



U.S. Department of Energy
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REScheck™ Basics

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Pam Cole



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www.energycodes.gov



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EER

Building Energy Codes Program

U.S. Department of Energy - Energy Efficiency and Renewable Energy



About the Program ↓

Compliance Tools ↓

Training/Education ↓

Code Analysis and Development

Implementation Tools ↓

Technical Support ↓

Related Links



The U.S. Department of Energy's Building Energy Codes Program is an information resource on national model energy codes. We work with other government agencies, state and local jurisdictions, national code organizations, and industry to promote stronger building energy codes and help states adopt, implement, and enforce those codes.

The Program recognizes that energy codes maximize energy efficiency only when they are fully embraced by users and supported through education, implementation, and enforcement.

Free Software and Technical Support



REScheck

The [REScheck](#) materials have been developed to simplify and clarify residential code compliance with the Model Energy Code (MEC), the International Energy Conservation Code (IECC), and state-specific codes.

FREE Downloads: [REScheck](#), [REScheck-Web](#), [REScheck Package Generator](#)



COMcheck

The [COMcheck](#) materials have been developed to simplify and clarify commercial code compliance with the International Energy Conservation Code (IECC), ANSI/ASHRAE/IESNA Standard 90.1, and state-specific codes.

FREE Downloads: [COMcheck](#), [COMcheck-Web](#), [COMcheck Package Generator](#)



Ask an Energy Codes Expert

Need help with the software? Need energy codes assistance? Through the [Ask an Expert](#) program, energy codes experts are available to answer your specific questions.



Resource Center

The [Resource Center](#) is a web-based system designed to provide users with information about energy codes and beyond code technologies. Resources are available in a variety of different media types, including articles, graphics,

Search [energycodes.gov](#)

EERE Information Center

EVENTS

Hold These Dates!
Energy Codes 2009
July 27-30, 2009
Portland, OR

FEATURE

Determination Issu
ANSI/ASHRAE/IESNA
Standard 90.1-2004

NEWS

**Buildings Energy Codes
News Headlines**

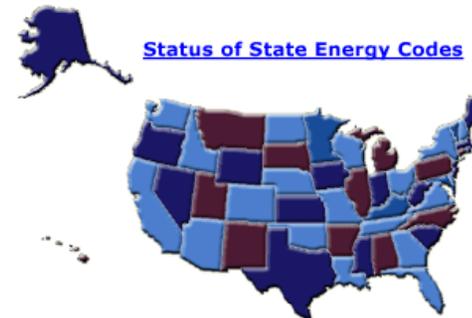
PUBLICATIONS

**January 2009 Setting The
Standard Newsletter**
posted 01.09.2009

[XML](#) [RSS](#)

Receive news via our RSS feed

[Status of State Energy Codes](#)





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REScheck™

Desktop Software Tools



Windows version or
Mac version

Web-Based Tools



Free



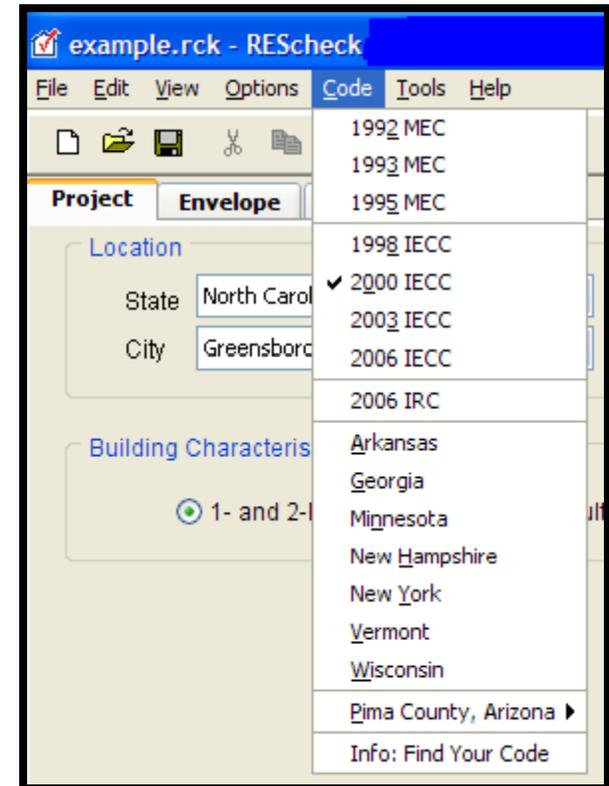
Main Steps

- Select the Appropriate Code
- Enter Project Information
- Enter Building Components
- Enter Mechanical Equipment (optional)
- View/Print the Compliance Report
- Save the Data File and the Report



