user to directly modify the building component characteristics of the ERI reference deisgn.~~

* 1. Calculation of whole building, as a single *zone*, sizing for the heating and cooling equipment in the *ERI reference design* residence in accordance with Section R403.7.
  2. Calculations that account for the effects of indoor and outdoor temperatures and part- load ratios on the performance of heating, ventilating and air-conditioning equipment based on climate and equipment sizing.
  3. Printed *code official* inspection checklist listing each of the *rated design* component characteristics determined by the analysis to provide compliance, along with their respective performance ratings.

**~~R406.7.2 Specific approval.~~** ~~Performance analysis tools meeting the applicable sections of Section R406 shall be~~ *~~approved~~*~~. Tools are permitted to be~~ *~~approved~~* ~~based on meeting a specified threshold for a jurisdiction. The~~ *~~code official~~* ~~shall approve tools for a specified application or limited scope.~~

**R406.7.~~3~~2 Input values.** When calculations require input values not specified by Sections R402, R403, R404 and R405 of the *2015 International Energy Conservation Code*, those input values shall be taken from an approved source.