

# Estimated R-values for Compressed Fiber Glass Batt Insulation

## When to Account for Compression of Batt Insulation

Fiber glass insulation manufacturers design batts to fit standard wood and metal framing sizes. However, there may be times when insulation is compressed to fit specific needs. While fiber glass insulation can be compressed below labeled thickness and still achieve Grade I installation, manufacturers' instructions specify installation without compression to achieve labeled R-value. When uniformly compressed below the labeled

thickness, some reduction in R-value will occur in fiber glass batt insulation. The chart below displays the compressed R-value of standard batt products installed across several nominal framing cavity depths. The data represented on the chart come from the majority of fiber glass insulation manufacturers. Cavities that have a depth greater than the labeled thickness will see no compression and therefore no reduction in R-value.

## Guidance and Limitations

- Always Use Manufacturer Data First.** Manufacturer R-value reduction data for specific products always takes precedence over the R-values included in this chart. Be sure to contact your manufacturer to have the most accurate product-specific information.
- Intended Use for Inspections Only.** This chart is intended for use by inspectors as guidance in assessing the thermal resistance of compressed fiber glass batt insulation. These data are not intended as recommendations for alternative design selection or non-standard installation.
- No Extrapolation/Interpolation.** The R-values noted below are applicable only to the exact cavity depths and insulation label R-values/label thicknesses listed. Do not calculate or estimate R-values in the shaded areas. Contact the manufacturer for specific products and designs.
- Durability Advisory.** Some products will resist compression into framing cavities and may deform sheathing for the cavity depths and label R-values listed. Consult with the manufacturer on specific applications to ensure durability of construction.

Estimated R-values for Insulation Compressed into Framing Cavities

Nominal Lumber Size	Cavity Depth	Estimated R-values for Insulation Compressed into Framing Cavities										
I Joist	14"	49										
I Joist	11 7/8"	44	38									
2x12	11 1/4"	42	37	30								
I Joist	9 1/2"		33	29								
2x10	9 1/4"		32	29	30	25						
2x8	7 1/4"			25	25	24						
2x6 (metal)	6"					21			19			
2x6	5 1/2"						21	20	18			
2x4 (metal)	4"						16	16	14			
2x4 (metal)	3 5/8"						15	15				
2x4	3 1/2"						15	14		15	13	11
2x3	2 1/2"									11	10	8.9
2x2 (metal)	1 5/8"											6.5
2x2	1 1/2"											6.1
<b>Label R-Value</b>		<b>R-49</b>	<b>R-38</b>	<b>R-30</b>		<b>R-25</b>	<b>R-21</b>	<b>R-20</b>	<b>R-19</b>	<b>R-15</b>	<b>R-13</b>	<b>R-11</b>
<b>Label Thickness</b>		14"	12"	10"	9 1/2"	8"	5 1/2"		6 1/4"	3 1/2"		