



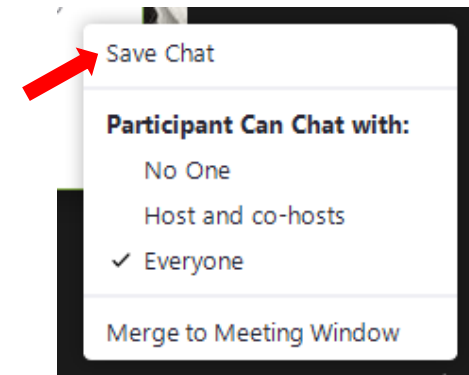
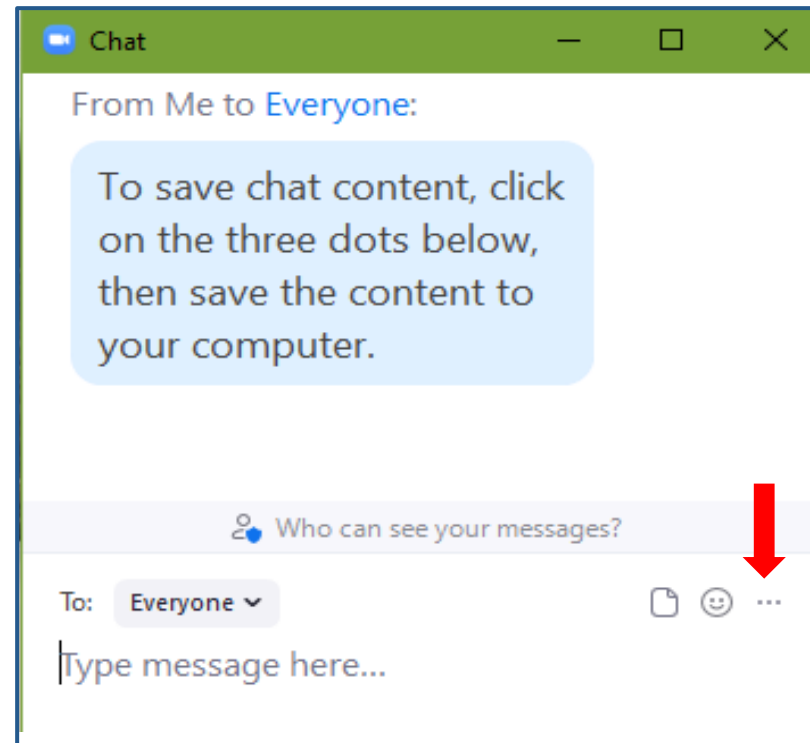
# Using REScheck for Compliance with Maine IECC-2015

© 2021 Richard Karg



# How to get the most from today's program:

1. **Mute your microphone** during the presentation.
2. **Do ask workshop related questions.** Type your questions (to Everyone) into the meeting chat box.
3. **Save the meeting chat** that contains answers to questions, lists of resources, and helpful links to your computer before you leave the program.
4. **Code specific questions** should be directed to the State Fire Marshal's Office Building Codes: <https://www.maine.gov/dps/fmo/building-codes>.



# Additional Energy Code Resources

- **Additional energy code workshops**  
<https://www efficiencymaine.com/professional-training/building-energy-code-workshops/>
- **Additional building energy code resources**  
<https://www efficiencymaine.com/building-energy-codes/>
- **State Fire Marshal's Building Codes**  
<https://www.maine.gov/dps/fmo/building-codes>

**IAQ & Energy Symposium**  
[www.iaqandenergy.com](http://www.iaqandenergy.com)



[www.maineindoorair.org](http://www.maineindoorair.org)  
207-626-8115  
[Christy@maineindoorair.org](mailto:Christy@maineindoorair.org)

# Instructor, Rick Karg

- Member of MUBEC Board (2008 – 2013)
- Received Phillip C. Hastings award from Efficiency Maine in 2015
- Inducted into the Building Performance Institute (BPI) Hall of Fame in 2016
- Chair of ASHRAE Residential Buildings Committee
- President of Residential Energy Dynamics (RED)

# Workshop Description

This training provides the necessary details of the use of the free REScheck software (computer or web based) for determining compliance with IECC-2015.

An introduction to the IECC-2015 includes the three residential compliance approaches of prescriptive, building UA (component) tradeoff, and energy analysis (performance alternative).

Using REScheck, the UA trade-off method is explained in detail with an example, leading to compliance.

# Learning Objectives

1. Know the differences among the three compliance paths of the IECC-2015, including prescriptive, component tradeoff, and performance.
2. Understand how REScheck functions and calculates building envelope compliance with the IECC-2015.
3. Be able to identify and correctly enter construction specifications required by the REScheck software.
4. Understand how to create inspection checklists and compliance reports/certificates with the REScheck software.



# Overview



# The I-Codes and REScheck

- REScheck is a tool for verifying compliance with the International Energy Conservation Code (IECC) and parts of the International Residential Code (IRC)
- This workshop focuses on the use of REScheck (desktop version) and will touch on requirements of the IECC
- For a more detailed examination of the IECC and the IRC, please study those documents



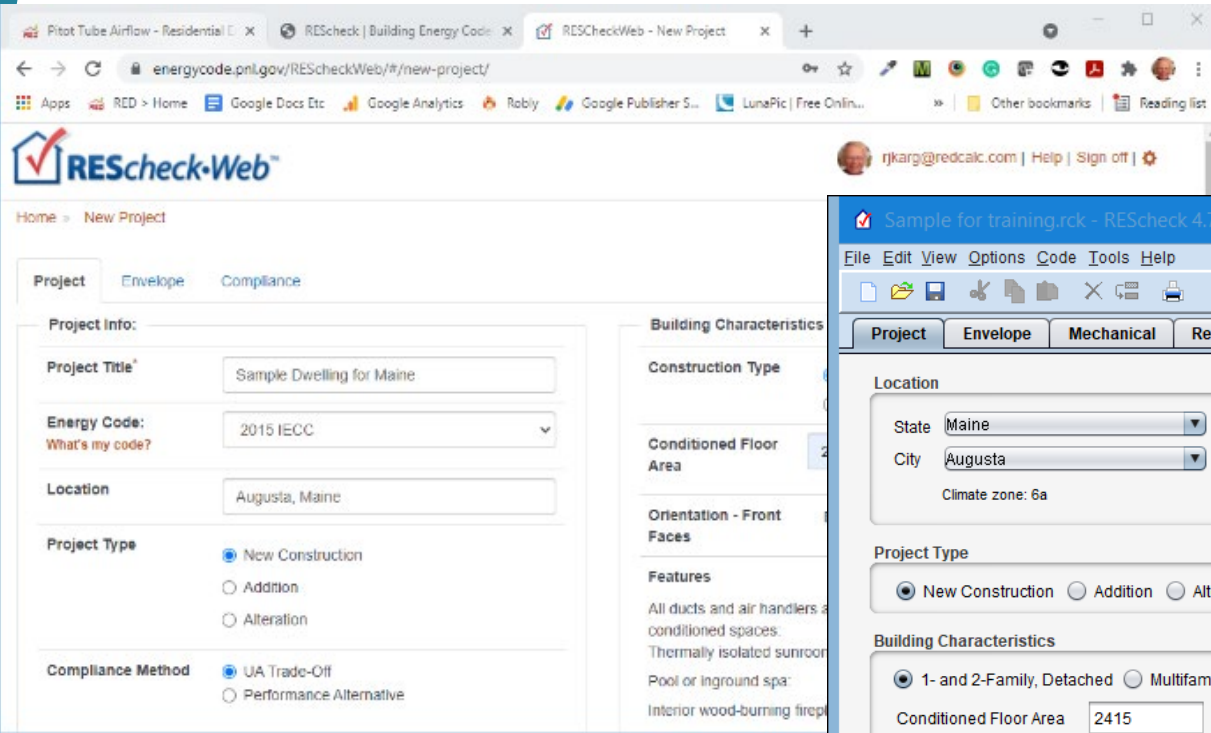
# REScheck

- Available as download (desktop) version and web-based version. We will use desktop version for this workshop.
- Must set to the IECC-2015 version under “Code” dropdown.
- Download includes (as of November 2021)
  - REScheck v4.7.2
  - AreaCalc, v2.4.0

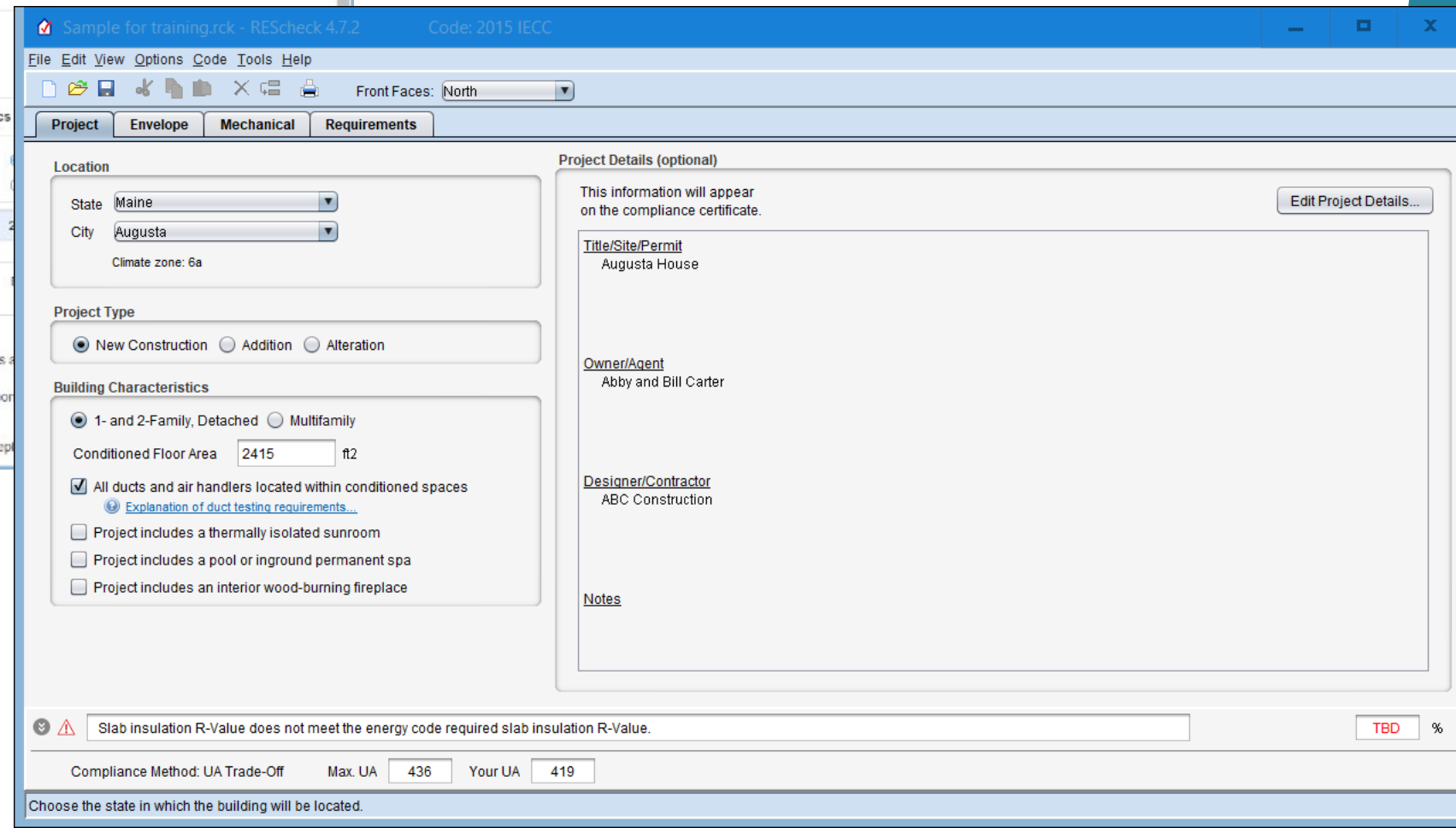
# REScheck

Download (desktop) version 4.7.2

Windows ONLY, NO Mac version



The screenshot shows the REScheck-Web interface in a web browser. The browser tabs include "Pitot Tube Airflow - Residential", "REScheck | Building Energy Code", and "REScheckWeb - New Project". The address bar shows "energycode.pnl.gov/REScheckWeb/#/new-project/". The page has a header with the REScheck-Web logo and a user profile "rjkarg@redcalc.com | Help | Sign off |". The main content area is titled "Home > New Project" and has three tabs: "Project", "Envelope", and "Compliance". The "Project" tab is active, showing "Project Info:" with fields for "Project Title" (Sample Dwelling for Maine), "Energy Code" (2015 IECC), "Location" (Augusta, Maine), "Project Type" (New Construction, Addition, Alteration), and "Compliance Method" (UA Trade-Off, Performance Alternative). To the right, "Building Characteristics" are listed: "Construction Type", "Conditioned Floor Area", "Orientation - Front Faces", and "Features" (All ducts and air handlers in conditioned spaces, Thermally isolated sunroom, Pool or inground spa, Interior wood-burning fireplace).



