



C12 – 1.5 x 1.5

Carbon Fiber Reinforcing Grids for Concrete Structures



DESCRIPTION C-GRID™ C12 – 1.5 x 1.5 is one of the C12 Series of carbon grids, a medium strength carbon fiber grid for reinforcing concrete structures.

FEATURES

Non-corrosive, can be used with as little as 1/4" (6mm) of cover

Requires less concrete cover leading to lighter structures

Lightweight, easy to handle and work with, can be cut to fit using conventional tin snips

High tensile strength and modulus

Outstanding mechanical bond with concrete, requires a minimum of 1/4" to develop its strength

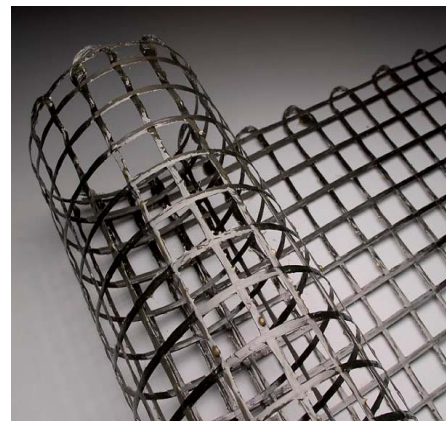
APPLICATIONS

Cast stone reinforcements

Thin topping slabs and overlays

Concrete Countertops

Concrete Décor applications



PHYSICAL PROPERTIES

Composition	carbon fiber and epoxy resin
Color	Black
Spacing of longitudinal strands x spacing of transverse strands	1.5" x 1.5" (38mm x 38mm)
Supply form (custom widths and length also available)	36" x 75 ft (0.914m x 22.86m) rolls

MECHANICAL PROPERTIES

	LONGITUDINAL PROPERTIES		TRANSVERSE PROPERTIES	
Individual strand cross-sectional area	0.0006675 in. ²	(0.4306 mm ²)	0.0006675 in. ²	(0.4306 mm ²)
Average number of strands per unit width	8 strands/ft	(26.2 strands/m)	8 strands/ft	(26.2 strands/m)
Area of strands per unit width	0.005340 in. ² /ft	(16.95 mm ² /m)	0.005340 in. ² /ft	(6.95 mm ² /m)
Strand tensile strength	310 lbs	(1.38 kN)	270 lbs	(1.2 kN)
Grid tensile strength per unit width	2480 lbs/ft	(36.1 kN/m)	2160 lbs /ft	(31.4 kN/m)
Tensile modulus of elasticity	34,500 ksi	(238 MPa)	34,500 ksi	(238 MPa)
Strand strain at rupture	1.3%		1.2%	

Notes:

- Centerline-to-centerline spacing between strands is nominal and based on the average number of strands per unit width. Actual spacing may vary by ± 0.10 inch (± 2.5 mm).
- The longitudinal direction is in the direction of the roll and the transverse direction is across the width of the roll. For example, if a roll of C-GRID is 47.5" wide the carbon strands in the transverse direction are 47.5" in length. If a roll of C-GRID is 500 yards long, the longitudinal strands are 500 yards in length.
- Individual strand cross-sectional area is normalized to the cross-sectional area of the fibers in accordance with ACI 440.2R. The actual measured thickness and width are larger and shall not be used for design purposes.
- Reported tensile strengths are based on the average minus two standard deviations (AVG-2σ) of a large population of test results. Tensile modulus values are based on properties reported by the carbon fiber supplier. C-GRID exhibits linear elastic behavior such that failure strains are estimated using Hooke's Law.

Application Use Note

C-GRID is a relatively new material without the extensive performance history of traditional construction materials. For that reason it is recommended that C-GRID not be used in critical life-safety applications or fire-rated structures until additional experience and testing are obtained. Reported properties are average values, not design values, unless noted otherwise. Structures and applications using C-GRID should be designed using appropriate safety factors or load and strength reduction factors. All applications utilizing C-GRID should be designed and reviewed by a licensed engineer experienced with FRP materials. The data expressed herein is believed to be accurate at the time of publication; however, it is subject to change without notice.



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