FOAMULAR® NGX® 400/600/1000

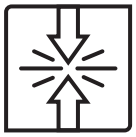
EXTRUDED POLYSTYRENE (XPS) RIGID FOAM INSULATION

Owens Corning® FOAMULAR® NGX® 400/600/1000 is high-strength Extruded Polystyrene (XPS) insulation designed for use in engineered applications requiring additional load-bearing capability, such as under slab, concrete floors, foundations, roadways and rail beds, plaza and parking decks, and cold storage installations. FOAMULAR® NGX® 400/600/1000 can also be used in tapered insulation systems when higher compressive strength is needed.

Features

SUPERIOR MOISTURE RESISTANCE

DURABLE



COMPRESSIVE STRENGTH

80% GLOBAL WARMING REDUCTION[1]

1 Impact measured over 100-year time horizon, as compared to legacy FOAMULAR® insulation. EPD can be found in the "Environmental and Sustainability" section on Page 2.

Standards, Codes Compliance

- FOAMULAR® NGX® 400 XPS Insulation: meets ASTM C578 Type VI, AASHTO M 230, ASTM D6817 XPS29 40 PSI minimum
- FOAMULAR® NGX® 600 XPS Insulation: meets ASTM C578 Type VII, AASHTO M 230, ASTM D6817 XPS36 60 PSI minimum
- FOAMULAR® NGX® 1000 XPS Insulation: meets ASTM C578 Type V, AASHTO M 230, ASTM D6817 XPS48 100 PSI minimum
- UL Classification Certificate U-197, Certification is available at www.owenscorning.com/U197
- Code Evaluation Report UL ER8811-01, Report is available at www.owenscorning.com/UER8811-01
- ASTM E119 Fire Resistance Rated Roof Assemblies
- Meets California Quality Standards; HUD UM #71a

Limited Warranty

FOAMULAR® NGX® XPS insulation limited lifetime warranty maintains 90% of its R-value for the lifetime of the building and covers all ASTM C578 properties. See "FOAMULAR® NGX® Extruded Polystyrene Insulation Lifetime Limited Warranty" for complete details, limitations, and requirements.

Physical Properties[2]

PROPERTY	TEST METHOD[3]	400	600	1000
Thermal Resistance, R-Value (180 days) minimum, hr•ft²•°F/Btu (RSI, °C•m²/W)	ASTM C518			
@ 75°F (24°C) mean temperature		5.0 (0.88)	5.0 (0.88)	5.0 (0.88)
@ 40°F (4.4°C) mean temperature		5.4 (0.95)	5.4 (0.95)	5.4 (0.95)
@ 25°F (-3.9°C) mean temperature		5.6 (0.99)	5.6 (0.99)	5.6 (0.99)
Long-Term Thermal Resistance, LTTR-Value,[4] minimum hr•ft²•°F/Btu (RSI, °C•m²/W) @ 75°F (24°C) mean temperature	CAN/ ULC S770-03	5.0 (0.88)	5.0 (0.88)	5.0 (0.88)
Compressive Strength,[5] minimum psi (kPa)	ASTM D1621	40 (276)	60 (414)	100 (689)
Flexural Strength,[6] minimum psi (kPa)	ASTM C203	90 (621)	120 (828)	150(1035)
Water Absorption,[7] maximum % by volume	ASTM C272	0.3	0.3	0.3
Water Vapor Permeance,[8] maximum perm (ng/Pa•s•m²)	ASTM E96	1.1 (63)	1.1 (63)	1.1 (63)
Dimensional Stability, maximum % linear change	ASTM D2126	2.0	2.0	2.0
Flame Spread[9, 10]	ASTM E84	10	10	10
Smoke Developed[9, 10]	ASTM E84	175	175	175
Oxygen Index,[9] minimum % by volume	ASTM D2863	24	24	24
Service Temperature, maximum °F (°C)	—	165 (74)	165 (74)	165 (74)
Linear Coefficient of Thermal Expansion, in/in/°F (m/m/°C)	ASTM E228	3.5×10^{-5} (6.3×10^{-5})		

