2018 IECC Residential Energy Compliance Paths

Energy Code Support Program

All new residential projects are required to utilize one of the energy compliance path referenced in Section R401.2 of the 2021 International Energy Conservation Code (IECC). These different energy compliance have different approached to achieve energy code compliance. This provide flexibility for the designer, architect, or building owner to determine which is the best option for their project to be design to. The energy compliance path must be known in the beginning of the process, long before the project is submitted for permit application.

PRESCRIPTIVE

- **Insulation and fenestration criteria**
- **R Value Alternative**
- **Total UA Alternative**

TOTAL BUILDING PERFORMANCE

ENERGY RATING INDEX

SHUMS CODA ASSOCIATES

PRESCRIPTIVE PATH R402

The prescriptive path is the path that is referred to as the “by the book” compliance path—you follow what the code states.

The prescriptive path is a path that contains three options for compliance. Each option contains different types of flexibility for the thermal envelope to comply with the requirements of the energy code.

R402.1.2 - Insulation and Fenestration Criteria

This option is the most straight forward approach. Section R402.1.3 including Table R402.1.3 is what is followed for this option. The insulation would need to meet the minimum R-values listed in Table R402.1.3 and the U-factors and SHGC can not exceed the values listed in Table R402.1.3. Section R402.2 contains more flexibility for this option.

R402.1.34- U-Factor Alternative

This option requires projects to comply with section R402.1.2. Table R402.1.2 utilizes the U-factor, which demonstrates the maximum value permitted for compliance. The entire assembly of the thermal envelope is used to demonstrate compliance with Table R402.1.2. Documentation of where the values of the assembly came from is required.

R402.1.5- Total UA Alternative

This option is the only option of the prescriptive path that allows for some trading of the thermal envelope components. A report is required to show compliance, and the software often utilized are REScheck, Ekotrope, or REMRate.

TOTAL BUILDING PERFORMANCE R405

This energy compliance path utilizes the entire building's energy performance, and the annual energy cost of the proposed design determine if the design will comply with this compliance path.

This path utilizes the twin building concept of a referenced design building and a proposed design building.

This path allows for trading of components beyond what is found in the thermal envelope. It will utilize a twin building concept of a referenced design building that uses Table R402.1.4 values and a proposed design building.

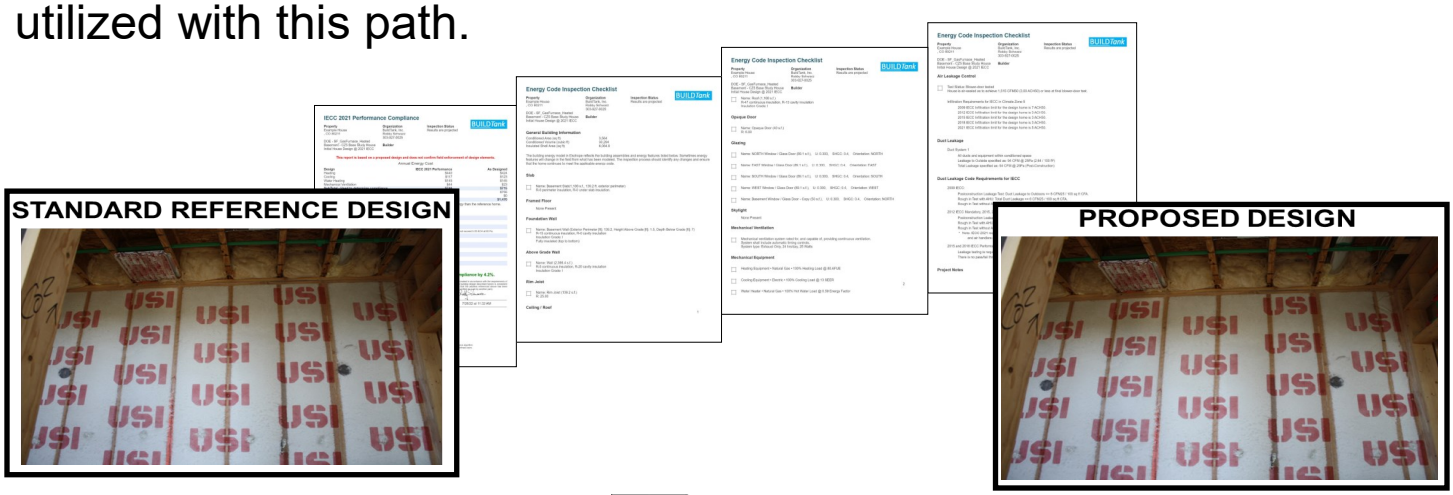
Projects must comply with the sections listed as mandatory.