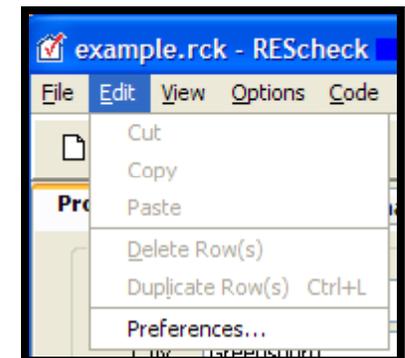
Appropriate Code

- Energy code applicable to your state/ jurisdiction (Code Menu)
 - Status of State Codes
- Default
- Preferences



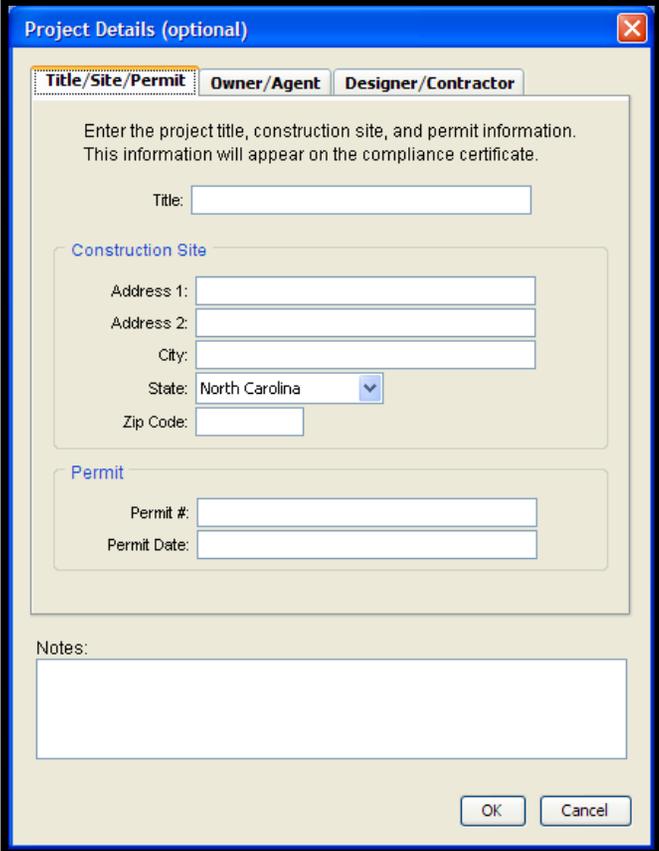
Preferences

- Edit Menu
- General
 - File Options
 - Beyond Code Advisor
 - Version Update Check
- Applicant
 - Project Details
- Reports
 - Signatures
 - Email Reports
- Project
 - Code/location
 - Envelope



Project Information

- Project location
- Project type
- Project details for report (optional)
 - Title/Site/Permit
 - Owner/Agent
 - Designer/Contractor
 - Notes



Project Details (optional)

Title/Site/Permit | Owner/Agent | Designer/Contractor

Enter the project title, construction site, and permit information. This information will appear on the compliance certificate.

Title:

Construction Site

Address 1:

Address 2:

City:

State: North Carolina

Zip Code:

Permit

Permit #:

Permit Date:

Notes:

OK Cancel



Building Components

- Only components that separate conditioned space from unconditioned space
- Only use applicable buttons
- Can group “like” components
- Use of “other” assembly type
- Gross area



Building Envelope

Consists of:

