

### Product Data Sheet



#### Energy-Saving, Moisture Resistant XPS Insulation

ASTM C 578 Type IV, 25 psi minimum

#### Description

Owens Corning™ FOAMULAR® 250 extruded polystyrene (XPS) insulation is a closed cell, moisture-resistant rigid foam board well suited to meet the needs for a wide variety of building applications. FOAMULAR® 250 XPS insulation is ideal for many residential and commercial construction applications such as wall furring, perimeter/foundation, cavity wall, pre-cast concrete, under slab, crawl spaces, sheathing and other applications.<sup>3</sup> FOAMULAR® 250 XPS insulation is classified as a Type IV product when tested in accordance with ASTM C 578 and provides a long-term thermal performance of R-5 per inch.

Like all FOAMULAR® XPS insulation products, FOAMULAR® 250 XPS 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<sup>1</sup> per inch
- Exceptional moisture resistance, long-term durability
- Limited lifetime warranty<sup>2</sup>—maintains 90% of R-value and covers all ASTM C 578 properties
- The only XPS foam to be GREENGUARD Children & Schools Certified<sup>SM</sup>
- The only XPS foam with certified recycled content—certified by Scientific Certification Systems (SCS) 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
- Reusable
- Lightweight, durable rigid foam panels are easy to handle and install
- Easy to saw, cut or score
- Versatile applications: sheathing, foundation walls, masonry cavity walls<sup>3</sup>
- Not for use in roofing. For roofing applications, use FOAMULAR® THERMAPINK® Extruded Polystyrene Insulation.

#### Product type

- Minimum compressive strength of 25 psi
- Wide selection of sizes and thicknesses
- Available in straight, tongue and groove, or scored square edge
- Compliant with building codes and standards

#### Product Applications

High-performance FOAMULAR® 250 XPS insulation:

- Retards the transmission of water vapor and moisture in masonry walls
- Provides continuous insulation over steel stud framing, in insulated concrete sandwich panel walls, in masonry unit cavity walls, or when used with non-penetrating, surface mounted furring systems over masonry or concrete walls
- Insulates and retains its properties in below grade perimeter and foundation applications, or directly beneath the concrete slab to complement the insulating sheathing envelope around the building framing
- FOAMULAR® 250 XPS insulation is ideal for below grade applications. Extruded polystyrene (XPS) insulation is resistant to degradation from the components of common soils and will retain its insulating performance characteristics even after prolonged exposure to moisture



# FOAMULAR® 250

## Extruded Polystyrene (XPS) Rigid Foam Insulation

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- Provides a weather resistant barrier (when joints are sealed) 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. For additional information, consult MSDS or contact Owens Corning World Headquarters at 1-800-GET-PINK®.

All construction should be evaluated for the necessity to provide vapor retarders. See current ASHRAE Handbook of Fundamentals.

FOAMULAR® 250 XPS 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® 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.