The screenshot shows the desktop version of REScheck 4.7.2. The title bar is "Sample for training.rck - REScheck 4.7.2" with "Code: 2015 IECC". The menu bar includes "File", "Edit", "View", "Options", "Code", "Tools", and "Help". The toolbar has icons for file operations and a "Front Faces" dropdown set to "North". The main window has tabs for "Project", "Envelope", "Mechanical", and "Requirements". The "Project" tab is active, showing "Location" (State: Maine, City: Augusta, Climate zone: 6a), "Project Type" (New Construction, Addition, Alteration), and "Building Characteristics" (1- and 2-Family, Detached; Multifamily; Conditioned Floor Area: 2415 ft²; checkboxes for duct testing, sunroom, pool/spa, and fireplace). To the right, "Project Details (optional)" includes fields for "Title/Site/Permit" (Augusta House), "Owner/Agent" (Abby and Bill Carter), "Designer/Contractor" (ABC Construction), and "Notes". A status bar at the bottom shows a warning: "Slab insulation R-Value does not meet the energy code required slab insulation R-Value." with a "TBD" value. Below this, it shows "Compliance Method: UA Trade-Off", "Max. UA: 436", and "Your UA: 419". The footer text says "Choose the state in which the building will be located."

Web-based version

Can exchange files between

Download version and web version

Allows Portland, ME "stretch code"  
– 2021 IECC

# REScheck Dwelling Types

- One- and two-family detached
- Multifamily buildings three stories or less above grade
- Alteration - “Any construction, retrofit or renovation to an existing structure [-] other than repair or addition [-] that requires a permit. Also, a change in a building, electrical, gas, mechanical or plumbing system that involves an extension, addition or change to the arrangement, type or purpose of the original installation that requires a permit.” [IRC-2015, Chapter 2]
- Addition - “An extension or increase in the floor area or height of a building structure.” [IRC-2015, Chapter 2] *Only significant for REScheck if an increase in conditioned area.*


“Residential Building: For this code, includes detached one-and two-family dwellings (townhouses) as well as Group R-2, R-3 and R-4 buildings three stories or less in height above grade plane.”

# REScheck Dwelling Types

“Residential Building: For this code, includes detached one-and two-family dwellings (townhouses) as well as Group R-2, R-3 and R-4 buildings three stories or less in height above grade plane.”

- Residential Group R is the occupancy group used for buildings that include sleeping rooms and are not institutional and are not generally regulated by the International Residential Code. The IRC typically regulates single-family homes and duplexes; any structure with more than two units is in the IBC. There are four different occupancy groups within the “R” classification.
  - R-1. This group is for transient uses like hotels, motels, and boarding houses. *Commercial compliance required*
  - R-2 is the group we see most often and it for residences where occupants are primarily permanent. This includes apartments, dormitories, fraternities and sororities. It also includes vacation timeshares (again with more than two units) and convents and monasteries. Congregate living facilities with 16 or fewer occupants are in group R-3.
  - R-3 is something of a catchall group for permanent occupancies that aren’t R-1, R-2, or R-4. These include buildings that are in the IBC but have no more than two units. Adult facilities and child care facilities that provide accommodation for five or less people less than 24 hours a day are R-3. Where these facilities are in a single family home they must comply with the IRC.
  - R-4 is for residential care/assisted living facilities including more than five and not more than 16 occupants. Generally it is very similar to R-3’s requirements.

# IECC-2015 Compliance Approaches - 1

- Prescriptive
  - Comply with Table R402.1.2 in IECC-2015 for your climate zone in Maine, 6 or 7 (Aroostook county)
- Total UA Trade-Off 
  - REScheck “UA Trade-Off” selection (under “Options” in top dropdown)
  - Trade off below-prescriptive windows for above-prescriptive walls, for example.
  - “Mechanical” not included

# IECC-2015 Compliance Approaches - 2

- Prescriptive
  - Comply with Table R402.1.2 in IECC-2015 for your climate zone in Maine, 6 or 7 (Aroostook county)

TABLE R402.1.2 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT<sup>a</sup>

CLIMATE ZONE	FENESTRATION U-FACTOR <sup>b</sup>	SKYLIGHT <sup>b</sup> U-FACTOR	GLAZED FENESTRATION SHGC <sup>b, e</sup>	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE <sup>i</sup>	FLOOR R-VALUE	BASEMENT <sup>c</sup> WALL R-VALUE	SLAB <sup>d</sup> R-VALUE & DEPTH	CRAWL SPACE <sup>c</sup> WALL R-VALUE
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	38	13	4/6	13	0	0	0
3	0.35	0.55	0.25	38	20 or 13+5 <sup>h</sup>	8/13	19	5/13 <sup>f</sup>	0	5/13
4 except Marine	0.35	0.55	0.40	49	20 or 13+5 <sup>h</sup>	8/13	19	10/13	10, 2 ft	10/13
5 and Marine 4	0.32	0.55	NR	49	20 or 13+5 <sup>h</sup>	13/17	30 <sup>g</sup>	15/19	10, 2 ft	15/19
6	0.32	0.55	NR	49	20+5 or 13+10 <sup>h</sup>	15/20	30 <sup>g</sup>	15/19	10, 4 ft	15/19
7 and 8	0.32	0.55	NR	49	20+5 or 13+10 <sup>h</sup>	19/21	38 <sup>g</sup>	15/19	10, 4 ft	15/19

# IECC-2015 Compliance Approaches - 3

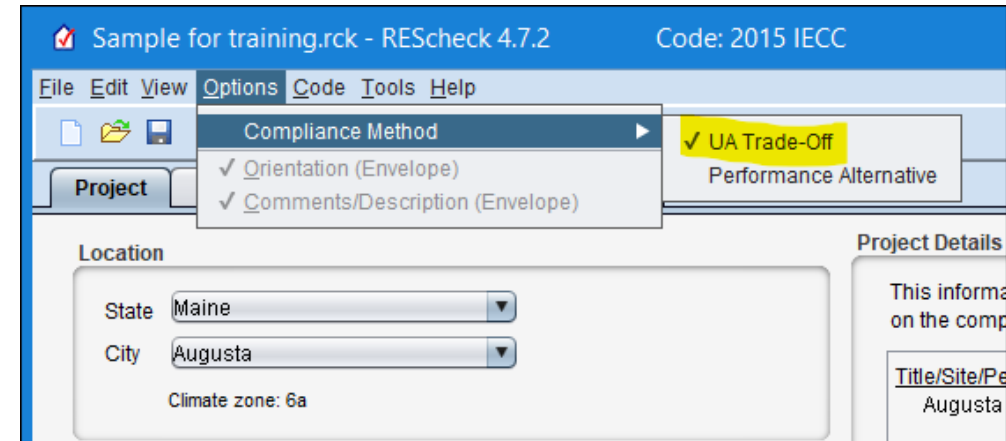
Don't choose Performance Alternative unless your dwelling fails. This is harder to use.

- Performance Alternative



- REScheck “Performance Alternative” selection (under “Options” in top dropdown)
  - Includes all features of “Total UA Trade-Off”, PLUS heating and cooling under the “Mechanical” tab, and solar gain (orientation)
  - Efficient heating/cooling “systems may impact results, however no trade-off credits for high efficiency mechanical equipment are allowed.” (REScheck help)
- Energy Analysis (Systems Performance Approach)
    - REScheck does not calculate this approach
    - Requires more detail and more time
    - Proposed design compared with reference or baseline house based on annual energy use
    - May use REM Rate, REM Design, Energy Gauge, or other qualifying software

# IECC-2015 Compliance Approaches - 4



- Total UA Trade-Off
  - Trade off below-prescriptive windows for above-prescriptive walls, for example.
  - “Mechanical” not included
- Performance Alternative
  - Includes all features of “Total UA Trade-Off”, PLUS heating and cooling under the “Mechanical” tab, and solar gain (orientation)
  - Efficient heating/cooling “systems may impact results, however no trade-off credits for high efficiency mechanical equipment are allowed.” (REScheck help)

Don't choose Performance Alternative unless your dwelling fails. This is harder to use.



STATUS ▾

IMPACTS ▾

TECHNICAL ASSISTANCE ▾

## REScheck

### Getting Started

REScheck-Web™ is accessible directly from the website without having to download and install.

REScheck™ Desktop for Windows® may be downloaded and installed directly to your desktop.

- See if your state or county can use REScheck to show compliance.
- View a list of supported software versions for code compliance tools.

### Residential Compliance Using REScheck™

The REScheck product group makes it fast and easy for builders, designers, and contractors to determine whether new homes, additions, and alterations meet the requirements of the IECC or a number of state energy codes. REScheck also simplifies compliance determinations for building officials, plan checkers, and inspectors by allowing them to quickly determine if a low-rise residence meets the code.

REScheck is appropriate for insulation and window trade-off calculations in residential detached one- and two-family buildings and multi-family buildings three stories or less in height above grade, such as apartments, condominiums, and townhouses. REScheck works by performing a simple U-factor x Area (UA) calculation for each building assembly to determine the overall UA of a building. The UA that would result from a building conforming to the code requirements is compared against the UA for your building. If the total heat loss (represented as a UA) through the envelope of your building does not exceed the total heat loss from the same building conforming to the code, the software generates a report that declares your building is compliant with the code.

### REScheck Support

Have a compliance question or need assistance with the software?

BEC's team of building energy codes experts is available to answer specific questions submitted through our web-based help desk.

REScheck Technical Support Document 

#### LATEST RELEASE

[LAUNCH RESCHECK-WEB](#)

#### DESKTOP VERSION

DESKTOP VERSION/BUILD: VERSION 4.7.1.2

PLATFORM: WINDOWS

RELEASE DATE: OCTOBER 22, 2020

#### RELEASE NOTES

##### WHAT'S NEW:

##### VERSION 4.7.1.2 ADDRESSES THE FOLLOWING:

- 2011 VERMONT RBES HAS BEEN DISCONTINUED FROM SUPPORT; 2020 VERMONT IS SUPPORTED ALTHOUGH ONLY IN RESCHECKWEB.
- MINOR UPDATES WERE MADE TO 2017 FLORIDA CLIMATE ZONE 1 FENESTRATION U-FACTOR REQUIREMENT

##### RESCHECK DESKTOP 4.7.1 SUPPORTED CODES:

- 2009, 2012, AND 2015 IECC (2018 IECC IS ONLY SUPPORTED IN RESCHECK-WEB)
- STATE ENERGY CODES: FLORIDA, MASSACHUSETTS, NEW YORK CITY, PUERTO RICO, UTAH, VERMONT (2020 MASSACHUSETTS AND 2020 VERMONT ARE ONLY SUPPORTED IN RESCHECK-WEB)


#### DOWNLOAD



[RESCHECK 4.7.1.2 SETUP.EXE](#)

73.39 MB

# Download vs Web-Based Version

- May exchange files between download and web-based versions.
  - Login to web-based version
  - My Projects tab, then Import button



 [rjkarg@redcalc.com](#) | [Help](#) | [Sign off](#) | 

Home

My Projects



Shared Project Requests

New Project

Create Sample Project

Import

Search

<input type="checkbox"/>	Project	Last Updated ^	Energy Code	Status	Sharing
<input type="checkbox"/>	Maine Dwelling 	Jul 12, 2021 3:53:50 PM	2015 IECC	<div>Draft</div>	

Help

Getting Started

Check if you can use REScheck

# REScheck Steps

1) Select “Preferences” at  
“Edit” dropdown

2) Enter project information

3) Enter envelope  
components

4) Enter mechanical  
equipment (optional)

