

## Product Information Bulletin

### Thermal Resistance and Thermal Transmittance for Insulspan SIP System with EnerSpan™ Insulation

The **Insulspan® SIP** (Structural Insulating Panel) **System** is an energy efficient building system consisting of an **EnerSpan®** insulation core with oriented strand board (OSB) structurally laminated to the interior and exterior faces. **EnerSpan** insulation is an expanded polystyrene (EPS) insulation with a silver-grey colour manufactured using Neopor® F5300 Plus provided by BASF. Neopor F5300 Plus is a graphite-enhanced expandable polystyrene (GPS) raw material that reduces radiation heat transfer resulting in EPS insulation with a higher R-value/RSI-value compared to standard white EPS insulation.

SIP Total Thickness		Thickness EPS Core & OSB		Thermal Resistance		Thermal Transmittance		SIP Weight	
Inches	mm	Inches	mm	$\frac{\text{ft}^2 \cdot \text{h} \cdot ^\circ\text{F}}{\text{BTU}}$	$\frac{\text{m}^2 \cdot ^\circ\text{C}}{\text{W}}$	$\frac{\text{BTU}}{\text{ft}^2 \cdot \text{h} \cdot ^\circ\text{F}}$	$\frac{\text{W}}{\text{m}^2 \cdot ^\circ\text{C}}$	lb/ft <sup>2</sup>	kg/m <sup>2</sup>
4 1/2	114	7/16	11	18.3	3.22	0.055	0.311	3.2	15.7
		3 5/8	92						
		7/16	11						
6 1/2	165	7/16	11	27.7	4.87	0.036	0.205	3.4	16.5
		5 5/8	143						
		7/16	11						
8 1/4	210	7/16	11	35.9	6.32	0.028	0.158	3.5	17.2
		7 3/8	187						
		7/16	11						
10 1/4	260	7/16	11	45.3	7.98	0.022	0.125	3.7	18.1
		9 3/8	238						
		7/16	11						
12 1/4	311	7/16	11	54.7	9.63	0.018	0.104	3.9	18.9
		11 3/8	289						
		7/16	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.**