- Ceiling
- Walls
 - Above grade
 - Below grade
- Fenestration
- Foundation

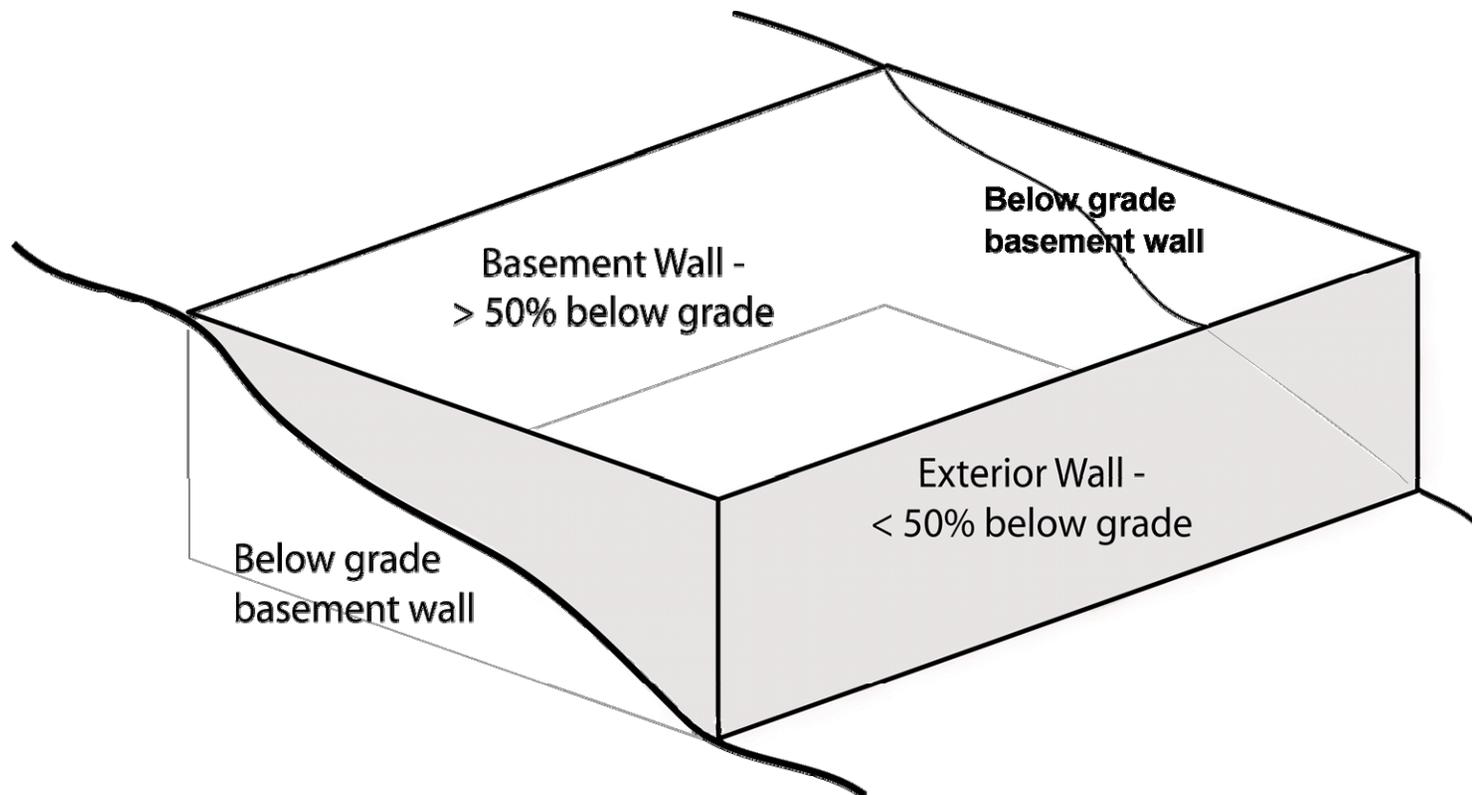


Foundations

- Basement button – use if
 - basement is conditioned and
 - basement walls are insulated
- Floor button use if
 - separates conditioned from unconditioned space
- Crawl Wall button – use if
 - crawl space is unventilated and
 - floor above is NOT insulated

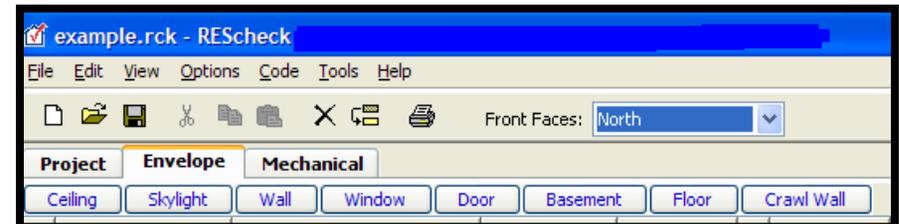


Basement vs. Above-Grade Wall



Envelope Screen

- Changes based on code and/or location selected
 - SHGC column
 - Orientation
 - Front Faces
 - Overhang Projection Factor column