5) Check  
“Requirements” tab

6) View/print report  
Save

# Example House – Live Desktop Version



Sample for training.rck - REScheck 4.7.2 Code: 2015 IECC

File Edit View Options Code Tools Help

Front Faces: North

Project Envelope Mechanical Requirements

Ceiling Skylight Wall Window Door Basement Floor Crawl Wall

	Component	Assembly	Orientation	Gross Area or Slab Perimeter		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)	Comments/Description (Optional)
▼ Building													
1	Ceiling 1	Raised or Energy Truss ▼		2415	ft2	30.0	22.0	0.019	46				
2	▼ Wall 1 - North	Wood Frame, 24" o.c. ▼	Front ▼	911	ft2	20.0	5.0	0.043	22				
3	Window 1	Vinyl/Fiberglass Fram... ▼	Front	369	ft2			0.3	111				
4	Door 1	Solid ▼	Front	21	ft2			0.5	11				
5	▼ Wall 2, South	Wood Frame, 24" o.c. ▼	Back ▼	834	ft2	20.0	5.0	0.043	29				
6	Window 2	Vinyl/Fiberglass Fram... ▼	Back	149	ft2			0.3	45				
7	Door 2	Glass ▼	Back	21	ft2			0.65	14				
8	Wall 3, West	Wood Frame, 24" o.c. ▼	Left Side ▼	492	ft2	20.0	5.0	0.043	21				
9	▼ Wall 4, East	Wood Frame, 24" o.c. ▼	Right Side ▼	632	ft2	20.0	5.0	0.043	27				
10	Window 3	Vinyl/Fiberglass Fram... ▼	Right Side	15	ft2			0.3	5				
11	Knee Wall We	Wood Frame, 16" o.c. ▼	Left Side ▼	69	ft2	20.0	0.0	0.059	4				
12	Knee Wall Eas	Wood Frame, 16" o.c. ▼	Right Side ▼	84	ft2	20.0	0.0	0.059	5				
13	Basement Wa	Solid Concrete or Mas... ▼	Right Side ▼	216	ft2	0.0	15.0	0.054	12	9.0	4.5	9.0	
14	Basement Wa	Solid Concrete or Mas... ▼	Left Side ▼	144	ft2	0.0	15.0	0.054	8	9.0	4.5	9.0	
15	Basement Wa	Solid Concrete or Mas... ▼	Front ▼	684	ft2	0.0	15.0	0.048	33	9.0	7.0	9.0	
16	Floor 1	All-Wood Joist/Truss:O... ▼		783	ft2	30.0	0.0	0.033	26				
17	Floor 2	Slab-On-Grade:Unhea... ▼		93	ft		10.0	0.655	0			4.0	Perimeter entry

Passes

Compliance Method: UA Trade-Off Max. UA 436 Your UA 419

3.9 % Better Than Code

Enter the R-value of continuous insulation, or enter 0 if none will be installed.

Compliance bar

20

Status bar

# “Preferences” (“Edit” Menu Item)

## General

- File options
- Update check
- Upload usage data

## Project

- Code and location
- Envelope comments

## Applicant

- Default project details

## Reports

- Signatures
- Email reports...

# “Preferences” (“Edit” Menu Item)

The 'Preferences' dialog box has a blue title bar with the text 'Preferences' and a close button. Below the title bar are four tabs: 'General', 'Project', 'Applicant', and 'Reports'. The 'General' tab is selected. The dialog is divided into three sections: 'File Options', 'Version Update Check', and 'Upload Usage Data'. In the 'File Options' section, there is a text field for 'File location to use on startup (leave blank to use last visited file location):' with a 'Browse...' button next to it. Below this is a dropdown for 'Number of recent files on File menu:' set to '5'. There are two checkboxes: 'Show full path names of data files in title bar.' (unchecked) and 'Block other users from opening currently opened data file.' (checked). The 'Version Update Check' section has a dropdown for 'Automatically check for version updates:' set to 'Every month' and a note: 'Available updates can also be determined using the 'Check for updates' option in the help menu.' The 'Upload Usage Data' section has a note: 'Automatically upload anonymous project data for statistical analysis.' and a checked checkbox for 'Enable 'Upload Project Data''. At the bottom right are 'OK' and 'Cancel' buttons.

Preferences

General Project Applicant Reports

**File Options**

File location to use on startup (leave blank to use last visited file location):

Number of recent files on File menu: 5

☐ Show full path names of data files in title bar.

☒ Block other users from opening currently opened data file.

**Version Update Check**

Automatically check for version updates: Every month

Available updates can also be determined using the 'Check for updates' option in the help menu.

**Upload Usage Data**

Automatically upload anonymous project data for statistical analysis.

☒ Enable 'Upload Project Data'

OK Cancel

The 'Preferences' dialog box has a blue title bar with the text 'Preferences' and a close button. Below the title bar are four tabs: 'General', 'Project', 'Applicant', and 'Reports'. The 'Project' tab is selected. The dialog is divided into two sections: 'Code/Location' and 'Envelope'. The 'Code/Location' section has a checked checkbox for 'Use the following settings when starting the program or a new project.' Below this are three dropdowns: 'Code:' set to '2015 IECC', 'State:' set to 'Maine', and 'City:' set to 'Augusta'. There is a 'Lookup Your Code...' button next to the 'Code:' dropdown. The 'Envelope' section has a note: 'Select the options to apply in the 'Envelope' folder:' and a checked checkbox for 'Enable Comments'. At the bottom right are 'OK' and 'Cancel' buttons.

Preferences

General Project Applicant Reports

☒ Use the following settings when starting the program or a new project.

**Code/Location**

Code: 2015 IECC

State: Maine

City: Augusta

[Lookup Your Code...](#)

**Envelope**

Select the options to apply in the 'Envelope' folder:

☒ Enable Comments

OK Cancel

# “Preferences” (“Edit” Menu Item)

The 'Applicant' tab in the 'Preferences' dialog box contains the 'Applicant Information' section. It instructs the user to enter information for starting the program or a new project. The form is divided into two columns: 'Owner/Agent' and 'Designer/Contractor'. Each column has input fields for First Name, Last Name, Company, Address 1, Address 2, City, State (a dropdown menu currently showing 'Maine'), Zip Code, Phone #, and Email. Below the input fields are 'Clear inputs' buttons for each column. At the bottom right of the dialog are 'OK' and 'Cancel' buttons.

	Owner/Agent	Designer/Contractor
First Name:	<input type="text"/>	<input type="text"/>
Last Name:	<input type="text"/>	<input type="text"/>
Company:	<input type="text"/>	<input type="text"/>
Address 1:	<input type="text"/>	<input type="text"/>
Address 2:	<input type="text"/>	<input type="text"/>
City:	<input type="text"/>	<input type="text"/>
State:	Maine	Maine
Zip Code:	<input type="text"/>	<input type="text"/>
Phone #:	<input type="text"/>	<input type="text"/>
Email:	<input type="text"/>	<input type="text"/>

The 'Reports' tab in the 'Preferences' dialog box contains the 'Report Signatures' and 'Email Reports' sections. The 'Report Signatures' section explains that the Compliance Certificate includes a signature line and shows a template with fields for Name - Title, Signature, and Date. It also states that additional signature lines can be added. Below this, there are three 'Add Line' checkboxes, each followed by a 'Name - Title' input field. The 'Email Reports' section instructs the user to enter information for emailing reports, with input fields for Recipient Name(s), Recipient Email Address(es), and Email Address(es) for CC. A note specifies to use a semicolon to separate multiple names and addresses. At the bottom right of the dialog are 'OK' and 'Cancel' buttons.

**Report Signatures**

The Compliance Certificate includes a signature line that appears as follows:

Name - Title	Signature	Date

Additional signature lines will be added to the Compliance Certificate when selected below. You may also enter a name and title to display on each 'Name - Title' line (optional).

☐ Add Line

☐ Add Line

**Email Reports**

Enter any of the following information to use when Emailing reports.

Recipient Name(s):

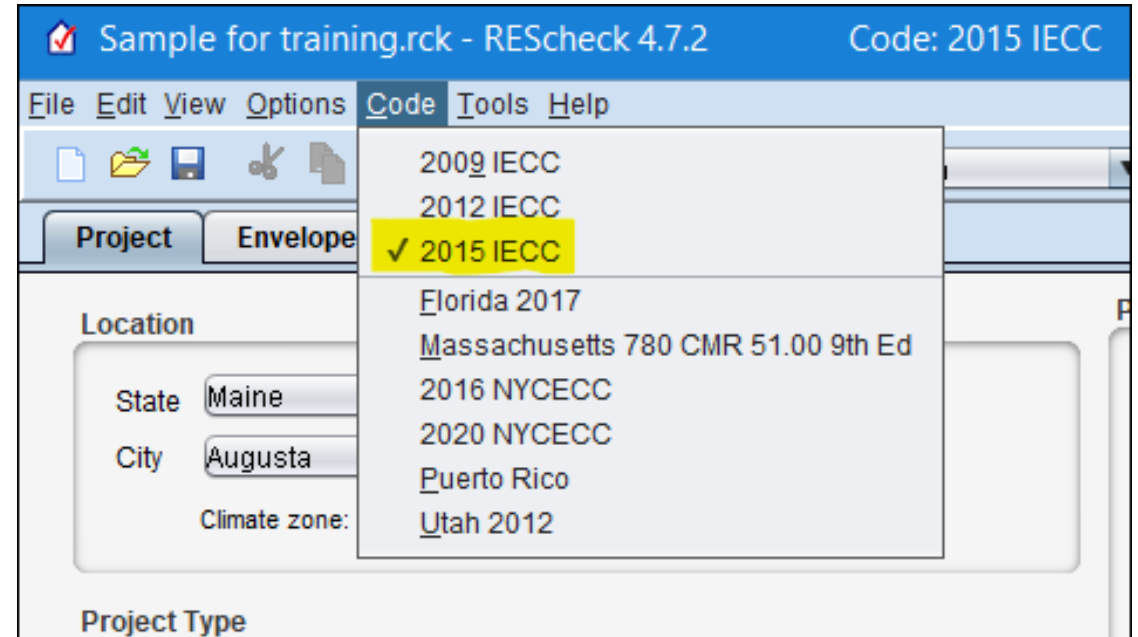
Recipient Email Address(es):

Email Address(es) for CC:

(use a semicolon to separate multiple names and addresses)

# “Code”

- This is really a Preference
- Once you select the IECC code year, each new project will default to that code year
- If working in Portland, may use the web version of REScheck and select **2021 IECC** for compliance with Portland’s “stretch code”





# REScheck Steps

1) Select “Preferences” at  
“Edit” dropdown

3) Enter envelope  
components

5) Check  
“Requirements” tab

2) Enter project information

4) Enter mechanical  
equipment (optional)

6) View/print report  
Save

# Project Information (“Project” tab)

- Project Location
  - State and City (climate zone)
  - Web version allows county input
- Project Type
  - New Construction
  - Addition
  - Alteration
- Building Characteristics
  - One- and Two-Family Detached
  - Multifamily three stories or fewer above grade
  - Check boxes (ducts, sunroom, pool/spa, wood-burning fireplace). Some of these trigger additional inputs.

Sample for training.rck - REScheck 4.7.2 Code: 2015 IECC

File Edit View Options Code Tools Help

Front Faces: North

**Project** Envelope Mechanical Requirements

**Location**

State:

City:

Climate zone: 6a

**Project Type**

☒ New Construction ☐ Addition ☐ Alteration

**Building Characteristics**

☒ 1- and 2-Family, Detached ☐ Multifamily

Conditioned Floor Area:  ft²

☒ All ducts and air handlers located within conditioned spaces  
[Explanation of duct testing requirements...](#)

☐ Project includes a thermally isolated sunroom

☐ Project includes a pool or inground permanent spa

☐ Project includes an interior wood-burning fireplace

**Project Details (optional)**

This information will appear on the compliance certificate. [Edit Project Details...](#)

Title/Site/Permit  
Augusta House

Owner/Agent  
Abby and Bill Carter

Designer/Contractor  
ABC Construction

Notes

Passes 3.9 % Better Than Code

Compliance Method: UA Trade-Off Max. UA: 436 Your UA: 419

Choose the state in which the building will be located.

