



## FOAMULAR® 250

### Extruded Polystyrene (XPS) Rigid Foam Insulation

#### Energy-Saving<sup>1</sup>, Moisture Resistant XPS Insulation

ASTM C578 Type IV, 25 psi minimum.

#### Description

Owens Corning® FOAMULAR® 250 Extruded Polystyrene (XPS) Rigid Foam Insulation is a closed cell, moisture-resistant rigid foam board well suited for use as continuous insulation in the CavityComplete® Wall System for Wood Stud with Masonry Veneer. FOAMULAR® 250 Extruded Polystyrene (XPS) Rigid Foam Insulation is classified as a Type IV product when tested in accordance with ASTM C578 and provides a long-term thermal performance of R-5 per inch.

Like all FOAMULAR® XPS Insulation products, FOAMULAR® 250 Extruded Polystyrene (XPS) Rigid Foam Insulation is made with Owens Corning's patented Hydrovac® process technology under strict quality control measures, which makes it highly resistant to moisture and permits the product to retain its high R-value year after year even after exposure to moisture and freeze/thaw cycling.

#### Key Features

- Excellent long-term stable insulating performance at R-5 per inch<sup>3</sup>
- Exceptional moisture resistance, long-term durability
- In addition to the CavityComplete® Wall system Limited Warranty, FOAMULAR® also has a limited lifetime warranty<sup>4</sup> — maintains 90% of R-value and covers all ASTM C578 properties
- The only XPS foam to have achieved GREENGUARD Gold
- The first XPS foam with certified recycled content — certified by SCS Global Services to contain a minimum 20% recycled content
- Will not corrode, rot or support mold growth
- Zero ozone depletion potential with 70% less global warming potential than our previous formula
- Lightweight, durable rigid foam panels are easy to handle and install
- Easy to saw, cut or score

#### Product Applications

High-performance FOAMULAR® 250 Extruded Polystyrene (XPS) Rigid Foam Insulation:

- Retards the transmission of water vapor and moisture in masonry walls
- Provides continuous insulation over wood stud framing
- Insulates and retains its properties in even when exposed to water in masonry cavity walls
- Used in conjunction with the PROSOCO R-Guard® Cat 5° air and water barrier, FOAMULAR® XPS provides additional weather resistive protection to enhance the building's resistance to air and moisture penetration

#### Technical Information

This product is combustible. A protective barrier or thermal barrier is required as specified in the appropriate building code. All construction should be evaluated for the necessity to provide vapor retarders. See the CavityComplete® Technical Bulletin regarding regional design recommendations for additional information.

FOAMULAR® 250 Extruded Polystyrene (XPS) Rigid Foam Insulation is a non-structural material and must be installed on framing which is independently braced and structurally adequate to meet required construction and service loading conditions.

FOAMULAR® XPS Insulation can be exposed to the exterior during normal construction cycles. 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 and still useful insulation.

FOAMULAR® Extruded Polystyrene (XPS) Insulation has a maximum service temperature of 165°F. Taking simple precautions during construction can minimize the potential for heat related damage. Do not cover FOAMULAR® XPS Insulation either stored (factory wrapped or unwrapped), or partially installed, with dark colored (non-white), or clear (non-opaque) coverings and leave it exposed to the sun. Examples of such coverings include but are not limited to filter

fabrics, membranes, temporary tarps, clear polyethylene, etc. If improperly covered, and exposed to the right combination of sun, time and temperature, FOAMULAR® XPS Insulation deformation damage may occur rapidly. See Owens Corning publication number 10015704, "Heat Build Up Due to Solar Exposure" for more information.