Mechanical Equipment

- Section is entirely optional
- High-efficiency equipment

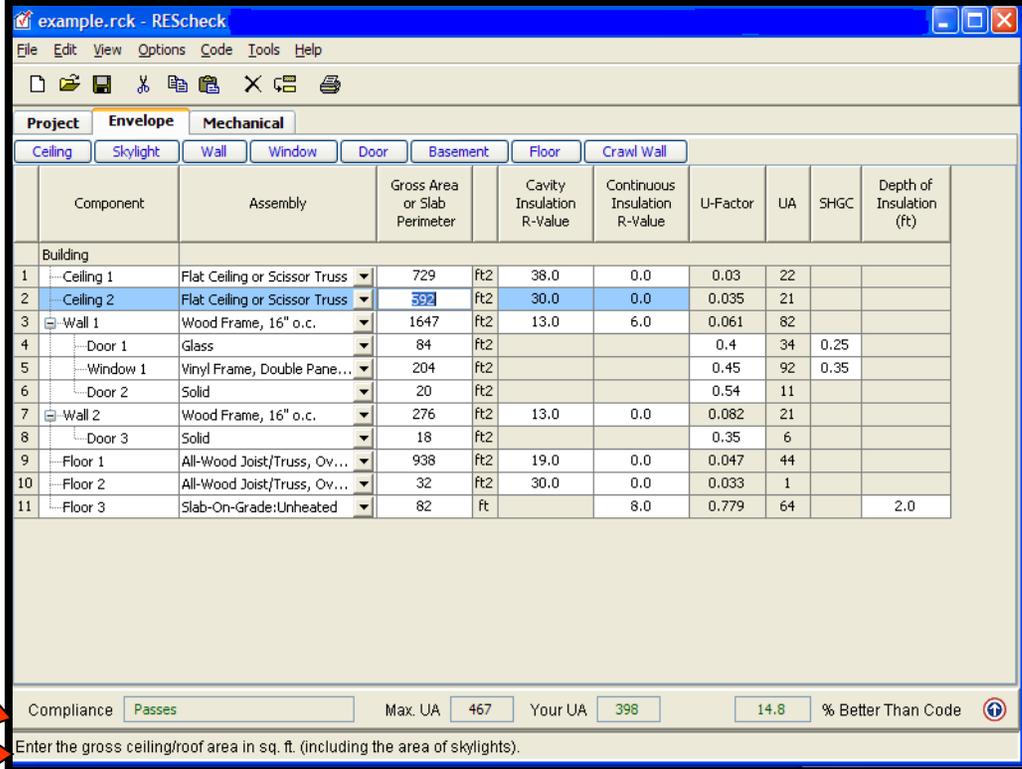


Compliance

- UA
 - “Max UA”
 - “Your UA”
- 2006 IECC based projects
 - New Construction
 - Must enter a roof, walls, and floor assembly
 - Check Compliance button
 - High-efficiency mechanical equipment
 - Performance calculation if UA calculation fails



Screen Operations



The screenshot shows the REScheck software interface with the following table of components:

Component	Assembly	Gross Area or Slab Perimeter	Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC	Depth of Insulation (ft)
Building								
1	Ceiling 1	Flat Ceiling or Scissor Truss	729	ft2	38.0	0.0	0.03	22
2	Ceiling 2	Flat Ceiling or Scissor Truss	592	ft2	30.0	0.0	0.035	21
3	Wall 1	Wood Frame, 16" o.c.	1647	ft2	13.0	6.0	0.061	82
4	Door 1	Glass	84	ft2			0.4	34
5	Window 1	Vinyl Frame, Double Pane...	204	ft2			0.45	92
6	Door 2	Solid	20	ft2			0.54	11
7	Wall 2	Wood Frame, 16" o.c.	276	ft2	13.0	0.0	0.082	21
8	Door 3	Solid	18	ft2			0.35	6
9	Floor 1	All-Wood Joist/Truss, Ov...	938	ft2	19.0	0.0	0.047	44
10	Floor 2	All-Wood Joist/Truss, Ov...	32	ft2	30.0	0.0	0.033	1
11	Floor 3	Slab-On-Grade:Unheated	82	ft		8.0	0.779	64
								2.0