# Multifamily if. . .

Tip

- Residential
- Three stories or less in height above grade (ASHRAE 62.2-2016 uses different definition of multifamily – no height limit)
- Three or more attached dwelling units
- Examples
  - Apartments
  - Condominiums
  - Townhouses
  - Dormitories
  - Rowhouses



# REScheck Steps

1) Select “Preferences” at  
“Edit” dropdown

3) Enter envelope  
components

5) Check  
“Requirements” tab

2) Enter project information

4) Enter mechanical  
equipment (optional)

6) View/print report  
Save

# The Envelope

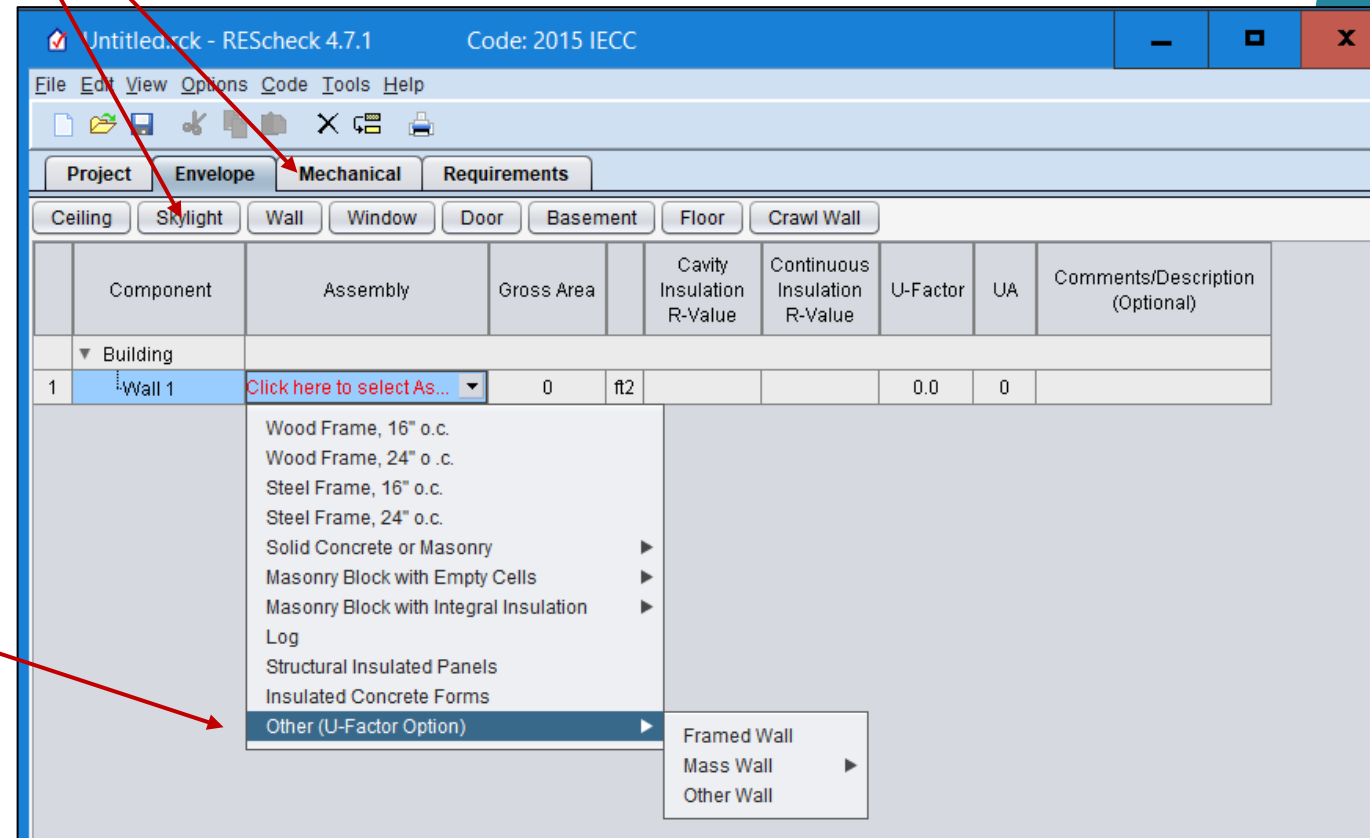
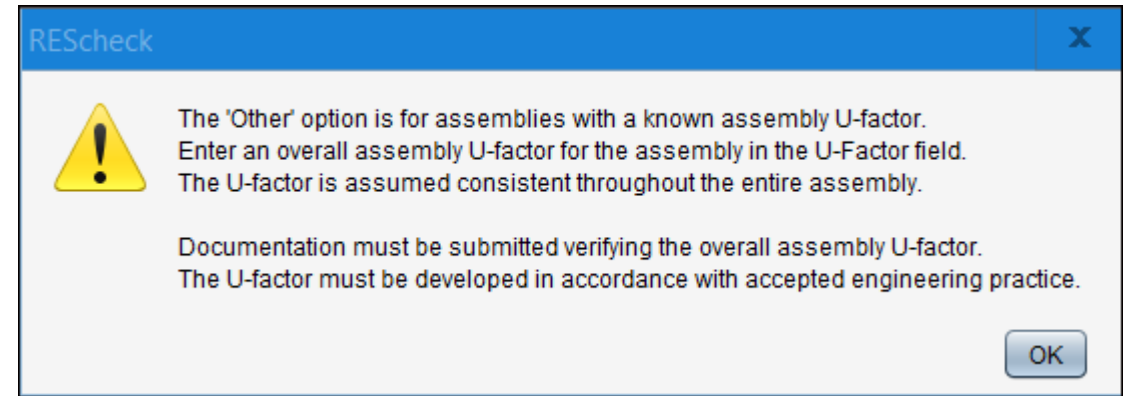


The designer determines the envelope boundaries

Make sure to include ONLY applicable components

# Envelope Components

- Don't need to use each tab or button
- Group similar components
- Include rim joists with walls
  - Should be same R-value as wall
- Use gross area, except slab on grade (linear feet)
  - Gross wall area should include exterior dimensions
- Use "Other" dropdown choice as needed
  - Must verify U-factor/R-value calculation with documentation



# Envelope Components

- Window ratings: U-factor and SHGC (solar heat gain coefficient). Need NFRC specs (coming up)
- Cavity R-value: Insulation between framing members
- Continuous R-value: Insulation NOT broken by framing members

Tip

Sample for training.rck - REScheck 4.7.2 Code: 2015 IECC

File Edit View Options Code Tools Help

Front Faces: North

Project Envelope Mechanical Requirements

Ceiling Skylight Wall Window Door Basement Floor Crawl Wall

	Component	Assembly	Orientation	Gross Area or Slab Perimeter	Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)	Comments/Description (Optional)
▼ Building												
1	Ceiling 1	Raised or Energy Truss		2415	ft2	30.0	22.0	0.019	46			
2	Wall 1 - North	Wood Frame, 24" o.c.	Front	911	ft2	20.0	5.0	0.043	22			
3	Window 1	Vinyl/Fiberglass Fram...	Front	369	ft2			0.3	111			
4	Door 1	Solid	Front	21	ft2			0.5	11			
5	Wall 2, South	Wood Frame, 24" o.c.	Back	834	ft2	20.0	5.0	0.043	29			
6	Window 2	Vinyl/Fiberglass Fram...	Back	149	ft2			0.3	45			
7	Door 2	Glass	Back	21	ft2			0.65	14			
8	Wall 3, West	Wood Frame, 24" o.c.	Left Side	492	ft2	20.0	5.0	0.043	21			
9	Wall 4, East	Wood Frame, 24" o.c.	Right Side	632	ft2	20.0	5.0	0.043	27			
10	Window 3	Vinyl/Fiberglass Fram...	Right Side	15	ft2			0.3	5			
11	Knee Wall We	Wood Frame, 16" o.c.	Left Side	69	ft2	20.0	0.0	0.059	4			
12	Knee Wall Ea	Wood Frame, 16" o.c.	Right Side	84	ft2	20.0	0.0	0.059	5			
13	Basement Wa	Solid Concrete or Mas...	Right Side	216	ft2	0.0	15.0	0.054	12	9.0	4.5	9.0
14	Basement Wa	Solid Concrete or Mas...	Left Side	144	ft2	0.0	15.0	0.054	8	9.0	4.5	9.0
15	Basement Wa	Solid Concrete or Mas...	Front	684	ft2	0.0	15.0	0.048	33	9.0	7.0	9.0
16	Floor 1	All-Wood Joist/Truss/O...		783	ft2	30.0	0.0	0.033	26			
17	Floor 2	Slab-On-Grade: Unhea...		93	ft		10.0	0.655	0			4.0 Perimeter entry

Passes 3.9 % Better Than Code

Compliance Method: UA Trade-Off Max. UA 436 Your UA 419

Enter the R-value of continuous insulation, or enter 0 if none will be installed.

# Envelope Components

## Tip


- Slab-on-grade\* insulation requirements may no longer be traded-off with other assemblies (as of software version 4.7.2)
  - For the Maine climate zones
    - Heated slabs must have R-15 insulation to a depth of 4 feet
    - Unheated slabs must have R-10 insulation to a depth of 4 feet
- There is no IECC code requirement for slabs more than 12 inches below grade, so no need to enter as a floor in REScheck

\*A slab-on-grade is less than 12 inches below grade



# Windows - NFRC Label

National Fenestration Rating Council

 National Fenestration Rating Council® <b>CERTIFIED</b>	<b>World's Best Window Co.</b> Series "2000" Casement Vinyl Clad Wood Frame Double Glazing•Argon Fill•Low E XYZ-X-1-00001-00001	
<b>ENERGY PERFORMANCE RATINGS</b>		
U-Factor (U.S. / I-P)	Solar Heat Gain Coefficient	
<b>0.35</b>	<b>0.32</b>	
<b>ADDITIONAL PERFORMANCE RATINGS</b>		
Visible Transmittance	Air Leakage (U.S. / I-P)	
<b>0.51</b>	<b>≤0.3</b>	
Condensation Resistance		
<b>51</b>	<b>—</b>	
Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information. <a href="http://www.nfrc.org">www.nfrc.org</a>		

**U-factor:** This category measures how well a window prevents heat from escaping the inside. The range is 0.20 to 1.20, and you want to look for low numbers. (The lower the number, the better the window is at holding in heat.)

**Solar heat gain coefficient:** This rating measures how well the window avoids gaining solar heat. The range for this rating is 0 to 1. Like the U-factor rating, you want to look for a low number

**Visible transmittance:** This is a measure of how much light the window lets in. The range is 0 to 1. Unlike the previous two ratings, you want to look for a high number (for maximum natural light).

**Air leakage:** As it sounds, this category measures how well the window protects against air leakage. The range is 0.1 to 0.3. You want to look for a low number: the lower the number, the less drafty the window will be.

**Condensation:** This is an optional category that may or may not appear on the NFRC label. It measures how well a window resists condensation. For this rating, the higher the number, the better the window is.

