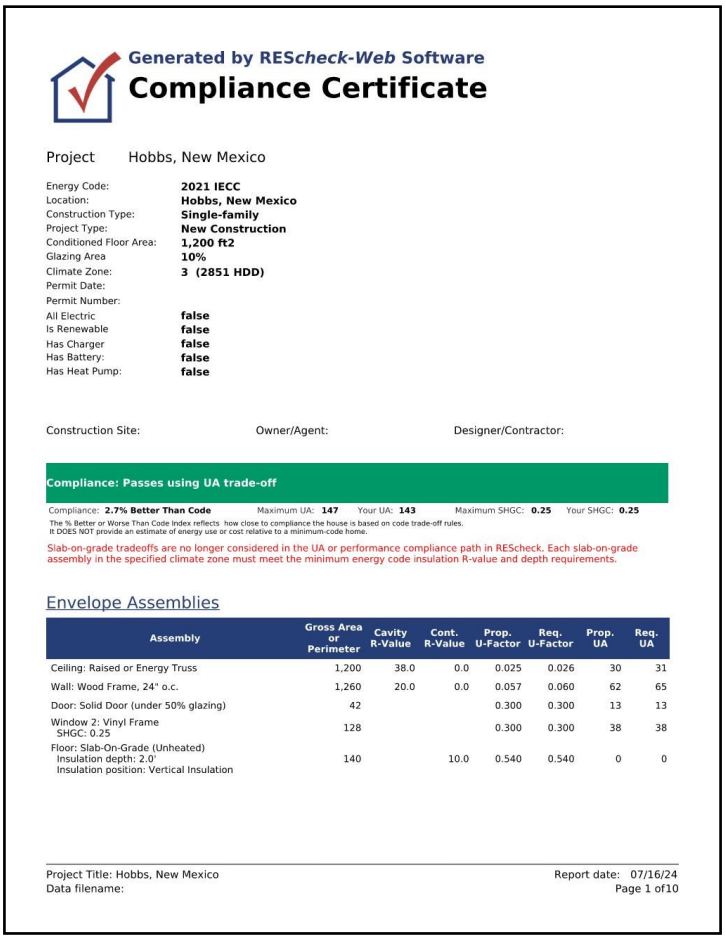
Prescriptive - Total UA Alternative - Reading REScheck Report

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 is to create the report is to use REScheck— a free web based program that is provided by the Department of Energy which can be used by anyone that needs to demonstrate compliance for a project.

https://www.energycode.gove/rescheck

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



Generated by RES*check-Web* Software

Compliance Certificate

Project Hobbs, New Mexico

Energy Code:	**2021 IECC**
Location:	**Hobbs, New Mexico**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**1,200 ft2**
Glazing Area	**10%**
Climate Zone:	**3 (2851 HDD)**
Permit Date:	
Permit Number:	
All Electric	**false**
Is Renewable	**false**
Has Charger	**false**
Has Battery:	**false**
Has Heat Pump:	**false**

Construction Site: Owner/Agent: Designer/Contractor:

Compliance: Passes using UA trade-off

Compliance: **2.7% Better Than Code** Maximum UA: **147** Your UA: **143** Maximum SHGC: **0.25** Your SHGC: **0.25**

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	0.026	30	31
Wall: Wood Frame, 24" o.c.	1,260	20.0	0.0	0.057	0.060	62	65
Door: Solid Door (under 50% glazing)	42			0.300	0.300	13	13
Window 2: Vinyl Frame SHGC: 0.25	128			0.300	0.300	38	38
Floor: Slab-On-Grade (Unheated) Insulation depth: 2.0' Insulation position: Vertical Insulation	140		10.0	0.540	0.540	0	0

Project Title: Hobbs, New Mexico
Data filename:
Report date: 07/16/24
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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

Verify Code Year

Project Hobbs, New Mexico

Energy Code:	2021 IECC
Location:	Hobbs, New Mexico
Construction Type:	Single-family
Project Type:	New Construction
Conditioned Floor Area:	1,200 ft2
Glazing Area	10%
Climate Zone:	3 (2851 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

Construction Site: Owner/Agent:

Shows UA-trade off this is correct

Compliance: Passes using UA trade-off

Compliance: **2.7% Better Than Code** Maximum UA: **147** Your UA: **143** Maximum SHGC: **0.25** Your SHGC: **0.25**

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

lab-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 2.7%

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.

Prescriptive - Total UA Alternative - Reading REScheck Report

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 are calculated by the software.

