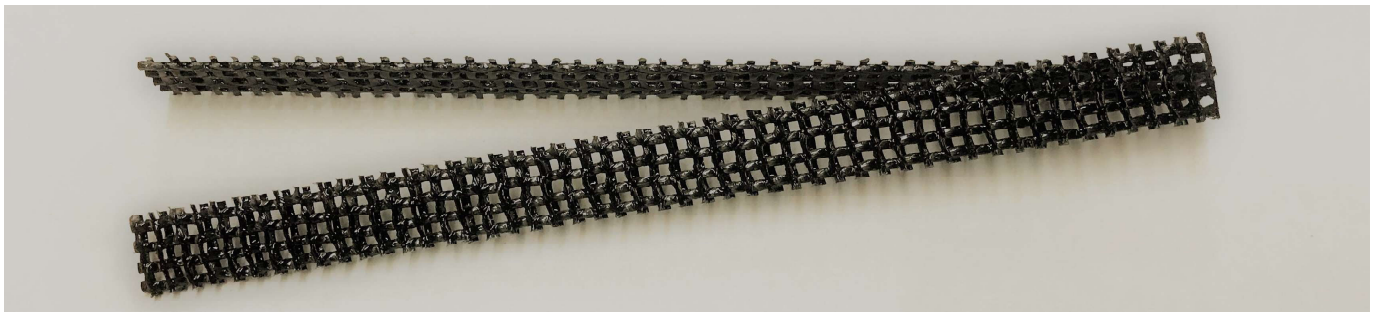


Fortress Grid-Stitch™



**ERT Epoxy Riveting Technology
Bidirectional Carbon Fiber Grid for structural
crack stitching and reinforcement**

Product Description: Fortress Grid-Stitch™ is a pre-impregnated, bidirectional carbon fiber grid strap for use as an externally bonded reinforcement for crack stitching and strengthening of concrete and masonry structures. Fortress Grid-Stitch™ straps are typically field installed using Fortress #4000 resin to form a carbon fiber reinforced polymer (CFRP) system.



PRODUCT USE

Key Features

- ❖ Crack reinforcement & strengthening
- ❖ For concrete and masonry basement walls, floors, and ceilings
- ❖ Grid allows crack injection pass through

Target Applications

- ❖ Structural Retrofit & Upgrades
- ❖ Crack control of parking decks & floor slabs
- ❖ Masonry wall crack control
- ❖ Service life increases



PRODUCT SPECIFICATIONS

Base Material	Carbon filament tows woven into a grid
Shelf Life	Unlimited
Color	Black
Carbon Filament Tensile Strength, ksi (MPa)	700 (4,826)
Carbon Filament Tensile Modulus, ksi (MPa)	36,000 (248,000)
Fortress Grid-Stitch™ Nominal Size, in (mm)	10 x 0.8 x 0.090 (254 x 20 x 2.3)

Laminated CFRP System Mechanical and Physical Properties

	Ultimate Tensile Strength ¹ f_{tu} ksi (MPa)	Modulus of Elasticity ¹ E_f ksi (GPa)	Ultimate Tensile Strength per Unit Width ² p_{tu} kips/in (kN/mm)	Tensile Elastic Modulus per Unit Width ² E_{t_f} kips/in (kN/mm)	Ultimate Strain at Rupture ϵ_{tu} in/in (mm/mm)
Design Values ³	234.7 (1,618)	16,300 (112.3)	6.15(1.08)	271 (47.6)	0.0129

Laminate results at room temperature using SKRS Room 77°F curing epoxy resin

¹ASTM D3039 ²Thickness of cured laminate = 0.090 in (2.3 mm)

³Design values are statistically based as recommended by American Concrete Institute, ACI 440.2R

Packaging. Standard packaging includes cardboard boxed. Labeled on box.

HOW TO USE

Preparation. Protect the work area from standing water and inclement weather. Surfaces may be damp. Surfaces must be clean and sound. Spalling or other damaged concrete must be removed to solid material. A straight saw cut, typically double thickness of grid stitch and half the depth of substrate. Use oil free compressed air to remove concrete dust or vacuum. Add #4000 epoxy to saw cut and butter grid with #4000 epoxy and place into saw cut. Keep Fortress Grid-Stitch™ straps from contamination. Store in a clean and dry area away from direct sunlight. Keep in original packaging until installation and protect from physical damage. Remove dust, dirt, and any other foreign materials. Remove water, grease, wax, oil or any other liquids with an appropriate solvent.

Cutting. Fortress Grid-Stitch™ straps may be cut to a desired length with sharp snips.

Epoxy Resin. Fortress #4000 epoxy resin is recommended for all applications for bonding Fortress Grid-Stitch™ straps.

Applications. Grid Stitch can be used with various modulus resins. Either pourable or injection resin will interlock Fortress Grid-Stitch™ straps.

Qualifications. Except for standard Fortress installations by Fortress qualified installers, each structural and life safety application requires the design and certification of a licensed, professional engineer.

Cautions. An near surface mount applied CFRP system is a vapor barrier. Consult with a licensed, professional engineer to evaluate results of encapsulating porous substrates. Installation should be performed only by a Fortress trained and approved installer. Caution must be used when handling Fortress Grid Stitch straps. Gloves should be worn to protect against carbon dust skin irritation and exposed fiber ends. Use of an appropriate, properly fitted NIOSH approved respirator is recommended. As with any cutting and adhesive operation, proper eye protection should be used. Always follow OSHA and site safety requirements.

Keep Out Of Reach of Children - Keep Container Tightly Closed – Not For Internal Consumption – For Industrial Use Only

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(800) 207-6204 www.fortressstabilization.com 184 W 64th Street, Holland, Michigan 49423 USA