


Total UA Compliance and Reading REScheck 2018 Energy Code Support Program

This option of the prescriptive path allows for certain components of the thermal envelope to be traded. A report is required to demonstrate compliance for this option. One option to obtain the report is to use REScheck—a free web based program that is provided by the Department of Energy that can be used by anyone.

<https://www.energycode.gov/rescheck>

Knowing how REScheck works can help you when reviewing the reports. We have created a sample for an example.



Generated by REScheck-Web Software
Compliance Certificate

Project **Amarillo**

Energy Code: **2018 IECC**
 Location: **Amarillo, Texas**
 Construction Type: **Single-family**
 Project Type: **New Construction**
 Conditioned Floor Area: **3,600 ft2**
 Glazing Area: **21%**
 Climate Zone: **4 (4258 HDD)**
 Permit Date:
 Permit Number:

Construction Site: _____ Owner/Agent: _____ Designer/Contractor: _____

Compliance: Passes using UA trade-off

Compliance: **0.6% Better Than Code** Maximum UA: **332** Your UA: **330** Maximum SHGC: **0.40** Your SHGC: **0.40**
 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.
 Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Ceiling: Flat Ceiling or Scissor Truss	1,200	49.0	0.0	0.026	0.026	31	31
Wall: Wood Frame, 16" o.c.	2,640	20.0	0.0	0.059	0.060	124	126
Door 2: Glass Door (over 50% glazing) SHGC: 0.40	84			0.320	0.320	27	27
Window 2: Vinyl Frame SHGC: 0.40	462			0.320	0.320	148	148
Floor 1: Slab-On-Grade (Unheated) Insulation depth: 2.0" Insulation position: Vertical Insulation	120		10.0	0.540	0.540	0	0

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2018 IECC requirements in REScheck Version : REScheck-Web and to comply with the mandatory requirements listed in the REScheck Inspection Checklist.

Name - Title _____ Signature _____ Date _____

Project Title: Amarillo Report date: 02/21/24
 Data filename: _____ Page 1 of 9

Total UA Compliance and Reading REScheck 2018 Energy Code Support Program

Project title is helpful

Generated by REScheck-Web Software

Compliance Certificate

Verify Correct Location– if not listed in REScheck use a nearby location

Verify Code Year

Project: Amarillo

Energy Code: **2018 IECC**

Location: **Amarillo, Texas**

Construction Type: **Single-family** (Choices are Single family or Multi-Family)

Project Type: **New Construction** (Choices are New Construction, Addition, or Alternative)

Conditioned Floor Area: **3,600 ft²** (Include all conditioned floor area)

Glazing Area: **21%** (Glazing area is not limited)

Climate Zone: **4 (4258 HDD)** (Verify Climate Zone)

Permit Date:

Permit Number:

Compliance: Passes using UA trade-off (Shows UA-trade off this is correct)

Compliance: **0.6% Better Than Code** Maximum UA: **332** Your UA: **330** Maximum SHGC: **0.40** Your SHGC: **0.40**

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Shows passing by 0.6%

All thermal envelope assemblies can be used in REScheck **except** slab on grade insulation. Look at Table R402.1.4. Notice that there is no U-factor for slab on grade. As section R402.1.5 requires the U-factors in Table R402.1.4 be used in the calculation for total UA. The calculation cannot be done without a U-factor and therefore cannot be done.

Total UA Compliance and Reading REScheck 2018

All entries are gross areas in square feet. REScheck knows to subtract the doors and windows from the gross wall area.

Except slab on grade which is the perimeter in linear feet.

Designer would enter the proposed assembly values. Cavity, Continuous and U-factors for doors and windows.

Proposed U-factor can be from the designer in this case the window and doors. The assemblies with insulation is calculated by the software.

The required U-factor is from table R402.1.4

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The designer has the option to group all like assemblies together, as shown, or they could also choose to show by the direction. North, South, East and West.

The slab on grade has insulation as a tradeoff is not allowed.

Note that the walls have only cavity insulation. When you look at table R402.1.2 climate zone 6 would require the above grade walls to have some type of continuous insulation.

In the total UA calculation the **assembly U-factor** is used.

The example used a raised heel or energy heel truss. Why does this make any difference?? (Answer on next page)

Raised heel or Energy Truss

Look at the proposed U-factor at 0.026

The required U-factor is from Table R402.1.4 at 0.026.

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What is the code that requires truss or rafter heel height? None that we know of.

The Code U-factor accounts for the reduced thickness of the insulation at the eaves. Typically about 4" in height at the exterior wall.

If the Raised heel or Energy Truss option is used it is critical that the truss/roof details show that the full height of R-38 is provided at the exterior wall.

For either batt or blown cellulose this required space to clear the top plate should be about 12".

Nice feature of REScheck is the inspection/review sheets. The designer has the opportunity to add notes and location of item in the plans.



REScheck Software Version : REScheck-Web

Inspection Checklist

Energy Code: 2021 IECC

Indicates the designer made no comments

Requirements: 0.0% 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] ¹	Construction drawings and documentation demonstrate energy code compliance for the building envelope. Thermal			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
302.1, 403.7 [PR2] ²	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	

The list can be used for plan reviews and inspections. These are generic and not all items may apply to a project.

Section # & Req.ID	Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.2 [FO1] ¹	Slab edge insulation R-value.	R-_____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	R-_____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	<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.
303.2, 402.2.10 [FO2] ¹	Slab edge insulation manufacturer's ins			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
402.1.2 [FO3] ¹	Slab edge insulation depth/length.			<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.
303.2.1 [FO11] ²	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
403.9 [FO12] ²	Snow and ice-melting system controls installed to shut off system when pavement temperature > 50F and no precipitation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Designer can fill out to provide further information.

Additional Comments/Assumptions:

Each item on the checklist has an order of importance. This is represented in the table by color, and the color represents the number in the tier of importance. **BLUE= HIGH**, **PURPLE=MEDIUM** and **GOLD=LOW**

#1 Highest priority and has a large impact on energy efficiency. This is represented by the white box in the first column, and contains a superscript #1.

403.5.1.1.1 [F132] ²	Demand recirculation water systems have automatic controls to start pump when hot water is requested.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
404.1 [F16] ¹	100% of permanent fixtures have high efficacy lamps.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
404.1.2 [F123] ³	Fuel gas lighting systems have no continuous pilot light.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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#2 Medium priority and has less of an impact on energy efficiency than #1 does.

This is represented by the purple box in the first column and contains a superscript #2.

#3 Lowest priority and lowest impact on energy efficiency.

This is represented by the yellow box in the first column and contains a superscript