

InSoFast CX-44 Panels 10% Better Performance 3" More Interior Space



InSoFast CX 44 Wall Assembly			
Component	R-Value	Assembly R-Value	
Interior air film	.68		
1/2" drywall	.45		
CX 44 panel	11.0		
Container sidewall	0		
Exterior air film	.17		
R-Value	12.63		
U-Value	.079		
Total InSoFast Wall Assembly R-Value			12.3 (U=.08)

R-15 Cavity Insulation with 2x4 Framing Assembly				
2x4 Framing		Cavity Insulation		Assembly R-Value
Component	R-Value	Component	R-Value	
Interior air film	.68	Interior air film	.68	
1/2" drywall	.45	1/2" drywall	.45	
2x4 stud	4.38	R-15 cavity insulation	15.0	
Container sidewall	0	Container sidewall	0	
Exterior air film	.17	Exterior air film	.17	
R-Value	5.68	R-Value	16.3	
U-Value	.17	U-Value	.06	
% framing at 16" o.c.	25%	% insulation at 16" o.c.	75%	
Total Framed/Insulated Wall Assembly R-Value				

* Calculating Assembly Wall R-Value Formula: $1 / (\text{Assembly U-Value}) = 1 / (\text{U-Value of studs} \times \% + \text{U-Value of cavity} \times \%)$

Flat 2x4 Framing with 1-1/2" Foam Board Assembly



Flat 2x4 Framing		Cavity Insulation		Assembly R-Value	
Component	R-Value	Component	R-Value		
Interior air film	.68	Interior air film	.68		
1/2" drywall	.45	1/2" drywall	.45		
2x4 stud	1.88	1-1/2" cavity insulation	7.5		
Container sidewall	0	Container sidewall	0		
Exterior air film	.17	Exterior air film	.17		
R-Value	3.18	R-Value	8.8		
U-Value	.314	U-Value	.114		
% framing at 16" o.c.	30%	% insulation at 16" o.c.	70%		
Total Framed/Insulated Wall Assembly R-Value					5.75* (U=.174)

Metal framing can steal half of the R-value in a shipping container.

Thermal bridging in traditional home construction has been addressed with continuous insulation on the exterior of homes. A steel container in itself is one large thermal bridge. The cold or heat passes easily through metal or wood studs. Offsetting the studs does provide some disconnect but the reduced insulation at that point will still allow heat transfer. InSoFast panels are designed as continuous insulation. The natural of the stud material along with the "H" style beam of the stud allows only minimal transfer.



ASHRAE 90.1 Correction Factors for Metal Wall Framing

Stud Size	Stud Spacing	Cavity Insulation	Correction Factor	Effective R-value
2 x 4	16" o.c.	R-11	.50	R-5.5
		R-13	.46	R-6.0
		R-15	.43	R-6.4
2 x 4	24" o.c.	R-11	.60	R-6.6
		R-13	.55	R-7.2
		R-15	.52	R-7.8

American Society of Heating, Refrigerating and Air-Conditioning Engineers