

Owen's Corning™ FOAMULAR® & FOAMULAR NGX™ 400/600/1000 Extruded Polystyrene (XPS) Insulation

Overview

Owens Corning FOAMULAR & FOAMULAR NGX 400/600/1000 are high strength Extruded Polystyrene (XPS) Insulation products 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 & FOAMULAR NGX 400/600/1000 can also be used in tapered insulation systems when higher compressive strength is needed.

FOAMULAR NGX 400/600/1000 contains the additional benefit of being manufactured with a blowing agent formulation that delivers a 90% reduction to Global Warming Potential (100 year), including the complete elimination of HFC 134a.

Features and Benefits

- » Exceptional moisture resistance, long-term durability
- » Will not corrode, rot, or support mold growth
- » Lightweight, durable rigid foam panels are easy to handle and install
- » Easy to saw, cut, or score

Available Products

- » FOAMULAR 400 (Type VI)
- » FOAMULAR NGX 400 (Type VI)
- » FOAMULAR 600 (Type VII)
- » FOAMULAR NGX 600 (Type VII)
- » FOAMULAR 1000 (Type V)
- » FOAMULAR NGX 1000 (Type V)
- » FOAMULAR Taper Products
- » FOAMULAR NGX Taper Products

Application Notes

- » Solvent-based adhesives and mastics are not compatible with polystyrene insulations.
- » Cover insulation as soon as possible to protect it from excessive exposure to direct sunlight.
- » Product should be installed with the printed surface facing downward.
- » Additional protection may be required when product is placed near reflective surfaces.

- » See Owens Corning Roofing Systems Guide Specifications for details.
- » Protective cardboard disc required if used under Rhinobond® System
- » FOAMULAR & FOAMULAR NGX XPS Insulation have a maximum service temperature of 165°F.

Precautions

- » Consult Carlisle for specific instructions regarding the application of its products to Extruded Polystyrene (XPS) Insulation.
- » Keep XPS panels dry before, during, and after installation. XPS should not be installed in rain, heavy fog, or any other conditions that deposit moisture on the surface of the board. Apply only as much XPS as can be covered by the final roof membrane system on the same day. Avoid exposure to moisture from leaks or condensation.
- » The plastic or poly packaging applied at the plant to protect the board during transit should be removed upon receipt to prevent condensation or trapping of moisture, which may cause application problems.
- » XPS should be stored flat, off the ground, protected from the weather. If stored outdoors, a breathable, waterproof covering should be used.

Code Approvals

- » Owen's Corning FOAMULAR & FOAMULAR NGX 400/600/1000 XPS Insulation meets ASTM C578
- » UL (Underwriters Laboratories) Classified. UL Classification Certificate U-197 is available at www.foamular.com
- » See ICC-ES Evaluation Report ESR-1061 at www.icc-es.org
- » UL Roof Deck Constructions tested in accordance with UL 1256, "Standard for Fire Test of Roof Deck Constructions" including direct to deck Roof Deck Construction #457
- » FM Class 1 Roof Decks
- » ASTM E108 Fire Classified Assemblies
- » ASTM E119 Fire Resistance Rated Roof/Ceiling Assemblies
- » UL and FM Wind Uplift Rated Assemblies.
- » Refer to www.ul.com "Certifications" or FM Approval RoofNav for details on listings, constructions, and assemblies
- » Meets California Quality Standards and HUD UM #71a
- » Compliance verification by RADCO (AA-650)

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Typical Properties and Characteristics

	Test Method ¹	400	600	1000
Thermal Resistance, R-Value (180 day), minimum hr•ft ² •°F/Btu (RSI, m ² •°C/W) @ 75°F (24°C) mean temperature	ASTM C518	5.0 (0.88)	5.0 (0.88)	5.0 (0.88)
Long Term Thermal Resistance, LTTR-Value ³ , minimum hr•ft ² •°F/Btu (RSI, °C•m ² /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 ² , minimum psi (kPa)	ASTM D1621	40 (276)	60 (414)	100 (689)
Flexural Strength ³ , minimum psi (kPa)	ASTM C203	90 (621)	120 (828)	150 (1035)
Water Absorption ⁴ , maximum % by volume	ASTM C272	0.3	0.3	0.3
Water Vapor Permeance ⁵ , maximum perm (ng/Pa•s•m ²)	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 ^{6,7}	ASTM E84	10	10	10
Smoke Developed ^{6,7}	ASTM E84	175	175	175
Oxygen Index ⁶ , 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 x 10 ⁻⁵ (6.3x10 ⁻⁵)	3.5 x 10 ⁻⁵ (6.3x10 ⁻⁵)	3.5 x 10 ⁻⁵ (6.3x10 ⁻⁵)

Properties shown are representative values for 1" thick material, unless otherwise specified.

¹ Modified as required to meet ASTM C578.

² Values at yield or 10% deflection, whichever occurs first.

³ Value at yield or 5%, whichever occurs first.

⁴ Data ranges from 0.00 to value shown due to the level of precision of the test method.

⁵ Water vapor permeance decreases as thickness increases.

⁶ These laboratory tests are not intended to describe the hazards presented by this material under actual fire conditions.

⁷ Data from Underwriters Laboratories Inc.® classified. See Classification Certificate U-197.

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Product and Packaging Data

Material	Extruded polystyrene closed-cell foam panel with continuous skin on face and back surface.								
Packaging	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 & FOAMULAR NGX 400 XPS Insulation	1	1 x 24 x 96 (Half Unit)	4 x 8 x 8	1,536	1,536	4	24	96	Square
	2	2 x 24 x 96 2 x 48 x 96	4 x 8 x 8 4 x 8 x 8	1,536 1,536	3,072 3,072	8 8	12 6	96 48	
	3	3 x 24 x 96 3 x 48 x 96	4 x 8 x 8 4 x 8 x 8	1,024 1,024	3,072 3,072	8 8	8 4	64 32	
	4	4 x 48 x 96	4 x 8 x 8	768	3,072	8	3	24	
FOAMULAR & FOAMULAR NGX 600 XPS Insulation	1	1 x 24 x 96 (Half Unit)	4 x 8 x 8	1,536	1,536	4	24	96	Square
	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 2 x 48 x 96	4 x 8 x 8	1,536 1,536	3,072 3,072	8 8	12 6	96 48	
	3	3 x 24 x 96 3 x 48 x 96	4 x 8 x 8 4 x 8 x 8	1,024 1,024	3,072 3,072	8 8	8 4	64 32	
FOAMULAR & FOAMULAR NGX 1000 XPS Insulation	1½	1.5 x 24 x 96 (Half Unit)	4 x 8 x 4	1,024	1,536	4	16	64	Square
	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.