

Prescriptive - Total UA Alternative - Reading REScheck Report

Project title is helpful



Generated by REScheck-Web Software
Compliance Certificate

Very Correct Location—
if not listed in
REScheck use a
nearby location

Verify Code Year

Project: Clovis, New Mexico
 Energy Code: **2021 IECC**
 Location: **Clovis, New Mexico**
 Construction Type: **Single-family**
 Project Type: **New Construction**
 Conditioned Floor Area: **1,200 ft²**
 Glazing Area: **10%**
 Climate Zone: **4 (4068 HDD)**
 Permit Date:
 Permit Number:
 All Electric: **false**
 Is Renewable: **false**
 Has Charger: **false**
 Has Battery: **false**
 Has Heat Pump: **false**

Choices are Single family or Multi-Family

Choices are New Construction, Addition, or Alternative

Include all conditioned floor area

Verify Climate Zone

Glazing area is not limited

Shows UA-trade off this is correct

Construction Site: Owner/Agent: Designer/Contractor:

Compliance: Passes using UA trade-off

Compliance: **3.0% Better Than Code** Maximum UA: **132** Your UA: **128** 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.

Shows passing by 3.0%

All thermal envelope assemblies can be used in REScheck except slab on grade insulation. Look at table R402.1.2. 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.

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All entries are gross area in square feet. REScheck knows to subtract the doors and windows from the gross wall area. The exception is slab on grade which is entered as perimeter linear feet.

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

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

The required U-factor is from Table R402.1.2

Compliance: Passes Using UA trade-off

Compliance: **3.0% Better Than Code** Maximum UA: **132** Your UA: **128** 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.

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Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Ceiling: Raised or Energy Truss	1,200	38.0	0.0	0.025	0.024	30	29
Wall: Wood Frame, 24" o.c.	1,260	20.0	5.0	0.043	0.045	47	49
Door: Solid Door (under 50% glazing)	42			0.300	0.320	13	13
Window: Vinyl Frame SHGC: 0.40	128			0.300	0.320	38	41
Floor: Slab-On-Grade (Unheated) Insulation depth: 4.0' Insulation position: Vertical Insulation	140		10.0	0.480	0.480	0	0

The designer has the option to group all like assemblies together. Like the example. They could also choose to show by the direction. North, South, East and West. Either is acceptable.

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

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

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

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Look at the proposed U-factor at 0.017

The required U-factor is from Table R402.1.2 at 0.024. (REScheck uses the values in the IECC and **not the New Mexico amendments of 0.026**)

Compliance: Passes using UA trade-off

Compliance: **3.0% Better Than Code** Maximum UA: **132** Your UA: **128** 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: Raised or Energy Truss	1,200	38.0	0.0	0.025	0.024	30	29
Wall: Wood Frame, 24" o.c.	1,260	20.0	5.0	0.043	0.045	47	49
Door: Solid Door (under 50% glazing)	42			0.300	0.320	13	13
Window: Vinyl Frame SHGC: 0.40	128			0.300	0.320	38	41
Floor: Slab-On-Grade (Unheated) Insulation depth: 4.0' Insulation position: Vertical Insulation	140		10.0	0.480	0.480	0	0

Raised heel or Energy Truss

A 2x4 truss without a raised heel compresses the insulation between the top plate and the roof deck, which the code accounts for using its basic U-factor.

Choosing a high heeled truss should allow for enough space that the insulation can remain full height at the top plate, allowing for a reduced insulation size.

An R-38, for instance would need about 12" of space if using batt or blown-in cellulose,

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Flat Ceiling or Scissor Truss

Look at the proposed U-factor at 0.030

The required U-factor is from Table R402.1.2 at 0.024 (REScheck uses the values in the IECC and not the New Mexico amendments of 0.026)

Compliance: Fails using UA trade-off

Compliance: **1.5% Worse Than Code** Maximum UA: **132** Your UA: **137** 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	38.0	0.0	0.030	0.024	36	29
Wall: Wood Frame, 24" o.c.	1,260	20.0	5.0	0.043	0.045	47	49
Door: Solid Door (under 50% glazing)	42			0.300	0.320	13	13
Window: Vinyl Frame SHGC: 0.40	128			0.300	0.320	38	41
Floor: Slab-On-Grade (Unheated) Insulation depth: 4.0' Insulation position: Vertical Insulation	140		10.0	0.480	0.480	0	0

Same example at the previous page with the difference of using a typical flat ceiling. It now fails by 1.9%

Having uncompressed full depth of insulation up and over the top plate has a significant impact on the performance of the roof insulation.

This impact is demonstrated in this report above.

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An Additional Efficiency Option must be selected.

REScheck only includes in the list of additional efficiency options that are provided in the IECC and not additional options the New Mexico amendments have added to the list.

Reach out to CID or the local building department to verify how this should be demonstrated when utilizing one of the additional options

Additional Efficiency Package(s)

Required: 1 Proposed: 1

Description	Credits
Efficient Thermal Distribution Performance	1.0

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 2021 IECC requirements in REScheck Version : REScheck-Web and to comply with the mandatory requirements listed in the REScheck Inspection Checklist.

Name - Title

Signature

Date

Have the designer sign and date the document.

This document does **not require a stamp** to it.

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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. The user must			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
	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] 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:

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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.

#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 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)

#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 #3