Plasti-Fab EPS PRODUCT SOLUTIONS
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Product Information Bulletin

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REPLACES:	NEW

PlastiSpan HD Insulation for Slab-on-Grade Applications

PlastiSpan®* HD** insulation is a rigid, closed-cell insulation that meets requirements for expanded polystyrene (EPS) insulation manufactured to CAN/ULC-S701.1, Type 2. Installing ***PlastiSpan HD insulation above or below a concrete slab-on-grade will reduce heat loss providing energy savings and ensure a more uniform more floor surface temperature is maintained. The table below provides material properties for ***PlastiSpan HD*** insulation.

Material Properties[1]	Units	Values
Thermal Resistance *Minimum RSI per 25 mm (R-value per 1 inch)* ASTM C518	$m^2 \cdot {}^oC/W$ $(ft^2 \cdot h \cdot {}^oF/BTU)$	0.70 (4.04)
Compressive Resistance *Minimum @ 10% Strain* ASTM D1621	kPa (psi)	110 (16)
Flexural Strength *Minimum* ASTM C203	kPa (psi)	240 (35)
Water Vapour Permeance[2] *Maximum* ASTM E96	$ng/(Pa \cdot s \cdot m^2)$ (Perms)	200 (3.5)
Water Absorption[3] *Maximum* ASTM D2842	% By Volume	4.0
Dimensional Stability *Maximum* ASTM D2126	% Linear Change	1.5
Limiting Oxygen Index *Minimum* ASTM D2863	% Volume	24
Surface Burning Characteristics *Rating or Classification* CAN/ULC S102.2	Flame Spread Smoke Developed	220 Over 500

Sustainability

As part of its commitment to ongoing sustainability initiatives, Plasti-Fab maintains ***GREENGUARD Gold Certification*** for ***PlastiSpan HD*** insulation with UL Environment, an independent global safety science organization. The ***GREENGUARD Gold Certification*** mark on ***PlastiSpan HD*** insulation gives assurance that insulation designed for use in indoor spaces meets strict chemical emissions limits, which contribute to the creation of healthier interiors.

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1. ***PlastiSpan HD*** insulation properties are third party certified to CAN/ULC-S701.1, ***Standard for Thermal Insulation, Polystyrene, Boards***, under a third party certification program (see Intertek Code Compliance Research Report CCRR-1072 for additional information) and is listed by the Canadian Construction Materials Centre (CCMC) under evaluation listing number 12425-L (Type 2).
2. WVP values quoted are maximum values for 25-mm (1-inch) thick samples with natural skins intact. Lower values will result for thicker materials.
3. The water absorption laboratory test method involves complete submersion under a head of water for 96 hours. The water absorption values above are applicable to specific end-use design requirements only to the extent that the end-use conditions are similar to test method requirements.

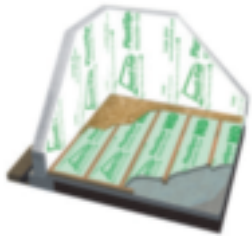
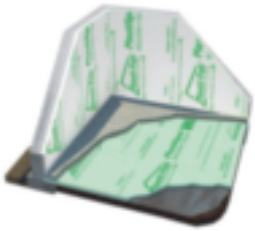
NBC 2010 and 2015 – Energy Efficiency Requirements

National Building Code of Canada (NBC) 2010 and 2015, Section 9.36 provides energy efficiency requirements for buildings 3 storeys or less in building height, having a building area not exceeding 600 m^2 and used for major occupancies classified as residential occupancies. Energy efficiency requirements, Subsection 9.36.2. are based upon minimum ***effective thermal resistance (RSI$_{eff}$/R$_{eff}$)*** of building assemblies which includes the effect of thermal bridging due to repetitive structural members such as wood framing members in wall or roof assemblies calculated using the formula below.

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

***PlastiSpan HD* Insulation Installed Above or Below a Basement Floor Slab**

PlastiSpan HD insulation installed above the basement slab as part of a retrofit is a cost-effective method of improving existing energy efficiency. When installed as a continuous layer below the basement slab as part of new construction it provides a uniform insulation layer. The table below provides examples of slab-on-grade construction using ***PlastiSpan HD*** insulation.

Typical Detail	System Description and Components			
 Figure 1 - Above Slab Application	***PlastiSpan HD* insulation installed between wood strapping**	**RSI$_{eff}$ Calculation**		
		RSI$_F$	**RSI$_C$**	**Continuous Materials**
	Horizontal Air Film (above floor)	----	----	0.16
	15.8 mm (5/8") OSB sub-floor	----	----	0.15
	64 mm (2.5") ***PlastiSpan HD*** Insulation	----	1.78	----
	Wood strapping @ 610 mm (24")	0.54		----
	Polyethylene moisture barrier	----	----	----
	102 mm (4") Concrete Slab	----	----	0.04
	Sub-Totals	**0.54**	**1.78**	**0.35**
	% Area	9%	91%	100%
	RSI$_{eff}$ (R$_{eff}$)	**RSI-1.83 (R-10.4)**		
 Figure 2 - Below Slab Application	**PlastiSpan HD insulation installed as a continuous insulation layer below concrete slab**	**RSI$_{eff}$ Calculation**		
	Horizontal Air Film (above floor)	0.16		
	102 mm (4") Concrete Slab	0.04		
	64 mm (2.5") ***PlastiSpan HD*** Insulation	1.78		
	Polyethylene moisture barrier	----		
	RSI$_{eff}$ (R$_{eff}$)	**RSI-1.98 (R-11.2)**		