



# FOAMULAR® & FOAMULAR® NGX™ EXTRUDED POLYSTYRENE RIGID INSULATION PERFORMANCE CRITERIA SUMMARY SHEET

		Residential above or below grade wall & underslab	Commercial above grade wall	Residential or commercial below grade wall	Commercial roofing	Under slab, foundation wall, inverted roofing, and civil applications			Residential below grade wall	
		FOAMULAR® & FOAMULAR® NGX™ CodeBord®	FOAMULAR® & FOAMULAR® NGX™ C-200 <sup>1</sup>	FOAMULAR® & FOAMULAR® NGX™ C-300 <sup>1</sup>	FOAMULAR® & FOAMULAR® NGX™ 350 & 350 CVI	FOAMULAR® & FOAMULAR® NGX™ 400 High Density	FOAMULAR® & FOAMULAR® NGX™ 600 High Density	FOAMULAR® & FOAMULAR® NGX™ 1000 High Density	FOAMULAR® Cel-Drain®	
<b>Standard Thicknesses</b>		20 mm, 25 mm, 38 mm, 51 mm, 76 mm, 89 mm (0.8", 1", 1.5", 2", 3", 3.5")	25 mm, 38 mm, 51 mm, 64 mm, 76 mm, 102 mm (1", 1.5", 2", 2.5", 3", 4")	25 mm, 38 mm, 51 mm, 64 mm, 76 mm, 102 mm (1", 1.5", 2", 2.5", 3", 4")	38 mm, 51 mm, 64 mm, 76 mm, 102 mm (1.5", 2", 2.5", 3", 4")	25 mm, 38 mm, 51 mm, 76 mm, 102 mm (1", 1.5", 2", 3", 4")	25 mm, 38 mm, 51 mm, 76 mm (1", 1.5", 2", 3")	38 mm, 51 mm, 76 mm (1.5", 2", 3")	76 mm, 89 mm, 102 mm (3", 3.5", 4")	
*Metric sizes for CMU also available										
<b>Thermal Resistance</b> ft <sup>2</sup> hr °F/BTU (m <sup>2</sup> °C/W)		4, 5, 7.5, 10, 15, 17.5 (0.70, 0.88, 1.32, 2.64, 3.08)	5, 7.5, 10, 12.5, 15, 20 (0.88, 1.32, 1.76, 2.2, 2.64, 3.52)	5, 7.5, 10, 12.5, 15, 20 (0.88, 1.32, 1.76, 2.2, 2.64, 3.52)	7.5, 10, 12.5, 15, 20 (1.32, 1.76, 2.2, 2.64, 3.52)	5, 7.5, 10, 15, 20 (0.88, 1.32, 1.76, 2.64, 3.52)	5, 7.5, 10, 15 (0.88, 1.32, 1.76, 2.64)	7.5, 10, 15 (1.32, 1.76, 2.64)	15, 17.5, 20 (2.64, 3.08, 3.52)	
<b>24 °C (75 °F)<sup>(1)</sup></b>		5.0 (0.88)								
<b>4.4 °C (40 °F)<sup>(1)</sup></b>		5.4 (0.95)								
<b>-4 °C (25 °F)<sup>(1)</sup></b>		5.6 (0.99)								
<b>Long Term Thermal Resistance (LTTR)</b>		The LTTR performance for Owens Corning® FOAMULAR® & FOAMULAR® NGX™ insulation products per CAN/ULC S701 are as follows: Type 3 products: Minimum LTTR of RSI 1.62 at 50 mm thickness & Type 4 products: minimum LTTR of RSI 1.66 at 50 mm thickness. Please consult local Owens Corning Technical Representative for any additional information.								
<b>Standard Widths</b>		610 mm (24"), 1220 mm (48")	610 mm (24")	610 mm (24")	610 mm (24")	610 mm (24")	610 mm (24")	610 mm (24")	610 mm (24")	
<b>Standard Lengths</b>		2438 mm, 2743 mm, 3048 mm (96", 108", 120")	2438 mm (96")	2438 mm (96")	1220 mm (48")	2438 mm (96")	2438 mm (96")	2438 mm (96")	2438 mm (96")	
<b>Edge configuration</b>		Square or Ship Lapped Edges	Square or Ship Lapped Edges	Square or Ship Lapped Edges	Ship Lapped Edges*	Square Edges	Square Edges	Square Edges	Ship Lapped Edges*	
<b>Compliance</b>										
CCMC Listing		13431-L	13431-L	13430-L	13430-L	-	-	-	13387-R	
Standard Thermal Insulation Polystyrene		CAN/ULC-S701	Type 3	Type 3	Type 4	Type 4	Type 4	Type 4	Type 3	
<b>Physical Properties</b>										
Compressive Strength, min. psi (kPa)		D1621	20 <sup>(2)</sup> (140)	20 <sup>(2)</sup> (140)	30 <sup>(2)</sup> (210)	35 <sup>(3)</sup> (240)	40 <sup>(3)</sup> (275)	60 <sup>(3)</sup> (415)	100 <sup>(3)</sup> (690)	20 <sup>(2)</sup> (140)
Compressive Modulus, psi (kPa)		D1621	1000 (6895)	1000 (6895)	1350 (9308)	1480 (10204)	2000 (13789)	2700 (18616)	3700 (25510)	1000 (6895)
Flexural Strength, typ. psi (kPa)		C203	60 (414)	60 (414)	75 (517)	80 (552)	115 (793)	140 (965)	150 (1034)	60 (414)
Linear Coefficient Thermal Expansion in/in/°F (mm/mm/°C)		E228	3.5x10 <sup>-5</sup> (6.3x10 <sup>-5</sup> )	3.5x10 <sup>-5</sup> (6.3x10 <sup>-5</sup> )	3.5x10 <sup>-5</sup> (6.3x10 <sup>-5</sup> )	3.5x10 <sup>-5</sup> (6.3x10 <sup>-5</sup> )	3.5x10 <sup>-5</sup> (6.3x10 <sup>-5</sup> )	3.5x10 <sup>-5</sup> (6.3x10 <sup>-5</sup> )	3.5x10 <sup>-5</sup> (6.3x10 <sup>-5</sup> )	3.5x10 <sup>-5</sup> (6.3x10 <sup>-5</sup> )
Dimensional Stability, max. (% linear change)		D2126	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Limiting Oxygen Index, min.		min. D2863	24	24	24	24	24	24	24	24
<b>Fire Performance</b>										
Maximum operating temp. °C (°F)		-	74 (165)	74 (165)	74 (165)	74 (165)	74 (165)	74 (165)	74 (165)	74 (165)
<b>Moisture Performance</b>										
Water Absorption (max. % by volume)		D2842	0.70	0.70	0.70	0.70	0.60	0.55	0.50	0.70
Water Vapour Permeance (typical perms. (ng/Pa·s·m <sup>2</sup> ))		ASTM E96	> 0.52 (30) and < 1.05 (60)							
Water Capillarity		-	None							
Water Affinity		-	Hydrophobic							
<b>Sustainability &amp; Environmental</b>										
SCS Certification recycled content (Scientific Certification Systems)		20% (post-industrial or pre-consumer)								
UL Environmental Product Declaration		Available								
UL GREENGUARD Certified		Gold								