At the bottom of the window, the Compliance Bar Status Bar shows:

Compliance **Passes** Max. UA **467** Your UA **398** **14.8** % Better Than Code

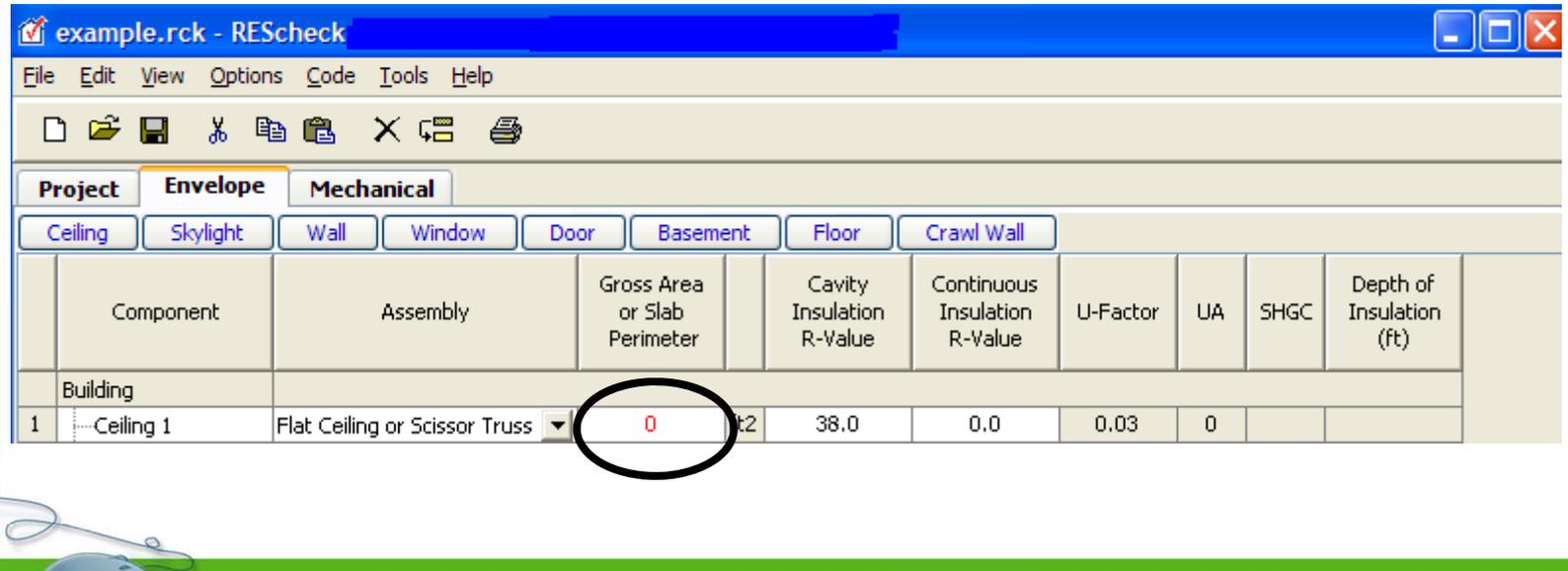
Enter the gross ceiling/roof area in sq. ft. (including the area of skylights).

Compliance Bar
 Status Bar

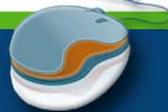


Screen Operations

- Compliance Bar
- Status Bar
- Colors - **Red**



	Component	Assembly	Gross Area or Slab Perimeter	Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	SHGC	Depth of Insulation (ft)
1	Ceiling 1	Flat Ceiling or Scissor Truss	0	38.0	0.0	0.03	0		



