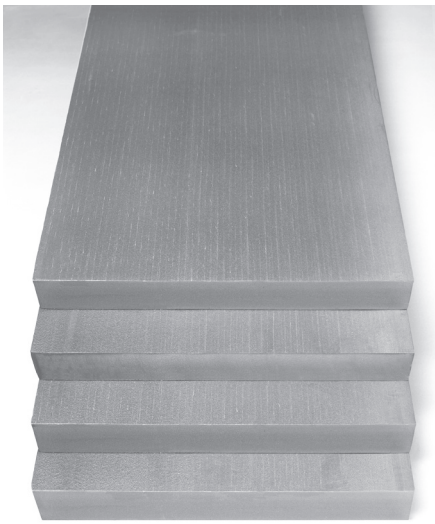
FOAMULAR® High-R CW Plus
Extruded Polystyrene (XPS) Rigid Foam Insulation

Product Data Sheet



Energy-Saving, Moisture Resistant XPS Insulation

Enhanced R-Value Cavity Wall Insulation
ASTM C578 Type IV, 25 psi minimum

Description

FOAMULAR® High-R CW Plus insulation combines outstanding moisture resistance with excellent thermal performance. As a FOAMULAR® extruded polystyrene (XPS) insulation product, High-R CW Plus insulation is a rigid closed cell XPS board that is highly resistant to moisture. The main advantage of High-R CW Plus insulation over other XPS boards is its higher R-value per inch. An R-value of 10 can be achieved with just a 1¾" thick board, R-12 with 2⅛" thick board and R-17 with 3".

Like all FOAMULAR® XPS products, FOAMULAR® High-R CW Plus 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 it's high R-value year after year even after exposure to moisture and freeze/thaw cycling.

Key Features

- Excellent long-term stable insulating performance with an R-value[1] of R-5.6 per inch
- Exceptional moisture resistance, long-term durability
- Limited lifetime warranty[2]—maintains 90% of R-value and covers all ASTM C 578 properties
- The only XPS foam to be GREENGUARD Children & Schools Certified℠
- 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
- An excellent choice for masonry cavity wall or steel stud/brick veneer insulation

Product Type

- Minimum compressive strength of 25 psi
- Compliant with building codes and standards

Product Applications

High-performance FOAMULAR® High-R CW Plus 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, or in masonry unit cavity walls
- High-R CW Plus is intended to provide a higher R-value in a smaller space.
- Provides a weather resistant barrier (when joints are sealed) to enhance the building 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.

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FOAMULAR® 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.

Standards, Codes Compliance

- Meets ASTM C 578 Type IV, Table 1
- UL Classified. A copy of UL Classification Certificate U-197 is available at www.foamular.com
- See ICC-ES Evaluation Report ESR-1061 at www.icc-es.org
- ASTM E 119 Fire Resistance Rated Wall Assemblies. See www.foamular.com for details.
- Meets California Quality Standards and HUD UM #71a
- Compliance verification by RADCO (AA-650)

Typical Physical Properties[1]

FOAMULAR® High R CW Plus Insulation

Property	Test Method[2]	Value
Thermal Resistance[3], R-Value (180 day) minimum, hr•ft²•°F/Btu (RSI, °C•m²/W) @ 75°F (24°C) mean temperature	ASTM C 518	
1¾" Thickness		10 (1.76)
2⅛" Thickness		12 (2.11)
3" Thickness		17 (2.99)
@ 40°F (4.4°C) mean temperature		
1¾" Thickness		10.8 (1.89)
2⅛" Thickness		12.9 (2.27)
3" Thickness		18.3 (3.22)
Long Term Thermal Resistance, LTTR-Value[3,] minimum hr•ft²•°F/Btu (RSI, °C•m²/W) @ 75°F (24°C) mean temperature	CAN/ULC S770-03	
1¾" Thickness		10.3 (1.81)
2⅛" Thickness		12.5 (2.20)
3" Thickness		14.7 (2.59)
Compressive Strength[4], minimum psi (kPa)	ASTM D 1621	25 (173)
Flexural Strength[5], minimum psi (kPa)	ASTM C 203	75 (517)
Water Absorption[6], maximum % by volume	ASTM C 272	0.10
Water Vapor Permeance[7], maximum perm (ng/Pa•s•m²)	ASTM E 96	1.5 (86)
Dimensional Stability, maximum % linear change	ASTM D 2126	2.0
Flame Spread[8, 9]	ASTM E 84	10
Smoke Developed[8, 9, 10]	ASTM E 84	40-175
Oxygen Index[8], minimum % by volume	ASTM D 2863	24
Service Temperature, maximum °F (°C)	—	165 (74)
Linear Coefficient of Thermal Expansion, in/in/°F (m/m/°C)	ASTM E 228	3.5×10^{-5} (6.3×10^{-5})

1. Properties shown are representative values for 1" thick material, unless otherwise specified.
2. Modified as required to meet ASTM C 578, Table 1.
3. 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.
4. Values at yield or 10% deflection, whichever occurs first.
5. Value at yield or 5%, whichever occurs first.
6. Data ranges from 0.00 to value shown due to the level of precision of the test method.
7. Water vapor permeance decreases as thickness increases.
8. These laboratory tests are not intended to describe the hazards presented by this material under actual fire conditions.
9. Data from Underwriters Laboratories Inc.® classified. See Classification Certificate U-197.
10. ASTM E 84 is thickness-dependent, therefore a range of values is given.

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Product and Packaging Data

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Material	Packaging
Extruded polystyrene closed-cell foam, ASTM C 578 Type IV, Table 1; 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
1¾	1.75 x 16 x 96	4 x 8 x 8	1,536	2,688	12	12	144	Square Edge
2⅛	2.125 x 16 x 96	4 x 8 x 8	1,280	2,720	12	10	120	
3	3 x 16 x 96	4 x 8 x 8	1,024	3,072	12	8	96	

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

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℠, and the GREENGUARD Children & Schools Certification Program℠.
- Approved under the National Association of Home Builders (NAHB) Research Center Green Seal of Approval.
- Utilizing FOAMULAR® XPS insulation can help achieve green building certifications including 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.

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 or 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.

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 and 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 for details.

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