



# FOAMULAR® 400/600/1000 High Density Extruded Polystyrene (XPS) Rigid Foam Board Insulation



## PRODUCT FEATURES

### Description

Extruded polystyrene (XPS) rigid insulation board for high compressive load applications.

### Basic Uses/Related Uses

High strength Extruded Polystyrene (XPS) Insulation products designed for use in building envelope and civil engineering applications requiring additional load-bearing capability such as under slab, concrete floors, flat roofs, foundations, roadways and rail beds, plaza and parking decks and cold storage installations.

### Selection Criteria

- High compressive load applications
- 40, 60, 100 psi compressive strengths
- Thermal resistance of R5 per inch<sup>1</sup>
- Moisture resistant (hydrophobic), long term durability

### Sustainability Criteria

- Recycled content of 20%, pre-consumer (SCS Global Services)
- UL GREENGUARD Gold Certification
- Product specific Type 4 UL Environmental Product Declaration and Transparency Brief
- Silver Material Health Certification (Cradle to Cradle Products Innovation Institute)
- Contributes to credits in green building programs such as LEED® and Green Globes. For further information see documents: LEED® v4 for Building Design and Construction and Owens Corning Impact Study - Leadership in Energy and Environmental Design (LEED® v4).



## Applicable Standards

<b>CAN/ULC-S701</b>	Standard for Thermal Insulation, Polystyrene Boards
<b>CAN/ULC-S102.2</b>	Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Materials and Assemblies
<b>ASTM C177</b>	Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate
<b>ASTM C203</b>	Standard Test Method for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
<b>ASTM C518</b>	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
<b>ASTM E228</b>	Standard Test Method for Linear Thermal Expansion of Solid Materials with a Push-rod Dilatometer
<b>ASTM D1621</b>	Standard Test Method for Compressive Properties of Rigid Cellular Plastics
<b>ASTM D2126</b>	Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
<b>ASTM D2842</b>	Standard Test Method for Water Absorption of Rigid Cellular Plastics
<b>ASTM E96</b>	Test Methods for Water Vapour Transmission of Materials

## Performance Criteria

<b>Compliance:</b>	Type 4	CAN/ULC-S701
<b>Physical Properties:</b>	Compressive Strength <sup>1</sup> <b>F-400</b> : 40 psi (275 kPa)	ASTM D1621
	Compressive Strength <sup>1</sup> <b>F-600</b> : 60 psi (415 kPa)	ASTM D1621
	Compressive Strength <sup>1</sup> <b>F-1000</b> : 100 psi (690 kPa)	ASTM D1621
	Compressive Modulus <b>F-400</b> : 2000 psi (13789 kPa)	ASTM D1621
	Compressive Modulus <b>F-600</b> : 2700 psi (18616 kPa)	ASTM D1621
	Compressive Modulus <b>F-1000</b> : 3700 psi (25510 kPa)	ASTM D1621
	Flexural Strength <b>F-400</b> : 90 psi (621 kPa)	ASTM C203
	Flexural Strength <b>F-600</b> : 120 psi (828 kPa)	ASTM C203
	Flexural Strength <b>F-1000</b> : 150 psi (1034 kPa)	ASTM C203
	Dimensional Stability, Maximum, % linear change: 1.5	ASTM D2126
	Linear Coefficient of Thermal Expansion: 3.5x10 <sup>-5</sup> in./in./°F (6.3x10 <sup>-5</sup> mm/mm/°C)	ASTM E228
<b>Thermal:</b>	R5 ft <sup>2</sup> hr <sup>2</sup> F/BTU per inch (RSI 0.88 m <sup>2</sup> C/W per 25 mm)	ASTM C518 or C177
<b>Moisture:</b>	Water Absorption, (max. % by volume) <b>F-400</b> : 0.60	ASTM D2842
	Water Absorption, (max. % by volume) <b>F-600</b> : 0.55	ASTM D2842
	Water Absorption, (max. % by volume) <b>F-1000</b> : 0.50	ASTM D2842
	Water Vapour Permeance: 0.87 Perm (50 ng/Pa.s.m <sup>2</sup> )	ASTM E96
	Water Capillarity: None	-
	Water Affinity: Hydrophobic	-
	Limiting Oxygen Index, min.: 24	ASTM D2863
<b>Fire:</b>	Combustible Max. Service Temp. 165 °F (74 °C)	CAN/ULC-S114