The components of the building that are permitted to be traded are listed in Table R405.5.2(1). This table has the parameters of how to treat these building components within design of the building.

This path requires the use of a third party verifier.

Two reports are required to be provided when utilizing this path.

The two most often utilized software is REMRate and Ekotrope, but others may qualify. REScheck is ***NOT*** a software that can be utilized with this path.



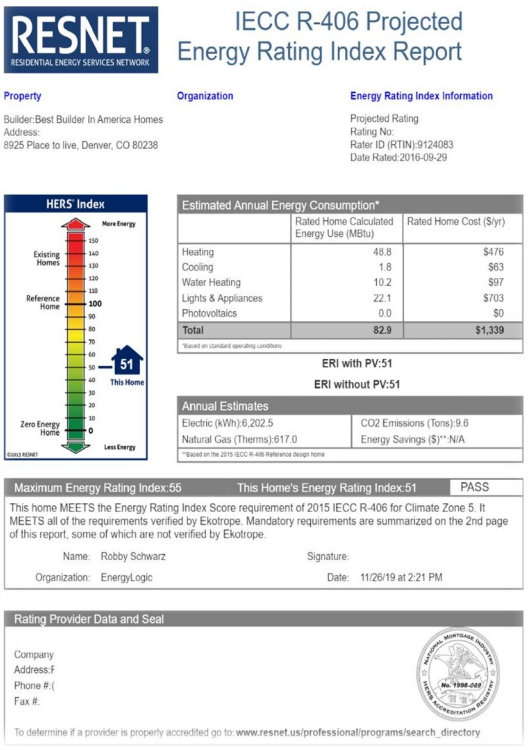
ENERGY RATING INDEX R406

This energy compliance path is similar to an existing program. This path does utilize a twin building concept. The standard reference design is based off the U-factor prescriptive values found in the 2006 IECC. The proposed design can utilize values desired in the design, but nothing less than the established backstop values of the 2006 IECC.

This path has two options included and it is determined if the project utilizes renewable energy in the calculation. Very specific requirements are included when utilizing renewable energy to obtain compliance.

Project must comply with all sections that are listed as mandatory.

This path requires that it is verified by a third party.



RESNET
RESIDENTIAL ENERGY SERVICES NETWORK

IECC R-406 Projected Energy Rating Index Report

Property
Builder:Best Builder In America Homes
Address:
8925 Place to live, Denver, CO 80238

Organization

Energy Rating Index Information
Projected Rating
Rating No:
Rater ID (RTIN):9124083
Date Rated:2016-09-29

HERS® Index
More Energy
Existing Homes
Reference Home
100
51
This Home
Zero Energy Home
0
Less Energy

Estimated Annual Energy Consumption*

	Rated Home Calculated Energy Use (MBtu)	Rated Home Cost ($/yr)
Heating	48.8	$476
Cooling	1.8	$63
Water Heating	10.2	$97
Lights & Appliances	22.1	$703
Photovoltaics	0.0	$0
Total	82.9	$1,339

*Based on standard operating conditions

ERI with PV:51
ERI without PV:51

Annual Estimates

Electric (kWh):6,202.5	CO2 Emissions (Tons):9.6
Natural Gas (Therms):617.0	Energy Savings ($)**:N/A

**Based on the 2015 IECC R-406 Reference design home

Maximum Energy Rating Index:55 | This Home's Energy Rating Index:51 | PASS

This home MEETS the Energy Rating Index Score requirement of 2015 IECC R-406 for Climate Zone 5. It MEETS all of the requirements verified by Ekotrope. Mandatory requirements are summarized on the 2nd page of this report, some of which are not verified by Ekotrope.

Name: Robby Schwarz Signature:
Organization: EnergyLogic Date: 11/26/19 at 2:21 PM

Rating Provider Data and Seal

Company
Address:F
Phone #:(
Fax #:

To determine if a provider is properly accredited go to: www.resnet.us/professional/programs/search_directory

Compliance is determined by the energy rating index score and it can not exceed the number listed in Table R406.4. The lower the number the better.

REMRate or Ekotrope are soft-ware that are often used.