# Walls, Windows, and Doors

Tip

- Windows and doors are automatically subtracted from the wall area entered above, so enter *gross* wall area
- List appropriate windows and doors under their corresponding wall

Sample for training.rck - REScheck 4.7.2 Code: 2015 IECC

File Edit View Options Code Tools Help

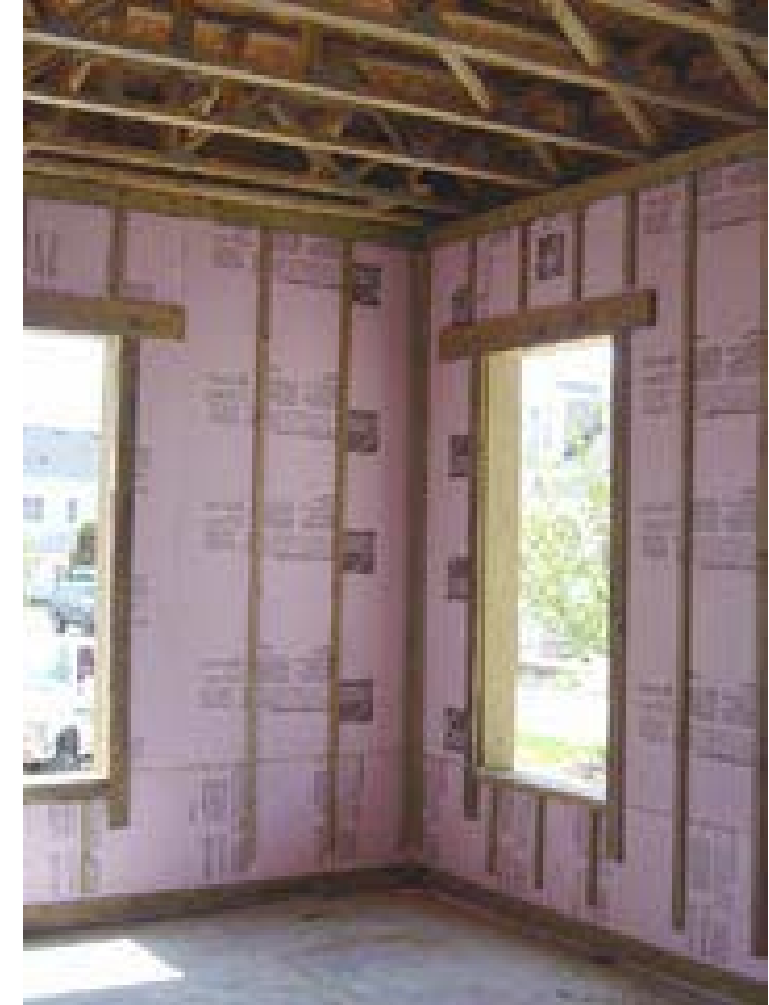
Front Faces: North

Project Envelope Mechanical Requirements

Ceiling Skylight Wall Window Door Basement Floor Crawl Wall

	Component	Assembly	Orientation	Gross Area or Slab Perimeter		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA
	▼ Building								
1	Ceiling 1	Raised or Energy Truss ▼		2415	ft2	30.0	22.0	0.019	46
2	▼ Wall 1 - North	Wood Frame, 24" o.c. ▼	Front ▼	911	ft2	20.0	5.0	0.043	22
3	Window 1	Vinyl/Fiberglass Fram... ▼	Front	369	ft2			0.3	111
4	Door 1	Solid ▼	Front	21	ft2			0.5	11

# Cavity and Continuous Insulation



# Foundations – Enter in REScheck if. . .

- Basement
  - Basement area is conditioned
  - It may be finished or unfinished inside
- Floor
  - The floor separates a conditioned from an unconditioned space
- Crawl Wall
  - This space is not vented to the outdoors and the crawl ceiling is NOT insulated

# Floor or Ceiling?

## Tip

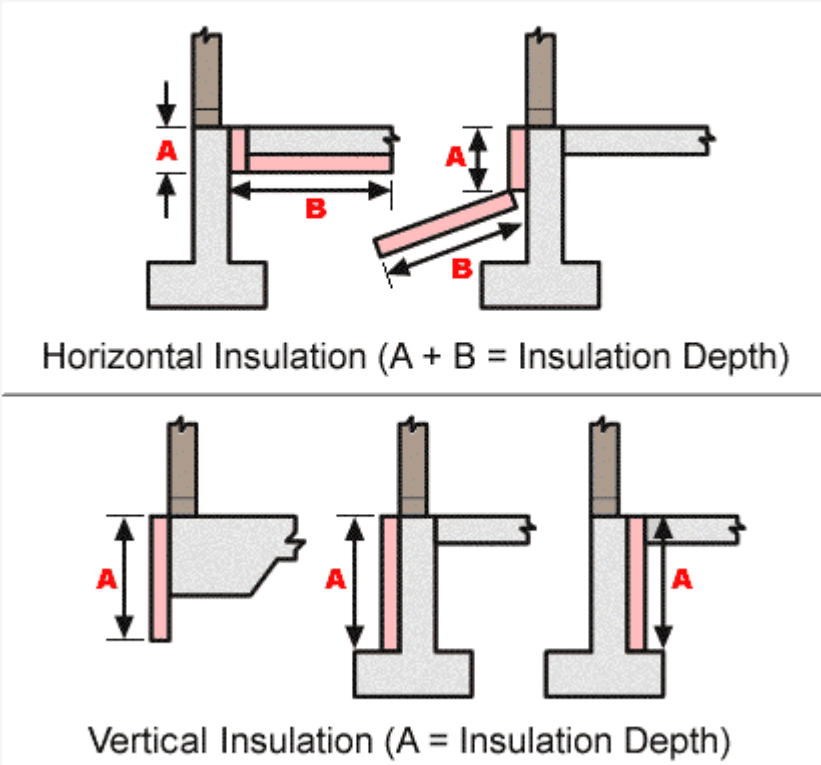
- If you are standing in a *conditioned* space and...
  - The unconditioned air is below you, such as a crawl space or a garage below, designate the building assembly as a floor.
  - The unconditioned air is above you, such as an attic, designate the building assembly as a ceiling.

# Slab-on-Grade Floor

- Slab floor that is less than 12 inches below grade
- For heated slabs, must add R-5 to values in Table R402.1.2
- Slabs are entered as perimeter (linear feet), not as square feet

Slab-On-Grade Floors

Enter the depth of the insulation (ft.), including the total vertical and horizontal distance:



The diagrams illustrate the measurement of insulation depth for a slab-on-grade floor. The top section, labeled 'Horizontal Insulation (A + B = Insulation Depth)', shows two cross-sections of a wall and slab. In the first, a vertical line 'A' represents the wall height and a horizontal line 'B' represents the slab thickness. In the second, a diagonal line 'A' represents the total insulation depth and a horizontal line 'B' represents the slab thickness. The bottom section, labeled 'Vertical Insulation (A = Insulation Depth)', shows three cross-sections of a wall and slab. In each, a vertical line 'A' represents the total insulation depth, which is the height of the wall plus the thickness of the slab.

Horizontal Insulation ( $A + B = \text{Insulation Depth}$ )

Vertical Insulation ( $A = \text{Insulation Depth}$ )

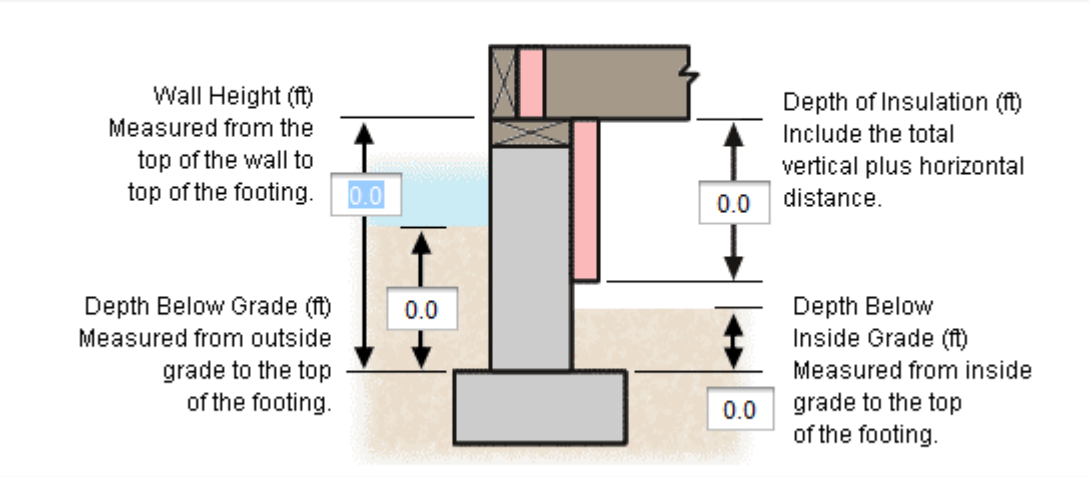
OK Cancel

# Crawl Space Walls

- May insulate the wall instead of the floor
- “shall be permanently fasted to the wall and extend downward from the floor to the finished grade level and then vertically and/or horizontally for at least an additional 24 inches.” R402.2.11

**Unventilated Crawl Space Walls**

The crawl space wall option applies only to walls of unventilated crawl spaces. Enter the specified dimensions in feet (not inches) in the boxes provided.



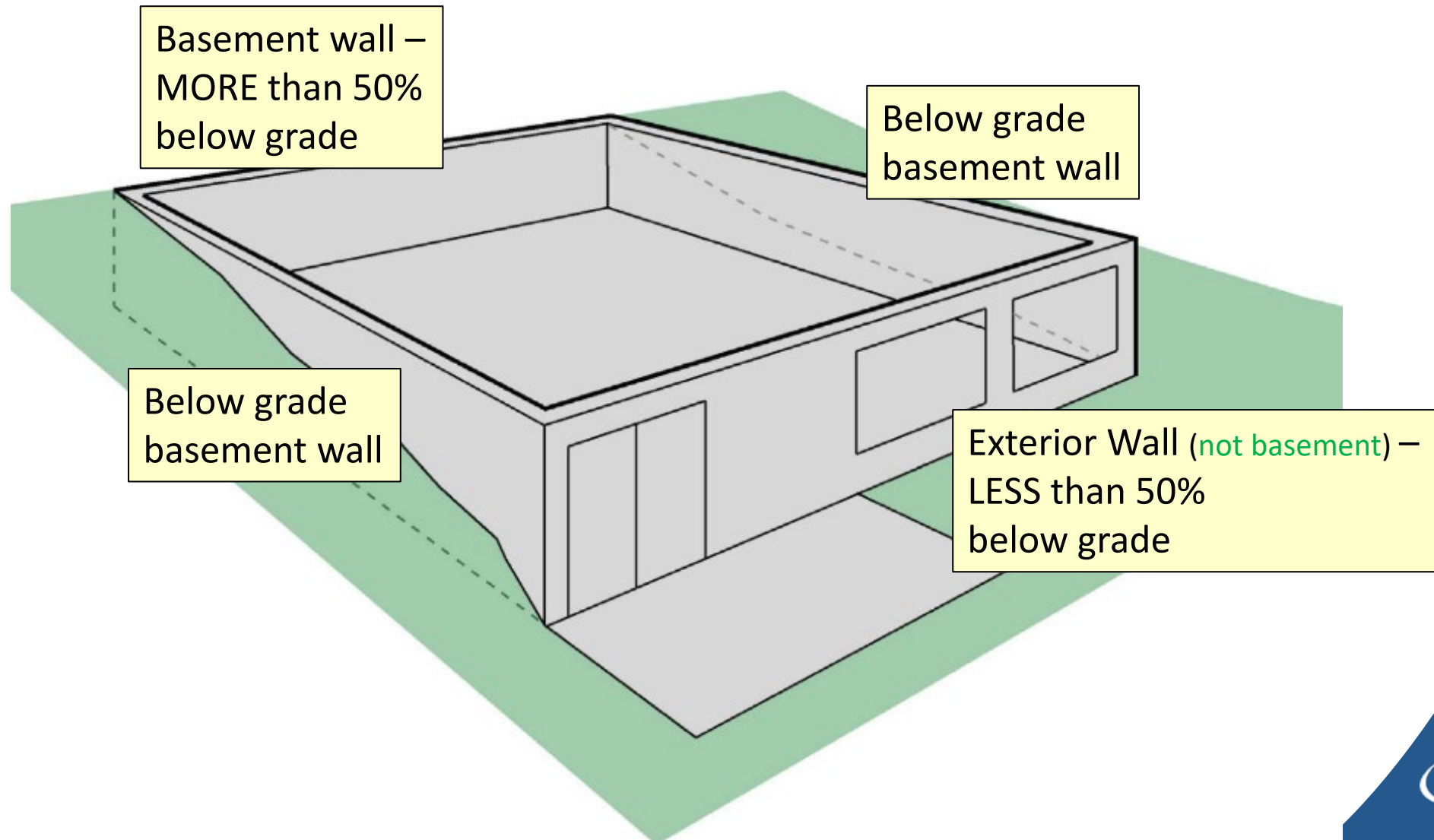
The diagram illustrates a cross-section of a crawl space wall. It shows a vertical wall with a footing at the bottom. The wall extends above the finished grade level and below it. The diagram includes four measurement points with input boxes:

- Wall Height (ft):** Measured from the top of the wall to top of the footing. Input: 0.0
- Depth Below Grade (ft):** Measured from outside grade to the top of the footing. Input: 0.0
- Depth of Insulation (ft):** Include the total vertical plus horizontal distance. Input: 0.0
- Depth Below Inside Grade (ft):** Measured from inside grade to the top of the footing. Input: 0.0