(1)Thermal resistance for 1 inch (25 mm) thickness (2)At 10% deformation or yield (3)At 5% deformation or yield (4)Value 2' (50 mm) thickness

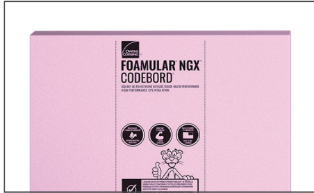
- a. Certified performance: Owens Corning Canada LP will provide test certification for published physical properties pertaining to our FOAMULAR® & FOAMULAR® NGX™ insulation products.
- b. Jobsite handling: To protect FOAMULAR® & FOAMULAR® NGX™ insulation and to prevent discoloration and/or surface deterioration caused by excessive exposure to direct sunlight, it is recommended that in exterior applications the product be covered as soon as practicable.
- c. Vapour retarders: Assemblies should be evaluated for effectiveness and location of vapour retarders to avoid condensation and subsequent damage to structures. Vapour retarders shall be chosen and applied in accordance to applicable codes for desired assembly.
- d. Air and water infiltration: All air and water infiltration requirements for a designed assembly shall conform to applicable building codes.
- e. Flame spread classification: ULC flame spread classification of greater than 25 and less than 500 according to CAN/ULC-S102.2 (tunnel floor test).
- f. Warning combustibles: FOAMULAR® & FOAMULAR® NGX™ insulation is combustible and can be a fire hazard if improperly used or installed. Though they contain a flame retardant to inhibit ignition they will ignite if exposed to fire of sufficient intensity. Do not expose them to open flame or other ignition sources during shipping, handling, storage, and installation or use.
- g. Interior protection: When used in buildings for human occupancy, FOAMULAR® & FOAMULAR® NGX™ insulation must be protected by a minimum 1/2" (12.7mm) thick gypsum board, or approved equal, covering surfaces exposed after installation. Boards must be mechanically fastened in place as prescribed by the applicable Building Code.
- h. Adhesives/sealants: Some of these products contain solvents that attack polystyrene insulation. Consult manufacturer to verify the chemical compatibility of solvents/sealants with FOAMULAR® & FOAMULAR® NGX™ insulation.
- i. Chemicals: FOAMULAR® & FOAMULAR® NGX™ insulation has good chemical resistance to many acids, caustics, salts, cements and mortars and poor resistance to some hydrocarbons and a number of other petroleum derivatives. Be sure to check with the supplier of the item regarding chemical compatibility.

