



Wall Construction Help

Select the appropriate wall construction from the drop down choices. For a log house, choose "Wood Frame".

Choose the appropriate exterior wall finish or cladding from the drop down list. If the exterior wall finish or cladding is not listed select the entry that is most similar in characteristics.

Wall insulation should include attic knee walls if the attic area is finished and included in the conditioned floor area calculation.

For a log house, the insulation level should be equal to R-1 per inch of wall thickness.

If there are different insulation R-values on any one side of the house, perform a UA calculation (you can use the **Home Energy Score Assessor Calculator*** for this) to determine the appropriate R-value to enter:

- $(A_1/R_1 + A_2/R_2)/(A_1+A_2) = U$
- $1/U = R$
- Where: {A is area (ft²), R is the nominal R-value (must be >=1), U is U-value}

De-rate the insulation R-value for installation quality. (see diagrams and table for de-rate factors)

R-Value is a measure of the resistance of insulating material to heat transfer. The higher the R-value number, the more effective the insulation. You can use the inches guidelines to estimate the R-value of the floor insulation for fiberglass and similar insulations, or calculate the R-value by identifying the insulation type in the table below and multiplying the number of inches of insulation present by the R-value per inch.

*The **Home Energy Score Assessor Calculator** is available to Assessors and is located on the **Partner Portal**.

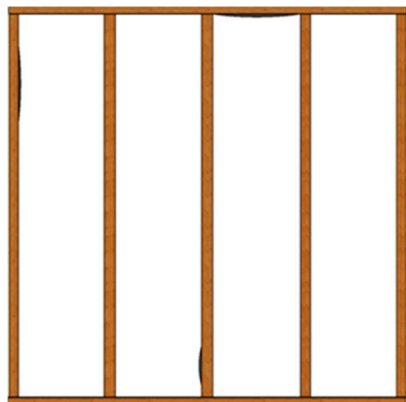
Insulation Tables					
Insulation Type	R-value		Good	Fair	Poor
Loose-Fill		Measured Batt Thickness	Effective R-value (2.5 per inch)	Effective R-value (1.8 per inch)	Effective R-value (0.7 per inch)
Cellulose	3.4	0	0	0	0
Fiberglass	2.5	1	3	2	1
Rockwool	3.1	2	5	4	1.5
Perlite	2.5	3	8	5	2

Vermiculite	2.2	4	10	7	3
Rigid		5	13	9	3.5
Polystyrene large curd molded	4	6	15	11	4
Polystyrene small curd extruded	5	7	18	13	5
Polyurethane	6	8	20	14	5.5
Polyisocyanurate	6	9	23	16	6
Spray Foam-in-place		10	25	18	7
Urethane	6	11	28	20	8
		12	30	22	8.5
Fiberglass Batt (thickness)					
3 1/2 in	13	*Derived from ASHRAE document "Heat Transmission Coefficients for Walls & Roofs"			
6 in	19				
10 in	30	apply de-rates to batt insulation - see graphics below			
12 in	38				

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Insulation Installation Quality

Good



Fair



Poor