OK Cancel



# What's a Basement Wall?





# Basement Clarification - 1

Tip

- Wall height
  - From top of wall to basement floor
  - If not uniform height, use average height
- Depth below grade
  - Depth at wall extends from outside grade to basement floor
  - If sloped-grade basement wall, use average depth below grade
- Make sure to include conditioned basement in volume calculation for  $ACH_{50}$ ; this make compliance easier

$$ACH_{50} = \frac{CFM_{50}}{\text{Volume} / 60}$$

$$CFM_{50} = ACH_{50} \times (\text{Volume} / 60)$$

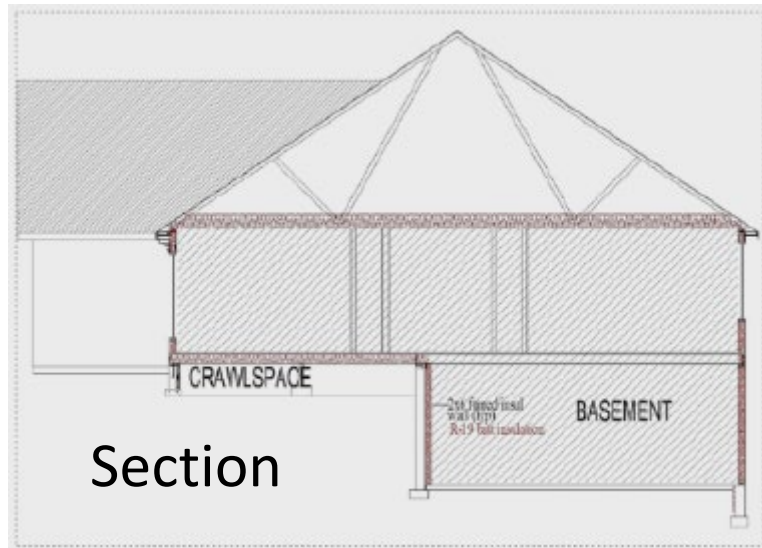
# Basement Clarification - 2

## Tip

- Depth of insulation
  - Requirements are for full depth of basement wall (10 feet). REScheck allows for trade offs
  - Measure from top of wall to where insulation stops (for a fully insulated wall, depth of insulation is equal to height of wall)
  - If enter insulation depth of 0, REScheck assumes no insulation, *regardless of the values in the insulation fields*
  - For a vertical/horizontal insulation, depth includes sum of both
- Continuous insulation
  - REScheck assumes rigid insulation on exterior
- Cavity insulation
  - REScheck assumes interior framing with insulation

# REScheck Illustrated Dimension Box

Tip



Code minimum starts at insulating full height of wall; “from the top of the basement wall down to 10 feet below grade or to the basement floor, whichever is less.” R402.2.9

## Conditioned basement walls

Basement Walls

Enter the specified dimensions in feet (not inches) in the boxes provided. A basement wall less than 50% below grade is considered an above-grade wall and must be entered using the Wall button.

Wall Height (ft)  
Measured from the top of the wall to the basement floor.

Depth Below Grade (ft)  
Measured from the finished outside grade to the basement floor.

Depth of Insulation (ft)  
Measured from the top of the wall to where the insulation stops.

0.0

0.0

0.0

OK Cancel

# Example House



# Example House

## ► Window/ Door Area

### Window Area - 533 sf

North – 369 sf  
South – 149 sf  
West – 15 sf

U-factor = 0.35

U-factor = 0.27

SHGC = .25

Glass Doors <50% glass - 40 sf; U-factor = 0.50

North – 40 sf

Opaque Doors - 40 sf; U-factor = 0.50

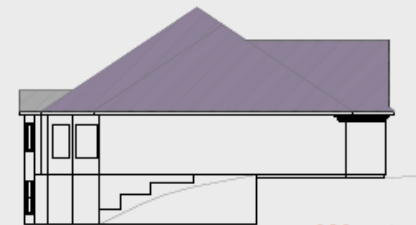
South – 40 sf



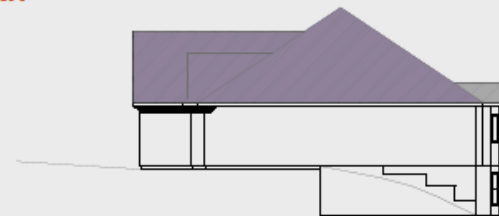
South



North

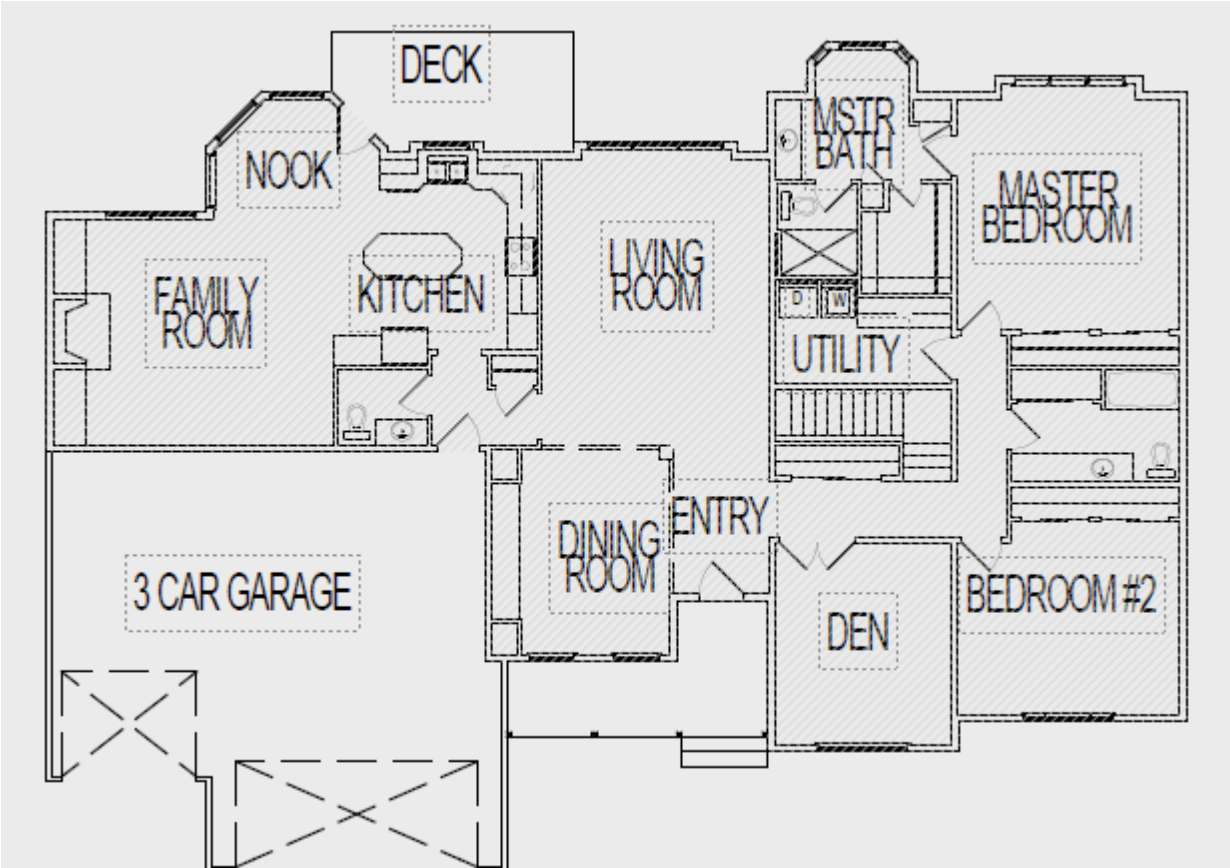


West

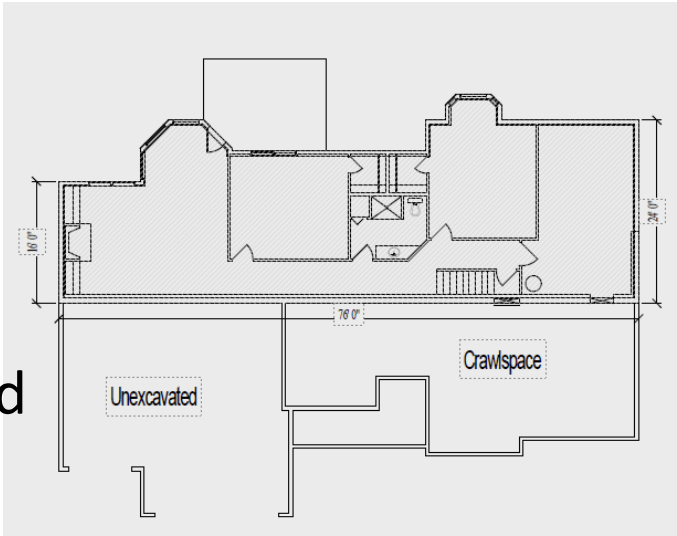


East

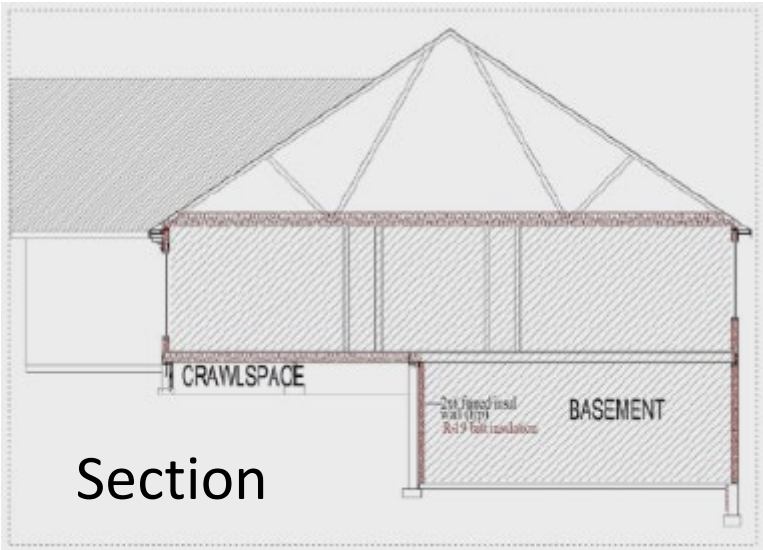
# Example House



Main Floor



Conditioned Basement



Section

# Example House



Sample for training.rck - REScheck 4.7.2 Code: 2015 IECC

File Edit View Options Code Tools Help

Front Faces: North

Project Envelope Mechanical Requirements

Ceiling Skylight Wall Window Door Basement Floor Crawl Wall

	Component	Assembly	Orientation	Gross Area or Slab Perimeter		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)	Comments/Description (Optional)
▼ Building													
1	Ceiling 1	Raised or Energy Truss		2415	ft2	30.0	22.0	0.019	46				
2	▼ Wall 1 - North	Wood Frame, 24" o.c.	Front	911	ft2	20.0	5.0	0.043	22				
3	Window 1	Vinyl/Fiberglass Fram...	Front	369	ft2			0.3	111				
4	Door 1	Solid	Front	21	ft2			0.5	11				
5	▼ Wall 2, South	Wood Frame, 24" o.c.	Back	834	ft2	20.0	5.0	0.043	29				
6	Window 2	Vinyl/Fiberglass Fram...	Back	149	ft2			0.3	45				
7	Door 2	Glass	Back	21	ft2			0.65	14				
8	Wall 3, West	Wood Frame, 24" o.c.	Left Side	492	ft2	20.0	5.0	0.043	21				
9	▼ Wall 4, East	Wood Frame, 24" o.c.	Right Side	632	ft2	20.0	5.0	0.043	27				
10	Window 3	Vinyl/Fiberglass Fram...	Right Side	15	ft2			0.3	5				
11	Knee Wall We	Wood Frame, 16" o.c.	Left Side	69	ft2	20.0	0.0	0.059	4				
12	Knee Wall Eas	Wood Frame, 16" o.c.	Right Side	84	ft2	20.0	0.0	0.059	5				
13	Basement Wa	Solid Concrete or Mas...	Right Side	216	ft2	0.0	15.0	0.054	12	9.0	4.5	9.0	
14	Basement Wa	Solid Concrete or Mas...	Left Side	144	ft2	0.0	15.0	0.054	8	9.0	4.5	9.0	
15	Basement Wa	Solid Concrete or Mas...	Front	684	ft2	0.0	15.0	0.048	33	9.0	7.0	9.0	
16	Floor 1	All-Wood Joist/Truss:O...		783	ft2	30.0	0.0	0.033	26				
17	Floor 2	Slab-On-Grade:Unhea...		93	ft		10.0	0.655	0			4.0	Perimeter entry

Passes

Compliance Method: UA Trade-Off Max. UA 436 Your UA 419

3.9 % Better Than Code

Enter the R-value of continuous insulation, or enter 0 if none will be installed.