The required U-factor is from Table R402.1.2

Compliance: Passes using UA trade-off

Compliance: **2.7% Better Than Code** Maximum UA: **147** Your UA: **143** Maximum SHGC: **0.25** Your SHGC: **0.25**

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	0.026	30	31
Wall: Wood Frame, 24" o.c.	1,260	20.0	0.0	0.057	0.060	62	65
Door: Solid Door (under 50% glazing)	42			0.300	0.300	13	13
Window 2: Vinyl Frame SHGC: 0.25	128			0.300	0.300	38	38
Floor: Slab-On-Grade (Unheated) Insulation depth: 2.0' Insulation position: Vertical Insulation	140		10.0	0.540	0.540	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

Prescriptive - Total UA Alternative - Reading REScheck Report

Look at the proposed U-factor at 0.025

The required U-factor is from Table R402.1.2 at 0.026. (REScheck uses the values in the IECC and not the New Mexico amendments of 0.028)

Compliance: Passes using UA trade-off

Compliance: **2.7% Better Than Code** Maximum UA: **147** Your UA: **143** Maximum SHGC: **0.25** Your SHGC: **0.25**

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	0.026	30	31
Wall: Wood Frame, 24" o.c.	1,260	20.0	0.0	0.057	0.060	62	65
Door: Solid Door (under 50% glazing)	42			0.300	0.300	13	13
Window 2: Vinyl Frame SHGC: 0.25	128			0.300	0.300	38	38
Floor: Slab-On-Grade (Unheated) Insulation depth: 2.0' Insulation position: Vertical Insulation	140		10.0	0.540	0.540	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, between the top plate and the underside of the roof deck for this option.

Prescriptive - Total UA Alternative - Reading REScheck Report

Look at the proposed U-factor at 0.030

The required U-factor is from Table R402.1.2 at 0.026 (REScheck uses the values in the IECC and not the New Mexico amendments of 0.028)

Compliance: Fails using UA trade-off

Compliance: **1.4% Worse Than Code** Maximum UA: **147** Your UA: **149** Maximum SHGC: **0.25** Your SHGC: **0.25**

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	0.026	36	31
Wall: Wood Frame, 24" o.c.	1,260	20.0	0.0	0.057	0.060	62	65
Door: Solid Door (under 50% glazing)	42			0.300	0.300	13	13
Window 2: Vinyl Frame SHGC: 0.25	128			0.300	0.300	38	38
Floor: Slab-On-Grade (Unheated) Insulation depth: 2.0' Insulation position: Vertical Insulation	140		10.0	0.540	0.540	0	0

Flat Ceiling or Scissor Truss

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.

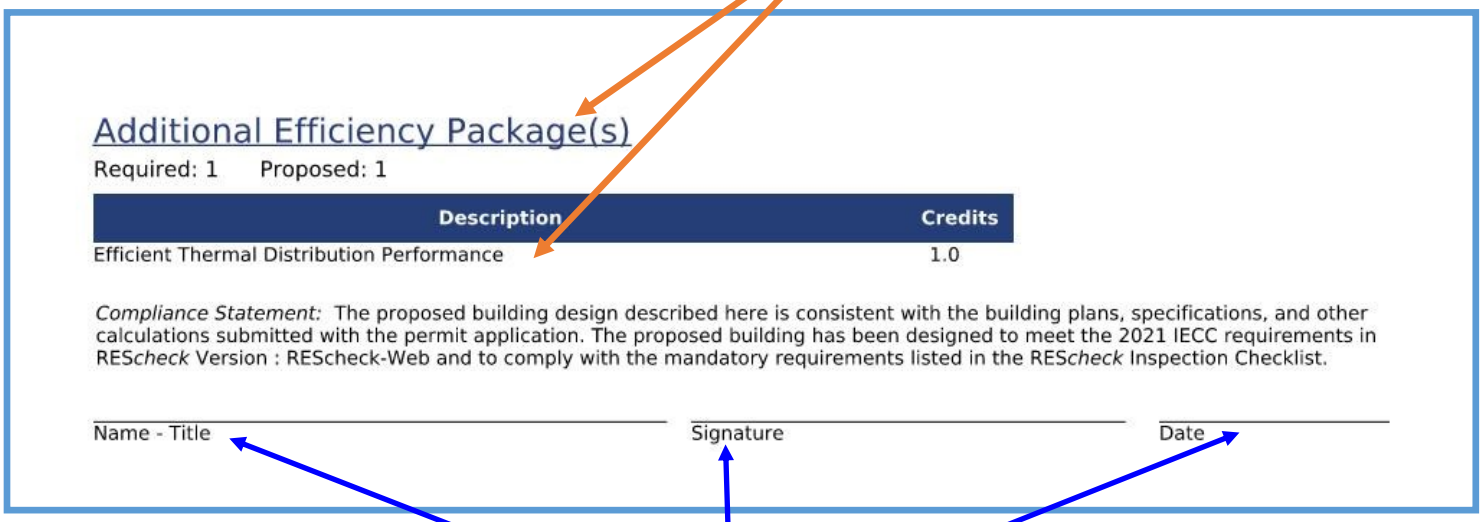
This impact is demonstrated in this report above.