## Typical Physical Properties<sup>1</sup>

### FOAMULAR® 250 Extruded Polystyrene (XPS) Rigid Foam Insulation

Property	Test Method <sup>2</sup>	Value
Thermal Resistance <sup>3</sup> , R-Value (180 day) minimum, hr•ft <sup>2</sup> •°F/Btu (RSI, °C•m <sup>2</sup> /W) @ 75°F (24°C) mean temperature	ASTM C518	
3/4" Thickness		4.0 (0.70)
1" Thickness		5.0 (0.88)
1-1/2" Thickness		7.5 (1.32)
2" Thickness		10 (1.76)
2-1/2" Thickness		12.5 (2.20)
3" Thickness		15 (2.64)
4" Thickness		20 (3.52)
@ 40°F (4.4°C) mean temperature		
3/4" Thickness		4.3 (0.76)
1" Thickness		5.4 (0.95)
1-1/2" Thickness		8.1 (1.43)
2" Thickness		10.8 (1.90)
2-1/2" Thickness		13.5 (2.38)
3" Thickness		16.2 (2.85)
4" Thickness		21.6 (3.80)
Long Term Thermal Resistance, LTTR-Value <sup>3</sup> , minimum hr•ft <sup>2</sup> •°F/Btu (RSI, °C•m <sup>2</sup> /W) @ 75°F (24°C) mean temperature	CAN/ULC S770-03	
3/4" Thickness		N/A
1" Thickness		5.0 (0.88)
1-1/2" Thickness		7.8 (1.37)
2" Thickness		10.6 (1.87)
2-1/2" Thickness		13.4 (2.36)
3" Thickness		16.2 (2.85)
4" Thickness		22.0 (3.87)
Compressive Strength <sup>4</sup> , minimum psi (kPa)	ASTM D1621	25 (172)
Flexural Strength <sup>5</sup> , minimum psi (kPa)	ASTM C203	75 (517)
Water Absorption <sup>6</sup> , maximum % by volume	ASTM C272	0.10
Water Vapor Permeance <sup>7</sup> , maximum perm (ng/Pa•s•m <sup>2</sup> )	ASTM E96	1.5 (86)
Dimensional Stability, maximum % linear change	ASTM D2126	2.0
Flame Spread <sup>8,9</sup>	ASTM E84	5
Smoke Developed <sup>8,9,10</sup>	ASTM E84	45-175
Oxygen Index <sup>8</sup> , minimum % by volume	ASTM D2863	24
Service Temperature, maximum °F (°C)		165 (74)
Linear Coefficient of Thermal Expansion, in/in/°F (m/m°C)	ASTM E228	3.5 x 10 <sup>-6</sup> (6.3 x 10 <sup>-6</sup> )

- Properties shown are representative values for 1" thick material, unless otherwise specified.
- Modified as required to meet ASTM C578
- R means the resistance to heat flow; the higher the value, the greater the insulation power. This insulation must be installed properly to get the marked R-value. Follow the manufacturer's instructions carefully. If a manufacturer's fact sheet is not provided with the material shipment, request this and review it carefully. R-values vary depending on many factors including the mean temperature at which the test is conducted, and the age of the sample at the time of testing. Because rigid foam plastic insulation products are not all aged in accordance with the same standards, it is useful to publish comparison R-value data. The R-value for FOAMULAR® XPS Insulation is provided from testing at two mean temperatures, 40°F and 75°F, and from two aging (conditioning) techniques, 180 day realtime aged (as mandated by ASTM C578) and a method of accelerated aging sometimes called "Long Term Thermal Resistance" (LTTR) per CAN/ULC S770-03. The R-value at 180 day realtime age and 75°F mean temperature is commonly used to compare products and is the value printed on the product.
- Values at yield or 10% deflection, whichever occurs first.
- Value at yield or 5%, whichever occurs first.
- Data ranges from 0.00 to value shown due to the level of precision of the test method.
- Water vapor permeance decreases as thickness increases.
- These laboratory tests are not intended to describe the hazards presented by this material under actual fire conditions.
- Data from Underwriters Laboratories Inc.\* classified. See Classification Certificate U-197.
- 10 ASTM E84 is thickness-dependent, therefore a range of values is given.

