

## Instructions for Energy Calculator Based on the 2014 ORSC

The Standard Base Case is the total area and sets the “Target UA” for the building. The areas are a total of the building materials.

The Proposed Alternative consists of what is on the plans.

In the Standard Base Case table you will fill in the Area column for each of the categories that apply to your structure.

### Standard Base Case

<u>BUILDING COMPONENTS</u>	<u>Areas</u>	<u>U-factor</u>	<u>Areas x U</u>
Flat ceilings	1000	0.031	31.00
Vaulted ceilings		0.042	0.00
Total area of <b>ALL</b> walls	400	0.060	24.00
Underfloor	1000	0.028	28.00
Slab edge ( <i>enter lineal feet</i> )		0.520	0.00
Windows	70	0.350	24.50
Skylights<2%	0	0.750	0.00
Skylights>2%		0.600	0.00
Exterior Doors		0.200	0.00
Doors with >2.5ft <sup>2</sup> glazing		0.400	0.00
	<b>Sum</b>		<b>107.5</b>

In the Proposed Alternative portion you will select from the drop down menus for each of the categories that apply to your structure.

### Proposed Alternative

<u>BUILDING COMPONENTS</u>	<u>R-Value</u>	<u>Construction Type</u>	<u>Areas</u>	<u>U-factor</u>	<u>Areas x U</u>
Flat ceilings	R-38	Conventional framing	400	0.031	12.40
Vaulted ceilings	R-38	=> 8/12 roof pitch	0	0.000	0.00
Conventional wood-framed walls	R-38	Advanced framing	400	0.058	23.20
Other wall types from Wall Tab	R-49	Conventional framing	300	0.060	18.00
Underfloor	R-49	=> 8/12 roof pitch	1000	0.028	28.00
Slab edge ( <i>enter lineal feet</i> )	R-60	Flat Ceiling	0	0.000	0.00

If you are going to be using mixed or other wall types then you will need to go to the Walls Overall U-Factor tab and fill out the table on that tab. Make sure you submit your wall type descriptions and how you got the U-Factor for that wall type. Such as a legend on the plans.



Example:

- Wall Type 1: 2x6 studs at 16”oc with R-21
- Wall Type 2: 2x6 studs at 16”oc with R-21 and R-7 ridged
- Wall Type 3: 6” steel studs at 24”oc with R-21
- Wall Type 4: Quad-Lock QPX3 ICF

**Note:** Make sure that the total wall area in the Proposed Alternatives area equals the area in the Standard Base Case area.

**Standard Base Case**

<u>BUILDING COMPONENTS</u>	<u>Areas</u>	<u>U-factor</u>	<u>Areas x U</u>
Flat ceilings	1000	0.031	31.00
Vaulted ceilings		0.042	0.00
Total area of <b>ALL</b> walls	400	0.060	24.00
Underfloor	1000	0.028	28.00
Slab edge ( <i>enter lineal feet</i> )		0.520	0.00
Windows	70	0.350	24.50
Skylights<2%	0	0.750	0.00
Skylights>2%		0.600	0.00
Exterior Doors		0.200	0.00
Doors with >2.5ft <sup>2</sup> glazing		0.400	0.00
	<b>Sum</b>		<b>107.5</b>

**Proposed Alternative**

<u>BUILDING COMPONENTS</u>	<u>R-Value</u>	<u>Construction Type</u>	<u>Areas</u>	<u>U-factor</u>	<u>Areas x U</u>
Flat ceilings	R-38, Conventional framing		400	0.031	12.40
Vaulted ceilings	SELECT ITEM		0	0.000	0.00
Conventional wood-framed walls	SELECT ITEM		400	0.000	0.00
<b>Mixed</b> or <b>Other</b> wall types	SEE Walls Overall U-Factor Tab		0	0.000	0.00
Underfloor	R-30, Underfloor		1000	0.028	28.00
Slab edge ( <i>enter lineal feet</i> )	SELECT ITEM		0	0.000	0.00

**Brand & Model Number (provide product cut sheets)**

<i>Insulated Concrete Form Walls</i>				0.00
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If you are only going to be using ICF type walls for the **entire** structure then you can enter the information on the main tab. Fill in the Yellow cells and submit the cut sheets for the wall system you are going to use.

**Brand & Model Number (provide product cut sheets)**

<i>Insulated Concrete Form Walls</i>				0.00
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For windows, skylights and doors you will need to go to each of those tabs and enter the information into the yellow fields for each. You will need to use the Overall U-Factor for the entire assembly that you are installing. Make sure you provide cut-sheets for the windows, doors and skylights you are using. The Final information from those tabs will be entered into the Measure 4 Tab automatically.

**Note 1:** If you have several of the same size and U-Factors you may add them up and enter it into a single line.

**Note 2:** Sliding glass doors and swinging glass doors, including glazed french doors with NFRC labels are considered windows, not doors.

***TOTAL WINDOW, DOOR AND SKYLIGHT (input on Window, door and wall tabs)***  
***(provide product cut sheets)***

Windows from Window Tab	70	0.314	22.00
Skylights from Skylight Tab	0	0.000	0.00
Exterior Doors from Door Tab	0	0.000	0.00
Doors with >2.5ft <sup>2</sup> glazing	0	0.000	0.00
	<b>Sum</b>		<b>103.6</b>

**EXAMPLE 1**

Doors without Glazing  
 Average Exterior Door U-Factor

Door Designation	Construction	Area of Door(s)	U-Factor
Door Type - 1	solid wood	18	0.600
Door Type - 2	solid wood	20	0.600
Door Type - 3	insulated metal	20	0.420
Door Type - 4			
Door Type - 5			
Door Type - 6			
Door Type - 7			
Door Type - 8			
Door Type - 9			
Door Type - 10			
		<b>Square Feet</b>	<b>Average U-Factor</b>
	<b>Total:</b>	58	0.538

or

**EXAMPLE 2**

Doors with >2.5ft<sup>2</sup> glazing  
 Average Exterior Door U-Factor

Door Designation	Construction	Area of Door(s)	U-Factor
Door Type - 1	solid wood	38	0.600
Door Type - 2	insulated metal	20	0.420
Door Type - 3			
Door Type - 4			
Door Type - 5			
Door Type - 6			
Door Type - 7			
Door Type - 8			
Door Type - 9			
Door Type - 10			
		<b>Square Feet</b>	<b>Average U-Factor</b>
	<b>Total:</b>	58	0.538

**EXAMPLE**

Average Skylight U-Factor

Skylight Designation	Area of Skylight(s)	U-Factor of Assembly
Skylight- 1	16	0.60
Skylight- 2	10	0.58
Skylight- 3	12	0.50
Skylight- 4		
Skylight- 5		
Skylight- 6		
Skylight- 7		
Skylight- 8		
Skylight- 9		
Skylight- 10		
	<b>Square Feet</b>	<b>Average U-Factor</b>
<b>Total:</b>	38	0.563

The final U-Factor and areas will be automatically entered into the fields on the Measure 4 tab from the other tabs.

If your proposed items equal 15% or better performance than Standard Base Case you will see a PASS in the box on the main tab, if not you will see a FAIL. You will be able to see how close you are in the box below the PASS/FAIL box in percentage. You will want to see a -15% or lower number.

0	0.000	0.00
0	0.000	0.00
Sum		103.6

PASS or FAIL: **FAIL**  
-3.6%

0	0.000	0.00
0	0.000	0.00
Sum		90

PASS or FAIL: **PASS**  
-16.3%

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