Prescriptive - Total UA Alternative - Reading REScheck Report

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 provided in the New Mexico amendments.



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 RES*check* Version : REScheck-Web and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title _____ Signature _____ Date _____

Have the designer sign and date the document.

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

Prescriptive - Total UA Alternative - Reading REScheck Report

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

RES*check* Software Version : REScheck-Web

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 0.0% were addressed directly in the RES*check* software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck requirement, the user certifies that a code requirement will be met and how that is doc is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Indicates the designer made no comments

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			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
	Commercial Provisions.			☐Complies ☐Does Not ☐Not Observable ☐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____	☐Complies ☐Does Not ☐Not Observable ☐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-____ ☐ Unheated ☐ Heated	R-____ ☐ Unheated ☐ Heated	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2, 402.2.10 [FO2][1]	Slab edge insulatio manufacturer's ins			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.1.2 [FO3][1]	Slab edge insulatio depth/length.			☐Complies ☐Does Not ☐Not Observable ☐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.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.9 [FO12][2]	Snow and ice-melting system controls installed to shut off system when pavement temperature > 50F and no precipitation.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

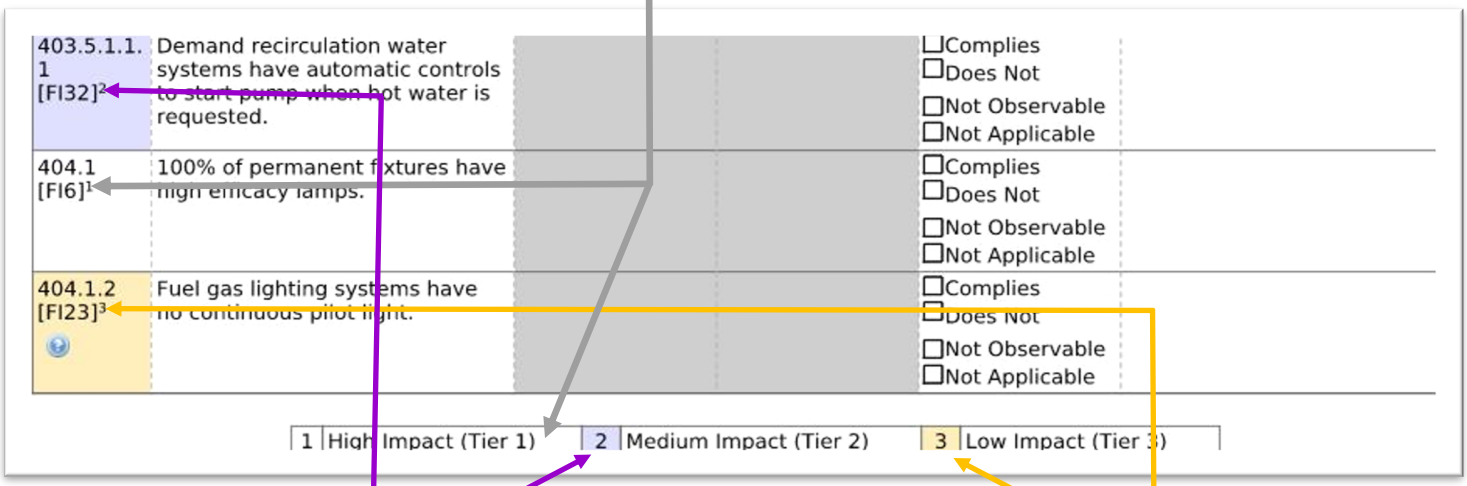
Designer can fill out to provide further information

Additional Comments/Assumptions:

Prescriptive - Total UA Alternative - Reading REScheck Report

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. **WHITE = HIGH PURPLE = MEDIUM 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



#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

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