



# FOAMULAR® 250

## Extruded Polystyrene (XPS)

### Rigid Foam Insulation



### 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 great 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.

### Features

- Excellent long-term stable insulating performance at R-5' per inch
  - Exceptional moisture resistance, long-term durability
  - Lightweight, durable rigid foam panels are easy to handle and install
  - Easy to saw, cut or score
1. R means the resistance to heat flow; the higher the R-value, the greater the insulating power.

### Applications

- Slows the transmission of water vapor and moisture in masonry walls
- Provides continuous insulation over wood or 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

### Physical Properties<sup>2</sup>

Property	Test Method <sup>3</sup>	Value
Thermal Resistance <sup>4</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>4</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>5</sup> , minimum psi (kPa)	ASTM D1621	25 (172)
Flexural Strength <sup>6</sup> , minimum psi (kPa)	ASTM C203	50 (345)
Water Absorption <sup>7</sup> , maximum % by volume	ASTM C272	0.3
Water Vapor Permeance <sup>8</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>9,10</sup>	ASTM E84	10
Smoke Developed <sup>9,10,11</sup>	ASTM E84	175
Oxygen Index <sup>12</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>-5</sup> (6.3 x 10 <sup>-5</sup> )

2. Properties shown are representative values for 1" thick material, unless otherwise specified.  
 3. Modified as required to meet ASTM C578.  
 4. 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 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 real-time age and 75°F mean temperature is commonly used to compare products and is the value printed on the product.  
 5. Values at yield or 10% deflection, whichever occurs first.  
 6. Value at yield or 5%, whichever occurs first.  
 7. Data ranges from 0.00 to value shown due to the level of precision of the test method.  
 8. Water vapor permeance decreases as thickness increases.  
 9. These laboratory tests are not intended to describe the hazards presented by this material under actual fire conditions.  
 10. Data from Underwriters Laboratories Inc.® classified. See Classification Certificate U-197.  
 11. ASTM E84 is thickness-dependent, therefore a range of values is given.

## Product and Packaging Data

Material			Packaging					
Extruded polystyrene closed-cell foam, ASTM C578 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 & 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	

Available lengths and edge configurations vary by thickness. Other sizes may be available upon request. Consult your local Owens Corning representative for availability.

- FOAMULAR® 250 XPS insulation is great for below grade applications. FOAMULAR® 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
- Provides a weather resistant barrier (when joints are sealed) to enhance the building's resistance to air and moisture penetration
- FOAMULAR® XPS insulation has a maximum service temperature of 165°F. Install only as much FOAMULAR® XPS insulation as can be covered in the same day. For horizontal applications, always turn the print side down so the black print does not show to the sun which may at times act as a solar collector, raising the temperature of the foam under the print to an unacceptable level. Provide a final finish covering or temporary white opaque covering to avoid possible damage when dark (non-white) surfaces are used over FOAMULAR® XPS insulation. 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 "Heat Build Up Due to Solar Exposure" (Pub. No. 10015704) for more information.
- 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.
- All construction should be evaluated for the necessity to provide vapor retarders. See current ASHRAE Handbook of Fundamentals.

### Technical Information

- 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® 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.

## Standards, Codes Compliance

- Meets ASTM C578 Type IV
- UL Classification Certificate U-197<sup>12</sup>
- Code Evaluation Report UL ER8811-01<sup>12</sup>
- ASTM E119 Fire Resistance Rated Wall Assemblies<sup>12</sup>
- Meets California Quality Standards; HUD UM #71a
- Compliance verification by RADCO (AA-650)

<sup>12</sup>. Visit [www.owenscorning.com](http://www.owenscorning.com) for more details.

## Limited 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).

## 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.owenscorning.com](http://www.owenscorning.com).

## Notes

For additional information, refer to the Safe Use Instruction Sheet (SUIS) found in the SDS Database via <http://sds.owenscorning.com>.

Not for use in roofing. For roofing applications, use FOAMULAR® THERMAPINK® XPS insulation.

## Certifications and Sustainable Features

- Certified by SCS Global Services to contain a minimum of 20% recycled content pre-consumer
- 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)
- Environmental Product Declaration (EPD) has been certified by UL Environment
- Qualified as an ENERGY STAR® product, under the U.S. Environmental Protection Agency and the U.S. Department of Energy
- Utilizing FOAMULAR® XPS insulation can help builders achieve green building certifications including the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) certification
- Approved under the Home Innovation Research Labs NGBS Green Certification Program



Home Innovation  
NGBS GREEN CERTIFIED™



AVERAGE 20% RECYCLED CONTENT  
PRE-CONSUMER



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