

Product Information Bulletin

Thermal Resistance and Thermal Transmittance for Insulspan SIP System with PlastiSpan® Insulation

The Insulspan® SIP (Structural Insulating Panel) System is an energy efficient building system consisting of a PlastiSpan® insulation core with oriented strand board (OSB) structurally laminated to the interior and exterior faces. PlastiSpan insulation is an expanded polystyrene (EPS) insulation manufactured to meet ASTM C578, Type I, **Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation**, and CAN/ULC-S701, Type 1, **Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering**.

SIP Total Thickness		Thickness EPS Core & OSB		Thermal Resistance		Thermal Transmittance		SIP Weight	
Inches	mm	Inches	mm	$\frac{\text{ft}^2 \cdot \text{h} \cdot \text{°F}}{\text{BTU}}$	$\frac{\text{m}^2 \cdot \text{°C}}{\text{W}}$	$\frac{\text{BTU}}{\text{ft}^2 \cdot \text{h} \cdot \text{°F}}$	$\frac{\text{W}}{\text{m}^2 \cdot \text{°C}}$	lb/ft ²	kg/m ²
4 1/2	114	7/16	11	15.0	2.64	0.067	0.379	3.2	15.7
		3 5/8 7/16	92 11						
6 1/2	165	7/16	11	22.6	3.98	0.044	0.251	3.4	16.5
		5 5/8 7/16	143 11						
8 1/4	210	7/16	11	29.2	5.15	0.034	0.194	3.5	17.2
		7 3/8 7/16	187 11						
10 1/4	260	7/16	11	36.8	6.49	0.027	0.154	3.7	18.1
		9 3/8 7/16	238 11						
12 1/4	311	7/16	11	44.4	7.83	0.022	0.128	3.9	18.9
		11 3/8 7/16	289 11						

Note: The **thermal resistance (R-value/RSI-value)** and **thermal transmittance (U-factor)** values above are for an Insulspan SIP only at a mean temperature of 75 °F (24 °C) and do not include panel framing or connection material, interior/exterior cladding or finish materials and interior/exterior air films.

Insulspan SIP wall and roof assemblies require fewer framing members than conventional wood frame construction resulting in energy efficient building construction with **higher overall thermal resistance (lower overall thermal transmittance)**. In addition, air leakage is one of the biggest sources of energy loss in most buildings. Air leakage rate and overall thermal resistance (or thermal transmittance) are measures used to determine the energy efficiency of building construction. Significantly **lower air leakage rates** are achievable for energy efficient buildings constructed using the Insulspan SIP System.

The combined higher overall R-value/RSI-value and lower air leakage characteristic for building assemblies built with the Insulspan SIP System results in significant long-term energy cost savings versus other construction methods such as wood frame construction.