## Product and Packaging Data

### FOAMULAR® 250 Extruded Polystyrene (XPS) Rigid Foam Insulation

Material			Packaging					
Extruded polystyrene closed-cell foam, ASTM C 578 Type IV, 25 psi minimum			Shipped in poly-wrapped units with individually wrapped or banded bundles					
Thickness (in)	Product Dimensions Thickness (in) x Width (in) x Length (in)	Pallet (Unit) Dimensions (typical) Width (ft) x Length (ft) x Height (ft)	Square feet per Pallet	Board feet per Pallet	Bundles per Pallet	Pieces per Bundle	Pieces per Pallet	Edges
3/4	3/4 x 24 x 96	4 x 8 x 8	4,096	3,072	8	32	256	Square Edge, Scored Square Edge, Tongue and Groove
	3/4 x 24 x 96 (Half unit)	4 x 8 x 4	2,048	1,536	4	32	128	
	3/4 x 48 x 96	4 x 8 x 8	4,096	3,072	8	16	128	
	3/4 x 48 x 96 (Half unit)	4 x 8 x 4	2,048	1,536	4	16	64	
	3/4 x 48 x 108	4 x 9 x 8	4,608	3,456	8	16	128	
	3/4 x 48 x 120	4 x 10 x 8	5,120	3,840	8	16	128	
1	1 x 24 x 96	4 x 8 x 8	3,072	3,072	8	24	192	
	1 x 24 x 96 (Half unit)	4 x 8 x 4	1,536	1,536	4	24	96	
	1 x 48 x 96	4 x 8 x 8	3,072	3,072	8	12	96	
	1 x 48 x 96 (Half unit)	4 x 8 x 4	1,536	1,536	4	12	48	
	1 x 48 x 108	4 x 9 x 8	3,456	3,456	8	12	96	
1-1/2	1.5 x 24 x 96	4 x 8 x 8	2,048	3,072	8	16	128	
	1.5 x 48 x 96	4 x 8 x 8	2,048	3,072	8	8	64	
2	2 x 24 x 96	4 x 8 x 8	1,536	3,072	8	12	96	
	2 x 24 x 96 (Half unit)	4 x 8 x 4	768	1,536	4	12	48	
	2 x 24 x 108	4 x 9 x 8	1,728	3,456	8	12	96	
	2 x 48 x 96	4 x 8 x 8	1,536	3,072	8	6	48	
2-1/2	2.5 x 24 x 96	4 x 8 x 8	1,152	2,880	8	9	72	
	2.5 x 48 x 96	4 x 8 x 8	1,152	2,880	4	9	36	
3	3 x 24 x 96	4 x 8 x 8	1,024	3,072	8	8	64	
	3 x 48 x 96	4 x 8 x 8	1,024	3,072	8	4	32	
4	4 x 24 x 96	4 x 8 x 8	768	3,072	8	6	48	
	4 x 48 x 96	4 x 8 x 8	768	3,072	8	3	24	

1 Available lengths and edge configurations vary by thickness. See [www.foamular.com](http://www.foamular.com) for current offerings. Other sizes may be available upon request. Consult your local Owens Corning representative for availability.

### Standards, Codes Compliance

- Meets ASTM C578 Type IV
- UL Classified. A copy of UL Classification Certificate U-197 is available at [www.owenscorning.com](http://www.owenscorning.com)
- See UL Evaluation Report ER8811-01 at <http://database.ul.com/certs/ER8811-01.pdf>
- Meets California Quality Standards; HUD UM #71A
- Compliance verification by RADCO (AA-650)

## Certifications and Sustainable Features of FOAMULAR® XPS Insulation

- FOAMULAR® XPS Insulation is reusable
- FOAMULAR® XPS Insulation is made with a zero ozone depletion formula
- Certified by SCS Global Services to contain a minimum of 20% pre-consumer recycled polystyrene
- Certified to meet indoor air quality standards under the stringent GREENGUARD Indoor Air Quality Certification Program, and the GREENGUARD Gold Certification
- Qualified as an ENERGY STAR® product, under the U.S. Environmental Protection Agency and the U.S. Department of Energy
- Approved under the Home Innovation Research Labs NGBS Green Certification Program
- Utilizing FOAMULAR® XPS Insulation can help builders achieve green building certifications including the Environmental Protection Agency's ENERGY STAR®, the National Association of Home Builders' National Green Building certification, and the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) certification

## Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation and composite solutions, delivering a broad range of high-quality products and services. Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at <http://sustainability.owenscorning.com>.

## Warranty

FOAMULAR® XPS Insulation limited lifetime warranty maintains 90% of its R-value for the lifetime of the building and covers all ASTM C578 properties. See actual warranty for complete details, limitations and requirements at [www.owenscorning.com](http://www.owenscorning.com).

All products described here may not be available in all geographic markets. Consult your local sales office representative for more information.

The CavityComplete® Wood Stud Wall System excludes the masonry veneer, wood studs, interior gypsum board and exterior sheathing. A detailed list of the components is available at [www.CavityComplete.com](http://www.CavityComplete.com).

For more information on the Owens Corning family of building products, contact your Owens Corning dealer, call 1-800-GET-PINK®, or access [www.owenscorning.com](http://www.owenscorning.com).

- 1 Savings vary. Find out why in the seller's fact sheet on R-values. Higher R-values mean greater insulating power.
- 2 R means the resistance to heat flow; the higher the R-value, the greater the insulating power.
- 3 See actual warranty for complete details, limitations and requirements.

### Disclaimer of Liability

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*SCS Global Services provides independent verification of recycled content in building materials and verifies recycled content claims made by manufacturers. For more information, visit [www.SCSglobalservices.com](http://www.SCSglobalservices.com).*

*GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit [ul.com/gg](http://ul.com/gg).*

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*This Home Innovation Research Labs Green Approved mark is your assurance that a product is eligible for points toward National Green Building Certification. Visit [www.GreenApprovedProducts.com](http://www.GreenApprovedProducts.com) for details.*

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Home Innovation NGBS Green Certified for Water Resistant Barrier, Low Emitting