2 Properties shown are representative values for 1-inch-thick material, unless otherwise specified. Extruded Polystyrene Insulation may exhibit different physical properties based upon thickness. Certain physical properties are listed by minimum and maximum values per ASTM C578. For details on specific test methods, please contact Owens Corning at 1-800-GET-PINK.
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® NGX® XPS insulation is provided from testing at mean temperatures of: -4°C (25°F), 4.4°C (40°F), and 24°C (75°F) and aging techniques of 180-day real-time aged (as mandated by ASTM C578) and accelerated aging "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 5% deflection.
6 Properties shown are representative values for 2-inch-thick material, unless otherwise specified. 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.

Product and Packaging Data

MATERIAL			PACKAGING					
Extruded polystyrene closed-cell foam panel with continuous skin on face and back surface.			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**
FOAMULAR® NGX® 400 XPS Insulation								Square
1	1 x 24 x 96 (Half Unit)	4 x 8 x 8	1,536	1,536	4	24	96	
2	2 x 24 x 96	4 x 8 x 8	1,536	3,072	8	12	96	
	2 x 48 x 96	4 x 8 x 8	1,536	3,072	8	6	48	
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 48 x 96	4 x 8 x 8	768	3072	8	3	24	
FOAMULAR® NGX® 600 XPS Insulation								Square
1	1 x 24 x 96 (Half Unit)	4 x 8 x 8	1,536	1,536	4	24	96	
1½	1.5 x 24 x 96	4 x 8 x 8	2,048	3,072	8	16	128	
2	2 x 24 x 96	4 x 8 x 8	1,536	3,072	8	12	96	
	2 x 48 x 96	4 x 8 x 8	1,536	3,072	8	6	48	
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	4x48x96 (Half Unit)	4 x 8 x 8	384	1,536	3	4	12	
FOAMULAR® NGX® 1000 XPS Insulation								Square
1½	1.5 x 24 x 96 (Half unit)	4 x 8 x 4	1,024	1,536	4	16	64	
2	2 x 24 x 96 (Half unit)	4 x 8 x 4	768	1,536	4	12	48	
3	3 x 24 x 96 (Half unit)	4 x 8 x 4	512	1,536	4	8	32	

Product availability and lead times vary by region and by product. Consult your local Owens Corning sales representative for availability and lead times.

Technical Information

- FOAMULAR® NGX® XPS insulation are non-structural materials and must be installed on framing that is independently braced and structurally adequate to meet required construction and service loading conditions.
- FOAMULAR® NGX® 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. 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® NGX® XPS insulation have a maximum service temperature of 165°F. Taking simple precautions during construction can minimize the potential for heat-related damage. Install only as much FOAMULAR® NGX® XPS insulation as can be covered in the same day. For horizontal applications, turn print side down when possible 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® NGX® insulation. Do not cover FOAMULAR® NGX® 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. If improperly covered, and exposed to the right combination of sun, time, and temperature, FOAMULAR® NGX® insulation deformation damage may occur rapidly. See "FOAMULAR® Extruded Polystyrene (XPS) Insulation Heat Buildup Due to Solar Exposure Technical Bulletin" for more 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 current "ASHRAE Handbook of Fundamentals."

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.

FOAMULAR® NGX® XPS insulation use blowing agents with zero ozone depletion potential.

Detailed environmental information on the lifecycle of this product can be found in product's Environmental Product Declaration:

- "FOAMULAR® NGX® XPS Insulation Environmental Product Declaration"

RECYCLED CONTENT MATTERS

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Certifications

- Certified by SCS Global Services to contain pre-consumer recycled content
- 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.
- Environmental Product Declaration (EPD) has been certified by SCS Global Services. Reference registration # SCS-EPD-09753.
- Utilizing FOAMULAR® NGX® 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.
- UL CERTIFIED — See Bulk Shipment Certificate U-197, available at www.owenscorning.com/U197.

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.

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

Notes

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

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