\*CVI notes drainage channels underside of board. One lengthwise and two widthwise: 13 mm wide x 13 mm deep max.; 1/2" x 1/2". One entire perimeter: 6.5 mm wide x 13 mm deep max.; 1/4" x 1/2". Tapered options available through third party.

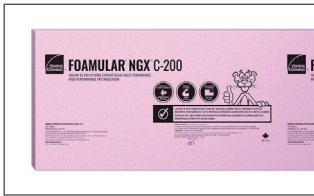


# FOAMULAR® & FOAMULAR® NGX™ EXTRUDED POLYSTYRENE RIGID INSULATION PRODUCT APPLICATIONS

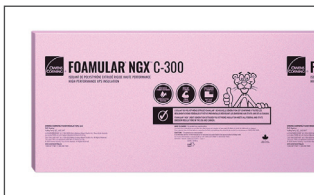
FOAMULAR® NGX™ insulation products contain the additional benefit of being manufactured with a blowing agent formulation that delivers a 90% reduction to Global Warming Potential (100 year), including the complete elimination of HFC 134a.<sup>j</sup>



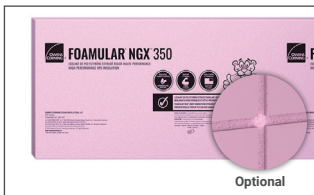
**FOAMULAR® & FOAMULAR® NGX™ CodeBord® Insulation:** Rigid insulation board with thermal, moisture resistive properties and functionality as air barrier for use on residential and commercial exterior above or below grade wall assemblies and suitable under floor slabs that do not exceed 20 psi. Compatible with wood, steel, or concrete assemblies. Available in thicknesses from 20 mm (0.8") to 102 mm (4"), 1220 mm (48") width and 2438 mm (96"), 2743 mm (108") and 3048 mm (120") lengths with ship lapped edge.



**FOAMULAR® & FOAMULAR® NGX™ C-200 Insulation:** Rigid insulation board with thermal, moisture resistive properties and functionality as air barrier for use on residential and commercial exterior above or below grade wall assemblies and suitable under floor slabs that do not exceed 20 psi. Compatible with wood, steel, or concrete assemblies. Available in thicknesses from 25 mm (1") to 102 mm (4"), 610 mm (24") width and 2438 mm (96") length in square or ship lapped edges.



**FOAMULAR® & FOAMULAR® NGX™ C-300 Insulation:** Rigid insulation board with thermal and moisture resistive properties used as continuous insulation for use on residential and commercial above and below grade wall assemblies and suitable under floor slabs that do not exceed 30 psi.



**FOAMULAR® & FOAMULAR® NGX™ 350 & 350 CVI Insulation:** Rigid insulation board for protected membrane roofing applications. High density continuous insulation for use on commercial flat roof assemblies with option of integrated drainage channels (CVI).



**FOAMULAR® & FOAMULAR® NGX™ 400/600/1000 High Density Insulation:** High strength products designed for use in building envelope and civil engineering applications requiring additional load-bearing capability such as under slab, concrete floors, flat roofs, foundations, roadways and rail beds, plaza and parking decks and cold storage installations.



**FOAMULAR® Cel-Drain® Insulation:** Rigid insulation board that provides continuous thermal resistance, drains moisture, and protects above grade portion of foundation. Continuous exterior insulation for concrete or concrete block foundation walls with manufactured drainage channels to direct moisture to weeping tile systems.

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Previous Ed: 2018.09.01

<sup>j</sup>. Compared to previous FOAMULAR® insulation blowing agent formulation.

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). UL Environment claim validations lend third-party credibility to single-attribute environmental claims.



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