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

FOAMULAR® 250 Extruded Polystyrene Insulation

Property	Test Method <sup>2</sup>	Value
<b>Thermal Resistance<sup>3</sup>, R-Value (180 day) minimum,</b> hr•ft <sup>2</sup> •°F/Btu (RSI, °C•m <sup>2</sup> /W) @ 75°F (24°C) mean temperature		
	ASTM C 518	
¾" Thickness		4.0 (0.70)
1" Thickness		5.0 (0.88)
1½" Thickness		7.5 (1.32)
2" Thickness		10 (1.76)
2½" Thickness		12.5 (2.20)
3" Thickness		15 (2.64)
4" Thickness		20 (3.52)
@ 40°F (4.4°C) mean temperature		
¾" Thickness		4.3 (0.76)
1" Thickness		5.4 (0.95)
1½" Thickness		8.1 (1.43)
2" Thickness		10.8 (1.90)
2½" Thickness		13.5 (2.38)
3" Thickness		16.2 (2.85)
4" Thickness		21.6 (3.80)
<b>Long Term Thermal Resistance, LTTR-Value<sup>3</sup>, minimum</b> hr•ft <sup>2</sup> •°F/Btu (RSI, °C•m <sup>2</sup> /W) @ 75°F (24°C) mean temperature		
	CAN/ULC S770-03	
¾" Thickness		N/A
1" Thickness		5.0 (0.88)
1½" Thickness		7.8 (1.37)
2" Thickness		10.6 (1.87)
2½" Thickness		13.4 (2.36)
3" Thickness		16.2 (2.85)
4" Thickness		22.0 (3.87)
<b>Compressive Strength<sup>4</sup>, minimum psi (kPa)</b>	ASTM D 1621	25 (172)
<b>Flexural Strength<sup>5</sup>, minimum psi (kPa)</b>	ASTM C 203	75 (517)
<b>Water Absorption<sup>6</sup>, maximum % by volume</b>	ASTM C 272	0.10
<b>Water Vapor Permeance<sup>7</sup>, maximum perm (ng/Pa•s•m<sup>2</sup>)</b>	ASTM E 96	1.5 (86)
<b>Dimensional Stability, maximum % linear change</b>	ASTM D 2126	2.0
<b>Flame Spread<sup>8,9</sup></b>	ASTM E 84	5
<b>Smoke Developed<sup>8,10</sup></b>	ASTM E 84	45-175
<b>Oxygen Index<sup>8</sup>, minimum % by volume</b>	ASTM D 2863	24
<b>Service Temperature, maximum °F (°C)</b>	—	165 (74)
<b>Linear Coefficient of Thermal Expansion, in/in/°F (m/m/°C)</b>	ASTM E 228	3.5 × 10 <sup>-5</sup> (6.3 × 10 <sup>-5</sup> )

- Properties shown are representative values for 1" thick material, unless otherwise specified.
- Modified as required to meet ASTM C 578
- 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 real-time aged (as mandated by ASTM C.578) and a method of accelerated aging sometimes called "Long Term Thermal Resistance" (LTTR) per CAN/ULC S770-03. The R-value at 180 day real-time 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.
- ASTM E 84 is thickness-dependent, therefore a range of values is given.



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#### Product and Packaging Data

FOAMULAR® 250 Extruded Polystyrene 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) Length (ft) x Width (ft) x Height (ft)	Square feet per Pallet	Board feet per Pallet	Bundles per Pallet	Pieces per Bundle	Pieces per Pallet	Edges
¾	¾ x 24 x 96	4 x 8 x 8	4,096	3,072	8	32	256	Square Edge, Scored Square Edge, Tongue & Groove
	¾ x 24 x 96 (Half unit)	4 x 8 x 4	2,048	1,536	4	32	128	
	¾ x 48 x 96	4 x 8 x 8	4,096	3,072	8	16	128	
	¾ x 48 x 96 (Half unit)	4 x 8 x 4	2,048	1,536	4	16	64	
	¾ x 48 x 108	4 x 9 x 8	4,608	3,456	8	16	128	
	¾ 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	
1½	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	
2½	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 C 578 Type IV
- UL Classified. A copy of UL Classification Certificate U-197 is available at [www.foamular.com](http://www.foamular.com)
- See ICC-ES ESR-1061 at [www.icc-es.org](http://www.icc-es.org)
- ASTM E 119 Fire Resistance Rated Wall Assemblies. See [www.foamular.com](http://www.foamular.com) for details.
- 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 Scientific Certification Systems 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<sup>SM</sup>, and the GREENGUARD Children & Schools Certification Program<sup>SM</sup>

- Qualified as an ENERGY STAR® product, under the U.S. Environmental Protection Agency and the U.S. Department of Energy
- Approved under the National Association of Home Builders (NAHB) Research Center Green Seal of Approval
- Utilizing FOAMULAR® XPS insulation can help builders achieve green building certifications including the Environmental Protection



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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

- FOAMULAR® XPS insulation may qualify for The Buy American provision of the American Recovery and Reinvestment Act (ARRA)

### 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 [www.sustainability.owenscorning.com](http://www.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 C 578 properties. See actual warranty for complete details, limitations and requirements at [www.foamular.com](http://www.foamular.com) or [www.owenscorningcommercial.com](http://www.owenscorningcommercial.com).

### Notes

1. R means the resistance to heat flow; the higher the R-value, the greater the insulating power.
2. See actual warranty for complete details, limitations and requirements.
3. Not for use in roofing. For roofing applications, use FOAMULAR® THERMAPINK® Extruded Polystyrene Insulation.

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

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



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This NAHB Research Center 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.

LEED is a registered trademark of the U.S. Green Building Council.



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