Screen Operations

- Compliance Bar
- Status Bar
- Colors - **Green**



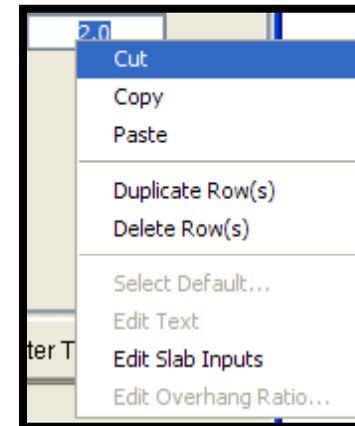
Screen Operations

- Compliance Bar
- Status Bar
- Colors - **Blue**



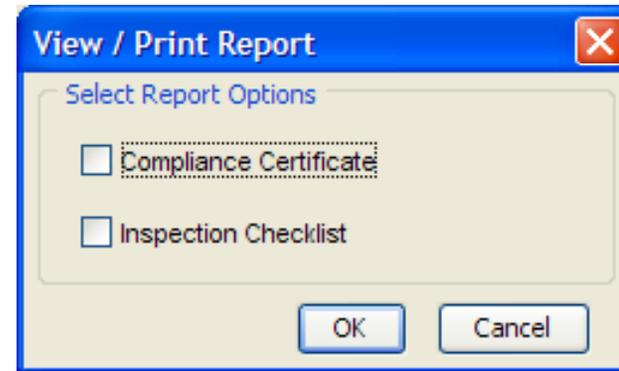
Screen Operations

- Compliance Bar
- Status Bar
- Colors
- Right Mouse Button
 - “Context” Menu



Compliance Report

- Project complies
- View/Print Report



Inspection Checklist

- Mandatory requirements
 - Code presumes these requirements are met



RECheck Software Version 4.2.0
Inspection Checklist

Ceilings:

Ceiling 1: Flat Ceiling or Scissor Truss, R-38.0 cavity insulation
Comments: _____

Ceiling 2: Flat Ceiling or Scissor Truss, R-30.0 cavity insulation
Comments: _____

Above-Grade Walls:

Wall 1: Wood Frame, 16" o.c., R-13.0 cavity + R-6.0 continuous insulation
Comments: _____

Wall 2: Wood Frame, 16" o.c., R-13.0 cavity insulation
Comments: _____

Windows:

Window 1: Vinyl Frame, Double Pane with Low-E, U-factor: 0.450
For windows without labeled U-factors, describe features:
#Panels _____ Frame Type _____ Thermal Break? _____ Yes _____ No
Comments: _____

Doors:

Door 1: Glass, U-factor: 0.400
Comments: _____

Door 2: Solid, U-factor: 0.540
Comments: _____

Door 3: Solid, U-factor: 0.350
Comments: _____

Floors:

Floor 1: All-Wood Joist/Truss, Over Unconditioned Space, R-19.0 cavity insulation
Comments: _____

Floor 2: All-Wood Joist/Truss, Over Outside Air, R-30.0 cavity insulation
Comments: _____

Floor 3: Slab-On-Grade/Unheated, 2.0' Insulation depth, R-9.0 continuous insulation
Comments: _____

Slab insulation extends down from the top of the slab to at least 2.0 ft. OR down to at least the bottom of the slab then horizontally for a total distance of 2.0 ft.
Exterior insulation has a rigid, opaque, weather-resistant protective covering that covers the exposed (above-grade) insulation and extends at least 6 in. below grade.

Air Leakage:

Joints, penetrations, and all other such openings in the building envelope that are sources of air leakage are sealed.

Recessed lights are 1) Type IC rated, or 2) installed inside an appropriate air-tight assembly with a 0.5" clearance from combustible materials. If non-IC rated, fixtures are installed with a 3" clearance from insulation.

Vapor Retarder:

Installed on the warm-in-winter side of all non-vented framed ceilings, walls, and floors.

Materials Identification:

Materials and equipment are installed in accordance with the manufacturer's installation instructions.

Project Title: North Meadows Development
Data filename: C:\Program Files\Check\RECheck\420\example.rok

Report date: 02/10/09
Page 2 of 4

Mandatory Requirements

- Moisture control
- Air leakage
- Building mechanical systems and equipment
- Service water heating
- Duct construction and insulation



Panel Certificate

- Under 2006 IECC-based codes, panel certificate option




2006 IECC Energy Efficiency Certificate

Insulation Rating		R-Value	
Ceiling / Roof		38.00	
Wall		19.00	
Floor / Foundation		19.00	
Roofwork (unconditioned spaces):			
Glass & Door Rating		U-Factor	SHGC
Window		0.45	0.35
Door		0.40	0.25
Heating & Cooling Equipment		Efficiency	
Water Heater:		_____	
Name: _____		Date: _____	
Comments: _____			