Compliance bar

47

Status bar

# REScheck Color Codes

RED

Project		Envelope		Mechanical		Requirements										
Ceiling		Skylight		Wall		Window		Door		Basement		Floor		Crawl Wall		
	Component	Assembly				Orientation		Gross Area			Cavity Insulation R-Value	Continuous Insulation R-Value		U-Factor		UA
	Building															
1	Ceiling 1	Flat Ceiling or Scissor Truss						0	ft2		0.0	0.0		0.568		0

Green

✓	Passes	1.0	% Better Than Code
---	--------	-----	--------------------

Blue

⚠	No envelope assemblies specified	TBD	%
---	----------------------------------	-----	---



# REScheck Compliance Failings

Tip

- Check for missing entries in software (**red**)
- Review plans for entry errors or missing information
- Confirm all areas and perimeters are correct
- Check insulation values
- Ponder high “UA” values in REScheck
- If all OK, increase insulation values

# Example House



Sample for training.rck - REScheck 4.7.2 Code: 2015 IECC

File Edit View Options Code Tools Help

Front Faces: North

Project Envelope Mechanical Requirements

Ceiling Skylight Wall Window Door Basement Floor Crawl Wall

	Component	Assembly	Orientation	Gross Area or Slab Perimeter		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)	Comments/Description (Optional)
▼	Building												
1	Ceiling 1	Raised or Energy Truss ▼		2415	ft <sup>2</sup>	30.0	22.0	0.019	46				
2	▼ Wall 1 - North	Wood Frame, 24" o.c. ▼	Front ▼	911	ft <sup>2</sup>	20.0	5.0	0.043	22				
3	Window 1	Vinyl/Fiberglass Fram... ▼	Front	369	ft <sup>2</sup>			0.3	111				
4	Door 1	Solid ▼	Front	21	ft <sup>2</sup>			0.5	11				
5	▼ Wall 2, South	Wood Frame, 24" o.c. ▼	Back ▼	834	ft <sup>2</sup>	20.0	5.0	0.043	29				
6	Window 2	Vinyl/Fiberglass Fram... ▼	Back	149	ft <sup>2</sup>			0.3	45				
7	Door 2	Glass ▼	Back	21	ft <sup>2</sup>			0.65	14				
8	Wall 3, West	Wood Frame, 24" o.c. ▼	Left Side ▼	492	ft <sup>2</sup>	20.0	5.0	0.043	21				
9	▼ Wall 4, East	Wood Frame, 24" o.c. ▼	Right Side ▼	632	ft <sup>2</sup>	20.0	5.0	0.043	27				
10	Window 3	Vinyl/Fiberglass Fram... ▼	Right Side	15	ft <sup>2</sup>			0.3	5				
11	Knee Wall We	Wood Frame, 16" o.c. ▼	Left Side ▼	69	ft <sup>2</sup>	20.0	0.0	0.059	4				
12	Knee Wall Ea	Wood Frame, 16" o.c. ▼	Right Side ▼	84	ft <sup>2</sup>	20.0	0.0	0.059	5				
13	Basement Wa	Solid Concrete or Mas... ▼	Right Side ▼	216	ft <sup>2</sup>	0.0	15.0	0.054	12	9.0	4.5	9.0	
14	Basement Wa	Solid Concrete or Mas... ▼	Left Side ▼	144	ft <sup>2</sup>	0.0	15.0	0.054	8	9.0	4.5	9.0	
15	Basement Wa	Solid Concrete or Mas... ▼	Front ▼	684	ft <sup>2</sup>	0.0	15.0	0.048	33	9.0	7.0	9.0	
16	Floor 1	All-Wood Joist/Truss:O... ▼		783	ft <sup>2</sup>	30.0	0.0	0.033	26				
17	Floor 2	Slab-On-Grade:Unhea... ▼		93	ft		10.0	0.655	0			4.0	Perimeter entry

Passes

3.9 % Better Than Code

Compliance Method: UA Trade-Off Max. UA 436 Your UA 419

Enter the R-value of continuous insulation, or enter 0 if none will be installed.

# REScheck Steps

1) Select “Preferences” at  
“Edit” dropdown

2) Enter project information

3) Enter envelope  
components

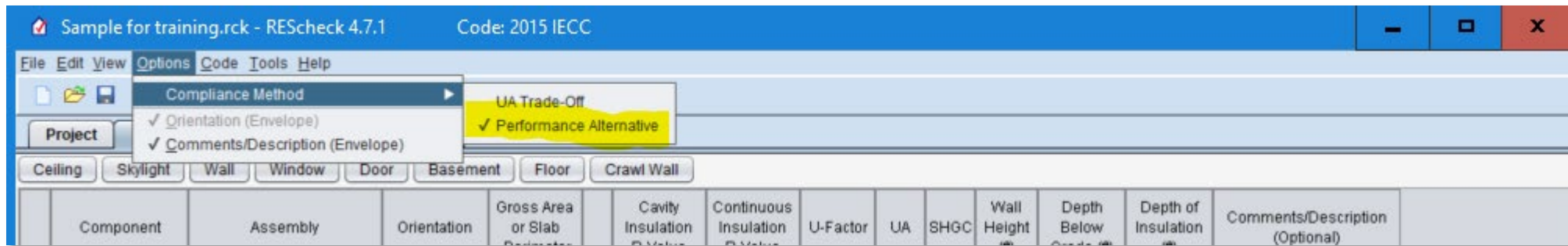
4) Enter mechanical  
equipment (optional)

5) Check  
“Requirements” tab

6) View/print report  
Save

# Mechanical Equipment

- This option is only available if you use the “Options” > “Compliance Method” > “Performance Alternative” found in the top menu of REScheck.



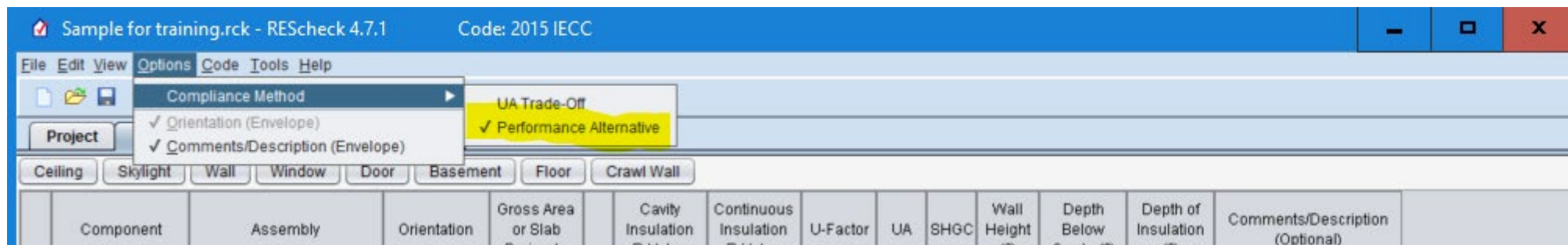
# Performance Alternative

- Performance Alternative



Don't choose Performance Alternative unless your dwelling fails. This is harder to use.

- Based on simulated performance of your building compared to an equivalent code-compliant building
- Requires additional inputs, including building orientation, a minimum of four walls with unique orientations, and a minimum of one roof and floor
- Considers the whole building energy performance, whereas the UA trade-off approach considers only the thermal performance of envelope components



# REScheck Steps

1) Select “Preferences” at  
“Edit” dropdown

2) Enter project information

3) Enter envelope  
components

4) Enter mechanical  
equipment (optional)

5) Check  
“Requirements” tab

6) View/print report  
Save

# Requirements Tab

- Mandatory requirements
  - Air leakage: 3 ACH<sub>50</sub> or less
  - Building mechanical systems and equipment
  - Service water heating
  - Duct construction, insulation, and testing
- For each “requirement”, the user:
  - Confirms that a code requirement is:
    - Met,
    - Exempt, or
    - Does not apply
  - Notes how compliance for applicable requirements are documented
- This information is shown on the report in the “Comments/Assumptions” column of the Inspection Checklist

Sample for training.rnk - REScheck 4.7.2 Code: 2015 IECC

File Edit View Options Code Tools Help

Front Faces: North

Project Envelope Mechanical Requirements

Select the category of interest then select a requirement from the list to view and modify in the details section below.

Envelope Systems

Requirements

Air Leakage:

- 1 [402.4.1.1] Air barrier and thermal barrier installed per manufacturer's instructions.
- 2 [402.4.3] Fenestration that is not site built is listed and labeled as meeting AAMA/WDMA/CSA
- 3 [402.4.5] IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to
- 4 [403.6] Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.
- 5 [402.4.1.2] Blower door test @ 50 Pa. <=5 ach in Climate Zones 1-2, and <=3 ach in Climate

Fenestration:

- 1 [303.1.3] U-factors of fenestration products are determined in accordance with the NFRC test

Insulation:

- 1 [303.2] Conditioned basement wall insulation installed per manufacturer's instructions.
- 2 [303.2.1] A protective covering is installed to protect exposed exterior insulation and extends a
- 3 [303.1] All installed insulation is labeled or the installed R-values provided.
- 4 [303.2, 402.2.7] Floor insulation installed per manufacturer's instructions, and in substantial

Details

Envelope

About this requirement.

[402.4.1.1] Air barrier and thermal barrier installed per manufacturer's instructions.

Compliance Choices:

[X] Requirement will be met.

Location on plans/specs:

Passes

3.9 % Better Than Code Requirements

Compliance Method: UA Trade-Off Max. UA 436 Your UA 419

# REScheck Steps

1) Select “Preferences” at  
“Edit” dropdown

3) Enter envelope  
components

5) Check  
“Requirements” tab

2) Enter project information

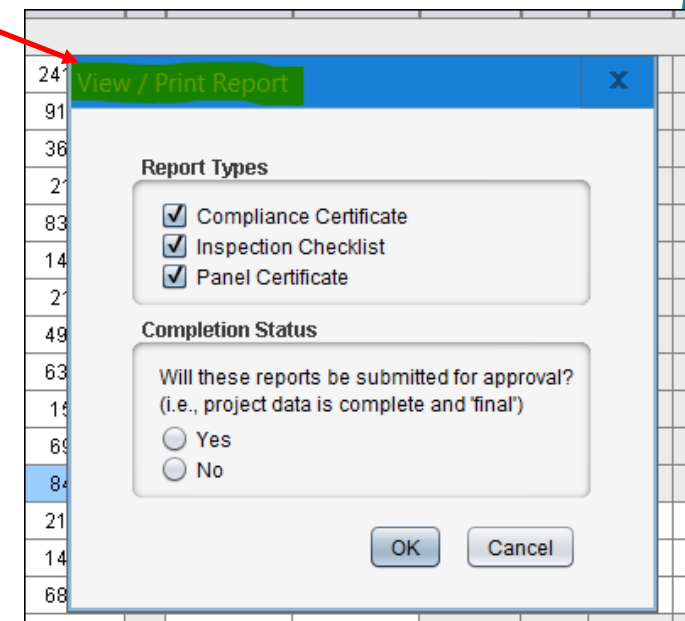
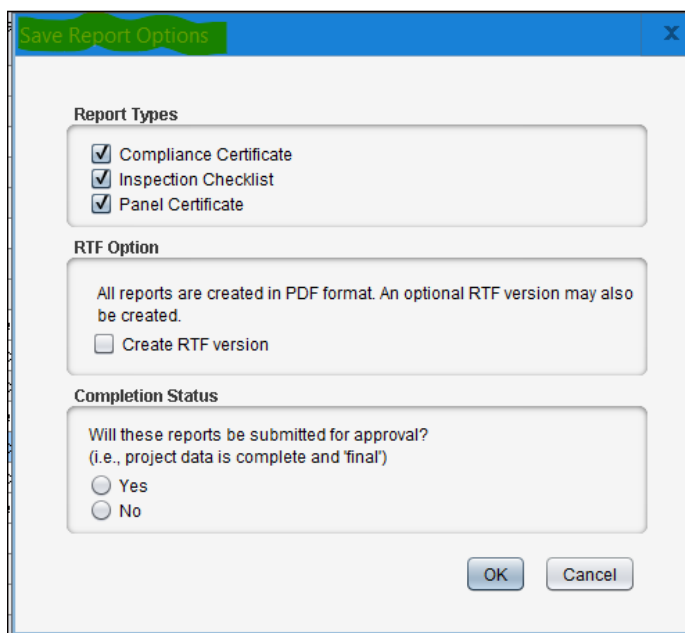
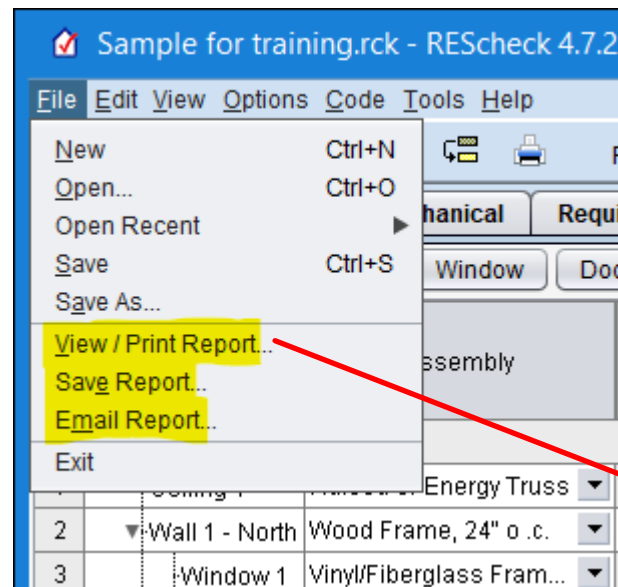
4) Enter mechanical  
equipment (optional)

