

# Product Information Bulletin

BULLETIN NO.	202
ISSUED:	September 25, 2006
REPLACES:	NEW

## Overall Thermal Resistance Value (R-Value)

The Insulspan<sup>®</sup> SIP System provides wall and roof assemblies with higher **overall** (effective) **thermal resistance (R-value)** than other construction methods. The overall **R-value** of a building assembly includes the effect of thermal bridges as a result of framing members and is a measure of its ability to resist heat flow through it. The higher the overall **R-value** of a building assembly, the lower the long-term energy costs will be for heating and cooling.

The table below provides typical **overall R-Values** calculated for wall and roof assemblies built with the Insulspan SIP System based upon:

1. Wall and roof assemblies with gypsum board applied on the interior face.
2. Wall assemblies with vinyl siding on the exterior face.
3. Roof assemblies with sheathing paper with asphalt shingles on the exterior face.
4. Insulspan SIP with expanded polystyrene (EPS) insulation core and exterior skins: of engineered oriented strand board (OSB) exterior rated sheathing.
5. Panel to panel joint design options include OSB surface spline or 2x dimensional lumber.

**Table 1 - Typical Overall R-Values**

Panel Thickness	Insulation Thickness	Panel to Panel Connection Type	Roof Overall R-Value	Wall Overall R-Value
4-1/2"	3-5/8"	OSB Spline	16.3	16.5
		Single 2x Lumber	15.7	15.5
6-1/2"	5-5/8"	OSB Spline	23.8	23.3
		Single 2x Lumber	23.4	22.3
8-1/4"	7-3/8"	OSB Spline	30.3	30.4
		Single 2x Lumber	29.2	28.0
10-1/4"	9-3/8"	OSB Spline	37.9	
		Single 2x Lumber	35.8	
12-1/4"	11-3/8"	OSB Spline	45.4	
		Single 2x Lumber	40.8	

Air leakage is one of the biggest sources of energy loss in most buildings. The air leakage rate for a building (quantified in terms of air changes per hour) is often used to determine the energy efficiency of building construction. Air leakage rates vary widely for different types of house construction with values of 0.2 acph or lower achievable for energy efficient house construction using the Insulspan SIP System.

***The combined high overall R-Value and low air leakage characteristic of buildings built with the Insulspan SIP System results in significantly lower energy costs versus other construction methods such as wood frame construction.***