



TECHNICAL BULLETIN

BUILDING INSULATION

COMPRESSED R-VALUE CHART

When compressed to less than its labeled thickness, glass fiber insulation will experience a reduction in R-value. The chart below indicates the compressed R-value of standard building insulation products when installed in framing cavities with a depth that is less than the labeled thickness of the insulation.

NOMINAL LUMBER SIZE	CAVITY DEPTH ¹	INSULATION R-VALUES WHEN COMPRESSED IN FRAMING CAVITY ²													
		R-49	R-38	R-38C	R-30	R-30C	R-25	R-22	R-21	R-20	R-19	R-15	R-13	R-11	R-8
I joist	14"	49													
I joist	11-7/8"	44	38												
2 x 12	11-1/4"	42	37												
I joist	9-1/2"	38	33												
2 x 10	9-1/4"	37	32	35	29										
2 x 8	7-1/4"		27	30	25	27	24								
2 x 6 ³	6"				22	24	21	21							
2 x 6	5-1/2"				21	22	20	17	21	20	17				
2 x 4 ³	4"						16	15	16	16	14				
2 x 4 ³	3-5/8"						15	14	15	15	13				
2 x 4	3-1/2"						14	14	15	14	13	15	13	11	
2 x 3	2-1/2"										10	11	10	9.0	8.0
2 x 2 ³	1-5/8"												7.3	6.6	6.1
2 x 2	1-1/2"												6.8	6.2	5.8
2 x 1	3/4"														3.4
PRODUCT R-VALUE		R-49	R-38	R-38C	R-30	R-30C	R-25	R-22	R-21	R-20	R-19	R-15	R-13	R-11	R-8
LABEL THICKNESS		14"	12"	10-1/4"	9-1/2"	8-1/4"	8"	6-1/2"	5-1/2"	5-1/2"	6-1/2"	3-1/2"	3-1/2"	3-1/2"	2-1/2"

¹ Minimum dressed lumber thickness per U. S. Dept. of Commerce / NIST publication PS 20-10.

² Above listing for information only; some products will resist compression into framing cavities and deform sheathing.

³ Metal framing.

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