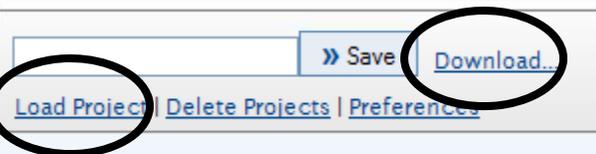


Files

- Data (*File* ⇒ *Save*)
- Report (*File* ⇒ *Save Report*)
- Exchange

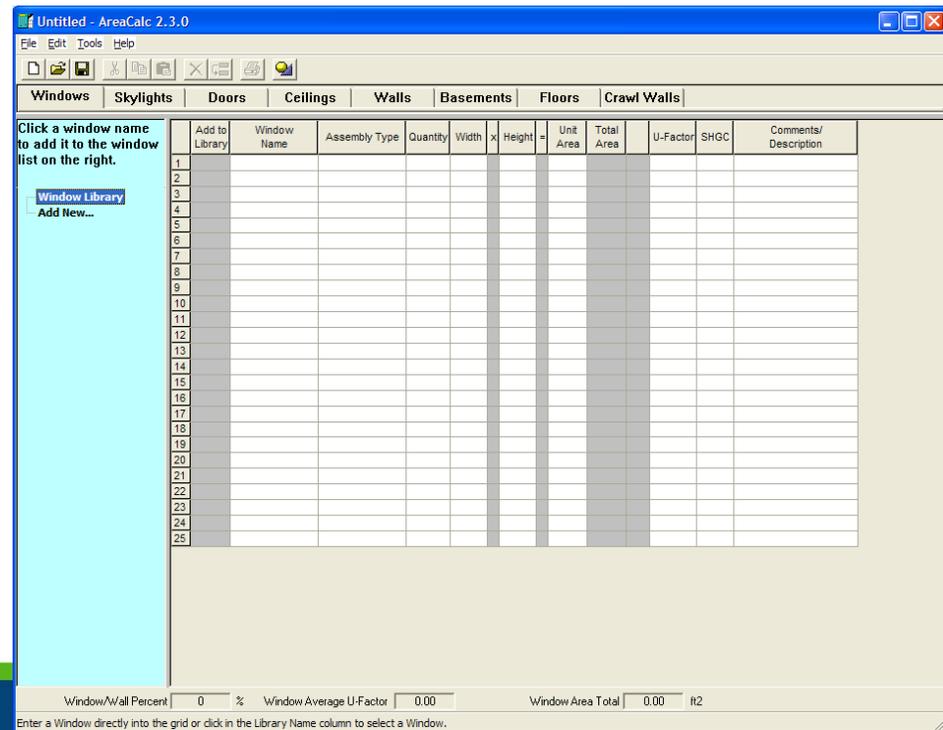
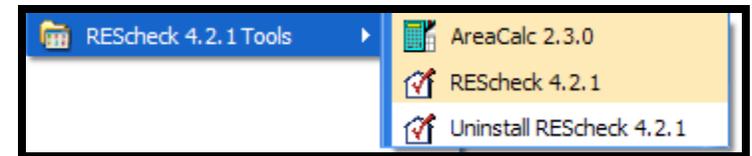


 **REScheck-Web has been updated!**
[Learn what's new.](#) (September 2008)



AreaCalc

- REScheck desktop
- Calculates building areas
- Areas can be transferred into REScheck



Common Questions

- Additions
- Cavity vs. continuous insulation
- SHGC and U-factor values



Additions

- Check with local jurisdiction
 - Addition only
 - Addition plus existing home
- Under 2006 IECC, select *Addition/Alteration* as the project type





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Cavity vs. Continuous



SHGC and U-Factors

 National Fenestration Rating Council® CERTIFIED	World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider	
ENERGY PERFORMANCE RATINGS		
U-Factor (U.S./I-P) 0.35	Solar Heat Gain Coefficient 0.32	
ADDITIONAL PERFORMANCE RATINGS		
Visible Transmittance 0.51	Air Leakage (U.S./I-P) 0.2	
Condensation Resistance 51	—	
<p> <small> 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. www.nfrc.org </small> </p>		



Other Common Questions

- City list
- “xxxx version”
- Why is some mechanical equipment not listed?





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REScheck Demo



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DOE's Building Energy Codes Program
Internet Address: www.energycodes.gov
Technical Support: techsupport@becp.pnl.gov



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