

## Product Information Bulletin

### Insulspan SIP System - City of Vancouver Building By-Law No. 10908

Page 1 of 2

The **Insulspan® SIP** (Structural Insulating Panel) **System** is an energy efficient building system that consists of a core of expanded polystyrene (EPS) insulation with oriented strand board (OSB) structurally laminated to the interior and exterior faces. City of Vancouver Building By-Law No. 10908 adopts the 2012 British Columbia Building Code (BCBC) with modifications for energy efficiency requirements as noted in the table below.

**Table 1 – City of Vancouver Building By-Law No. 10908  
Minimum Thermal Resistance Requirements**

Table 10.2.1.1.A Minimum Thermal Resistance of Insulation RSI, m <sup>2</sup> °C/W for Buildings of Residential Occupancy less than 4 Storeys in Building Height Forming part of Sentence 10.2.1.1.(2)	
Building Assembly	Value Required
Attic Space other than one and two family dwellings <sup>(1)</sup>	7.0
Attic Space for one and two family dwellings <sup>(1)</sup>	8.8
Roof Joist Assemblies (Cathedral Ceilings/Flat Roofs)	4.9
Frame Walls other than one and two family dwellings (including frame crawl space walls)	3.5
Frame Walls for one and two family dwellings (including frame crawl space walls) – Effective rating	3.85
Concrete or Masonry Walls (other than foundation walls)	2.1
Suspended Floors (framed)	4.9
Suspended Floors (concrete slab)	2.1
Foundation Walls other than one and two family dwellings	2.1
Foundation Walls for one and two family dwellings - Effective rating	3.85
Concrete Slabs on Ground at, above, or below grade (insulation under all slab area and around edge of slab)	2.1
Radiant Heating Suspended Floor Assembly Over Heated Area (insulation between heated floor and heated area below) <sup>(4)</sup>	2.1

**Effective thermal resistance ( $RSI_{eff}/R_{eff}$ )** for building assemblies includes the effect of thermal bridging due to repetitive structural members such as wood framing and is calculated using the formula below as per 2012 BCBC, Appendix Note A-9.36.2.4.(1).

$$RSI_{eff} (R_{eff}) = \frac{100\%}{\frac{\% \text{ Area of Framing}}{RSI_F(R_F)} + \frac{\% \text{ Area of Cavity}}{RSI_C(R_C)}} + RSI(R) \text{ Continuous Material Layers}$$

**Insulspan SIP System Wall Assemblies**

Table 2 provides  $RSI_{eff}/R_{eff}$  calculations for wall assemblies using 8 ¼" or 10 ¼" Insulspan SIPs that exceed requirements of City of Vancouver Building By-Law No. 10908.

**Table 2 –  $RSI_{eff}/R_{eff}$  Calculation for Insulspan SIP System Wall Assemblies**

Insulspan SIP Wall Assembly	8 ¼" Insulspan SIP			10 ¼" Insulspan SIP		
	$RSI_F$	$RSI_C$	Continuous Materials	$RSI_F$	$RSI_C$	Continuous Materials
Outside Air Film	----	----	0.03	----	----	0.03
Cladding	----	----	0.11	----	----	0.11
7/16" Oriented Strand Board	----	----	0.11	----	----	0.11
PlastiSpan® Type 1 Insulation	----	4.87	----	----	6.19	----
Wood Stud @ 1220 mm (48") o.c.	1.57	----	----	2.00	----	----
7/16" Oriented Strand Board	----	----	0.11	----	----	0.11
Gypsum Wall Board, 13 mm (1/2")	----	----	0.08	----	----	0.08
Inside Air Film	----	----	0.12	----	----	0.12
<b>RSI Sub-totals</b>	<b>1.57</b>	<b>4.87</b>	<b>0.56</b>	<b>2.00</b>	<b>6.19</b>	<b>0.56</b>
<b>% Area of Each Component</b>	<b>14%</b>	<b>86%</b>	<b>100%</b>	<b>14%</b>	<b>86%</b>	<b>100%</b>
Effective Thermal Resistance	$RSI_{eff}$	RSI-4.32			RSI-5.34	
	$R_{eff}$	R-24.5			R-30.3	

**Insulspan SIP System Roof Assemblies:**

Table 3 provides  $RSI_{eff}/R_{eff}$  calculations for roof assemblies using 10 ¼" and 12 ¼" Insulspan SIPs that exceed requirements of City of Vancouver Building By-Law No. 10908.

**Table 3 –  $RSI_{eff}/R_{eff}$  Calculation for Insulspan SIP System Roof Assemblies**

Insulspan SIP Roof Assembly	10 ¼" Insulspan SIP			12 ¼" Insulspan SIP		
	$RSI_F$	$RSI_C$	Continuous Materials	$RSI_F$	$RSI_C$	Continuous Materials
Outside Air Film	----	----	0.03	----	----	0.03
Asphalt Shingles	----	----	0.08	----	----	0.08
Roof Sheathing Membrane	----	----	0.03	----	----	0.03
7/16" Oriented Strand Board	----	----	0.11	----	----	0.11
PlastiSpan Type 1 Insulation	----	6.19	----	----	7.51	----
Wood Stud @ 1220 mm (48") o.c.	2.00	----	----	2.43	----	----
7/16" Oriented Strand Board	----	----	0.11	----	----	0.11
Gypsum Wall Board, 13 mm (1/2")	----	----	0.08	----	----	0.08
Inside Air Film	----	----	0.12	----	----	0.12
<b>RSI Sub-totals</b>	<b>2.00</b>	<b>6.19</b>	<b>0.56</b>	<b>2.43</b>	<b>7.51</b>	<b>0.56</b>
<b>% Area of Each Component</b>	<b>9%</b>	<b>91%</b>	<b>100%</b>	<b>9%</b>	<b>91%</b>	<b>100%</b>
Effective Thermal Resistance	$RSI_{eff}$	RSI-5.76			RSI-6.88	
	$R_{eff}$	R-32.7			R-39.1	