6) View/print report  
Save



# Reports - 1

- No tab, but File > View
- Choices (check one or more)
  - Compliance Certificate
  - Inspection Checklist
  - Panel Certificate
- “Will these reports be submitted for approval?  
(i.e., project data is complete and ‘final’)”
  - Yes
  - No



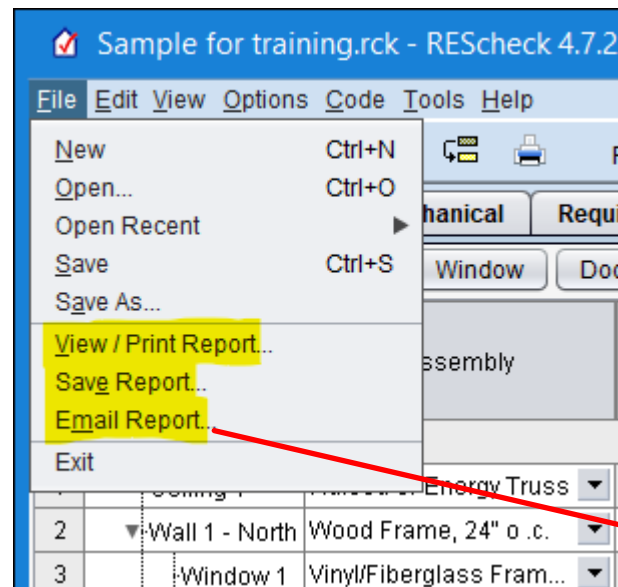
## Reports - 2

- Implement and complete Requirements tab
- Inspection checklists are listed by the phase of construction
  - “Pre-Inspection/Plan Review”
  - “Foundation Inspection”
  - “Framing/Rough-In Inspection”
  - “Insulation Inspection”
  - “Final Inspection Provisions”

Is this the order in which the CEO will inspect the project?

## Reports - 3

- Email Report to inspector, etc.
- Three report types are checked by default
- Check RTF version if needed, otherwise PDF
- Must select “Yes” or “No” for Completion Status
- Click “OK” for info box for email (confirm electronic submittal is allowed)



Email Compliance Report

Fields marked with an asterisk (\*) are required.

Send Report To:

\* Recipient Name(s):  
\* Recipient Email Address(es):  
Email Address(es) for CC:

From:

\* Your Name:  
Your Company:  
\* Your Email Address:

(use a semicolon to separate multiple names/addresses)

Notes:

Send Cancel

Save Report Options

Report Types

☒ Compliance Certificate  
☒ Inspection Checklist  
☒ Panel Certificate

RTF Option

All reports are created in PDF format. An optional RTF version may also be created.

☐ Create RTF version

Completion Status

Will these reports be submitted for approval?  
(i.e., project data is complete and final)

☒ Yes  
☐ No

OK Cancel



REScheck Software Version 4.7.1

# Compliance Certificate

Project Augusta House

Energy Code: 2015 IECC  
Location: Augusta, Maine  
Construction Type: Single-family  
Project Type: New Construction  
Orientation: Bldg. faces 0 deg. from North  
Conditioned Floor Area: 2,415 ft<sup>2</sup>  
Glazing Area: 18%  
Climate Zone: 6 (7550 HDD)  
Permit Date:  
Permit Number:

Verify code year,  
location, construction  
type, and conditioned  
floor area

Construction Site:

Owner/Agent:  
Abby and Bill Carter

Designer/Contractor:  
ABC Construction

## Compliance: Passes using UA trade-off

Compliance: **2.8% Better Than Code** Maximum UA: **497** Your UA: **483**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.  
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

## Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Ceiling 1: Raised or Energy Truss	2,415	30.0	22.0	0.019	46
Wall 1 - North: Wood Frame, 24" o .c. Orientation: Front	911	20.0	5.0	0.043	22
Window 1: Vinyl/Fiberglass Frame:Double Pane with Low-E Orientation: Front	369			0.300	111
Door 1: Solid Orientation: Front	21			0.500	11
Wall 2, South: Wood Frame, 24" o .c.	834	20.0	5.0	0.043	29

Confirm that these  
values match plans

Verify compliance  
statement is signed






## REScheck Software Version 4.7.1

# Inspection Checklist

Energy Code: 2015 IECC

Requirements: 5.0% were addressed directly in the REScheck software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.1, 103.2 [PR1] <sup>1</sup> 	Construction drawings and documentation demonstrate energy code compliance for the building envelope. Thermal envelope represented on construction documents.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
103.1, 103.2, 403.7 [PR3] <sup>1</sup> 	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the IECC Commercial Provisions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
302.1, 403.7 [PR2] <sup>2</sup> 	Heating and cooling equipment is sized per ACCA Manual S based on loads calculated per ACCA Manual J or other methods approved by the code official.	Heating: Btu/hr _____ Cooling: Btu/hr _____	Heating: Btu/hr _____ Cooling: Btu/hr _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Checked in  
"Requirements"  
tab section

Additional info  
entered shows  
here, too

**Additional Comments/Assumptions:**

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.2.1, 402.2.2, 402.2.6 [FI1] <sup>1</sup>	Ceiling insulation R-value.	R-____ <input type="checkbox"/> Wood <input type="checkbox"/> Steel	R-____ <input type="checkbox"/> Wood <input type="checkbox"/> Steel	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.1.1.1, 303.2 [FI2] <sup>1</sup>	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft <sup>2</sup> .			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.2.3 [FI22] <sup>2</sup>	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.2.4 [FI3] <sup>1</sup>	Attic access hatch and door insulation ≥ R-value of the adjacent assembly.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.4.1.2 [FI17] <sup>1</sup>	Blower door test @ 50 Pa. ≤ 5 ach in Climate Zones 1-2, and ≤ 3 ach in Climate Zones 3-8.	ACH 50 = ____	ACH 50 = ____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.3.4 [FI4] <sup>1</sup>	Duct tightness test result of ≤ 4 cfm/100 ft <sup>2</sup> across the system or ≤ 3 cfm/100 ft <sup>2</sup> without air handler @ 25 Pa. For rough-in tests, verification may need to occur during Framing Inspection.	____ cfm/100 ft <sup>2</sup>	____ cfm/100 ft <sup>2</sup>	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.3.3 [FI27] <sup>1</sup>	Ducts are pressure tested to determine air leakage with either: Rough-in test: Total leakage measured with a	____ cfm/100 ft <sup>2</sup>	____ cfm/100 ft <sup>2</sup>	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable	



## 2015 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	25.00
Below-Grade Wall	15.00
Floor	30.00
Ceiling / Roof	52.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
Window	0.30	0.32
Door	0.50	0.03

Heating & Cooling Equipment	Efficiency
Heating System: _____	_____
Cooling System: _____	_____
Water Heater: _____	_____

Name: _____	Date: _____
Comments	

## Panel Certificate

Average values calculated and shown here

Equipment entered manually

# AreaCalc

- On desktop version of REScheck only, not a part of web version
- Calculates building areas
- Allows creation of building components library
- Saves calculations
- Includes “shape” calculator
- Items can be transferred to REScheck



# AreaCalc

Untitled - AreaCalc 2.3.2

File Edit Tools Help

Windows Skylights Doors Ceilings Walls Basements Floors Crawl Walls

Click a window name to add it to the window list on the right.






Window Library  
Add New...

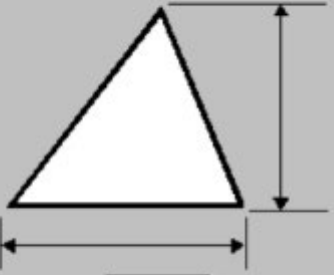
	Add to Library	Window Name	Assembly Type	Quantity	Width	x	Height	=	Unit Area	Total Area	U-Factor	SHGC	Comments/Description
1		Double glazed	Vinyl/Fiberglass	1	0'-0"		0'-0"		0.0	0.00 ft2			
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													

Gross Roof/Ceiling Area total  ft2 Window Area Total 0.00 ft2

Enter a Window directly into the grid or click in the Library Name column to select a Window.

Shape Calculator: Triangle



Height:  ft-in

Width Base:  ft-in

Area:  0 ft2

OK Cancel

Shape Calculator

# Learning More About REScheck

- Experiment with REScheck
- Use your dwelling as a learning example
- Have a thorough set of plans
- Watch REScheck Basics video by Pam Cole, DOE Building Energy Codes Program, PNNL, April 2016:  
<https://www.youtube.com/watch?v=c-CtTjP4Y1Q>
- Use it or lose it

# REScheck Examples

# Example House



Sample for training.rck - REScheck 4.7.2 Code: 2015 IECC

File Edit View Options Code Tools Help

Front Faces: North

Project Envelope Mechanical Requirements

Ceiling Skylight Wall Window Door Basement Floor Crawl Wall

	Component	Assembly	Orientation	Gross Area or Slab Perimeter		Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	Wall Height (ft)	Depth Below Grade (ft)	Depth of Insulation (ft)	Comments/Description (Optional)
▼ Building													
1	Ceiling 1	Raised or Energy Truss		2415	ft2	30.0	22.0	0.019	46				
2	▼ Wall 1 - North	Wood Frame, 24" o.c.	Front	911	ft2	20.0	5.0	0.043	22				
3	Window 1	Vinyl/Fiberglass Fram...	Front	369	ft2			0.3	111				
4	Door 1	Solid	Front	21	ft2			0.5	11				
5	▼ Wall 2, South	Wood Frame, 24" o.c.	Back	834	ft2	20.0	5.0	0.043	29				
6	Window 2	Vinyl/Fiberglass Fram...	Back	149	ft2			0.3	45				
7	Door 2	Glass	Back	21	ft2			0.65	14				
8	Wall 3, West	Wood Frame, 24" o.c.	Left Side	492	ft2	20.0	5.0	0.043	21				
9	▼ Wall 4, East	Wood Frame, 24" o.c.	Right Side	632	ft2	20.0	5.0	0.043	27				
10	Window 3	Vinyl/Fiberglass Fram...	Right Side	15	ft2			0.3	5				
11	Knee Wall We	Wood Frame, 16" o.c.	Left Side	69	ft2	20.0	0.0	0.059	4				
12	Knee Wall Eas	Wood Frame, 16" o.c.	Right Side	84	ft2	20.0	0.0	0.059	5				
13	Basement Wa	Solid Concrete or Mas...	Right Side	216	ft2	0.0	15.0	0.054	12	9.0	4.5	9.0	
14	Basement Wa	Solid Concrete or Mas...	Left Side	144	ft2	0.0	15.0	0.054	8	9.0	4.5	9.0	
15	Basement Wa	Solid Concrete or Mas...	Front	684	ft2	0.0	15.0	0.048	33	9.0	7.0	9.0	
16	Floor 1	All-Wood Joist/Truss:O...		783	ft2	30.0	0.0	0.033	26				
17	Floor 2	Slab-On-Grade:Unhea...		93	ft		10.0	0.655	0			4.0	Perimeter entry

Passes

Compliance Method: UA Trade-Off Max. UA 436 Your UA 419

3.9 % Better Than Code

Enter the R-value of continuous insulation, or enter 0 if none will be installed.

Compliance bar

68

Status bar