<sup>1</sup>5% deformation or yield, whichever occurs first

<sup>1</sup>The LTRR performance for Owens Corning FOAMULAR® insulation products per CAN/ULC S701-17 are as follows:  
Type 3 products: Minimum LTRR of RSI 1.62 at 50 mm thickness & Type 4 products: minimum LTRR of RSI 1.66 at 50 mm thickness. Please consult local Owens Corning Technical Representative.





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## Delivery and Storage

Deliver products in their original packages, and store in enclosed shelter. Packaging is not UV resistant. Shelter unused packages from the elements.

## Limitations

- Exposure to exterior conditions during normal construction cycles is permitted. During that time some fading of color may begin due to UV exposure, and, if exposed for extended periods of time, some degradation or “dusting” of the polystyrene surface may begin. It is best if the product is covered within 60 days to minimize degradation. Once covered, the deterioration stops, and damage is limited to the thin top surface layers of cells. Cells below are generally unharmed.
- This product is combustible. A protective barrier or thermal barrier is required to separate this product from interior living or conditioned spaces as specified in the appropriate building code.
- In soils that may contain hydrocarbons and other petroleum derivatives, and all other products that may cause corrosion and deterioration of the polystyrene boards. Consult soils investigation reports and an Owens Corning Area Sales Manager.
- FOAMULAR® XPS insulation limited lifetime warranty maintains 90% of its thermal resistance for the lifetime of the building and covers all CAN/ULC-S701.
- Prior to use of adhesives, sealants or other similar products with polystyrene boards, verify their compatibility with adhesive manufacturers.

## Safety

This product is combustible and may constitute a fire risk if not used or installed properly. Although it contains a fire-suppressing agent, the product will ignite if exposed to a sufficiently intense flame. Do not expose to open flames or any other ignition source during transport, handling, storage or use. For additional information refer to Safe Use Instruction Sheet (SUIS) found in the SDS Database via <http://sds.owenscorning.com>.

## Sizes

Thickness	Widths	Lengths	Edges
<b>FOAMULAR® 400 XPS</b>			
25 mm, 38 mm, 51 mm, 76 mm, 102 mm (1", 1.5", 2", 3", 4")	610 mm (24")	2438 mm (96")	Square
<b>FOAMULAR® 600 XPS</b>			
25 mm, 38 mm, 51 mm, 76 mm (1", 1.5", 2", 3")	610 mm (24")	2438 mm (96")	Square
<b>FOAMULAR® 1000 XPS</b>			
38 mm, 51 mm, 76 mm (1.5", 2", 3")	610 mm (24")	2438 mm (96")	Square

FOAMULAR® 400, 600, 1000 High Density is shipped in units containing four individually shrink-wrapped packages.

## PRODUCT PLACEMENT

### Installation

Ensure surfaces to be covered with insulation boards have been inspected, notably; substrate solidity and level - fill and others; and subsurface mechanical, electrical and telecommunication service lines penetrating or in proximity to insulation boards.

Carefully adjust insulation boards to obtain tight joints between each board; where two layers are required, overlap all joints. Backfill insulation boards or use wood or steel pegs to avoid their displacement due to wind or flotation on water puddles generated by the rain or during subsurface work or near watercourses. Where required, adhere insulation boards together temporarily using an adhesive.

### Technical Services Available

For Canadian Technical inquiries please contact local representative. See Technical territory map via [www.specowenscorning.ca/contacttech](http://www.specowenscorning.ca/contacttech).

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