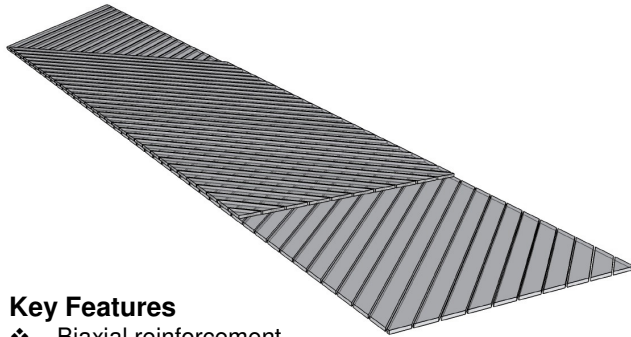


Fortec Glass Textile 810-45

±45° Bi-Directional, E-Glass Textile
for structural reinforcement and containment



Product Description: Fortec Glass Textile 810-45 is a flexible, double bias, bi-directional E-glass fiber textile designed for use as an externally applied reinforcement for strengthening concrete, timber and masonry structures. Continuous E-glass fibers are oriented at ±45° to the roll direction. Fortec Glass Textiles are typically field installed using the Fortec #1310 epoxy system to form an inexpensive and tough E-glass fiber reinforced polymer (GFRP) system.



Key Features

- ❖ Biaxial reinforcement
- ❖ Moisture resistant
- ❖ Dimensionally stable
- ❖ Fire resistant

Benefits

- ❖ Non-crimp, stitch bonded
- ❖ Reduced resin use

PRODUCT USE

Target Applications

- ❖ Structural retrofit & upgrades
- ❖ Infrastructure rehabilitation
- ❖ Increased strength of masonry & concrete walls
- ❖ Increased strength of parking and bridge decks
- ❖ Crack and moisture control
- ❖ Shear strength improvements
- ❖ Flexural strength improvements
- ❖ Addition of heavy or vibrating machinery
- ❖ Service life increases

Repair Applications

- ❖ Crack and moisture control
- ❖ Strength increase
- ❖ Seismic confinement
- ❖ Deformation & sag decrease
- ❖ Substrate conforming

PRODUCT SPECIFICATIONS

Typical Dry Fiber Properties

Base Material	E-Glass continuous fibers
Storage	Product to be kept from direct sunlight.
Shelf Life	Unlimited
Color	White
Filament Tensile Strength, ksi (GPa)	470 (3.24)
Filament Tensile Modulus, ksi (GPa)	10,500 (72.4)
Fabric Areal Weight, oz/yd² (g/m²)	24 (810)
Ultimate Strain at Rupture, in/in (mm/mm)	0.045
Dry Fabric thickness, in (mm)	0.029 (0.74)

Laminated GFRP 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 $E_f t_f$ kips/in (kN/mm)	Ultimate Strain at Rupture ϵ^*_{tu} in/in (mm/mm)
Average Values	49 (337)	2,600 (17.9)	1.6 (0.27)	88.0 (14.8)	0.018
Design Values ³	32.4 (223)	2,160 (14.9)	1.1 (0.18)	73.3 (12.3)	0.015

Laminate results at room temperature using SKRS Room 77°F curing Fortec #1310 epoxy

¹ASTM D3039

²Thickness of cured laminate = 0.034 in (0.864 mm)

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

Packaging 12-inch (300 mm) or 24-inch (600 mm) widths standard. Up to 50-inch (1.3 m) width available. Standard packaging includes cardboard core, plastic wrapped, bagged, sealed & boxed.

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. Laitance must be removed. Grinding, chipping, scarifying, shot blasting, sand blasting, or water jet are all acceptable methods. For concrete and masonry applications, patch all uneven surfaces with Fortec #1310 epoxy resin. Broadcast silica sand on patches to avoid amine blush. Use oil-free compressed air to remove any dust and debris immediately prior to application of epoxy resins. Keep Fortec Glass Textiles 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. Fortec Glass Textiles may be cut to a desired length with sharp scissors or a sharp utility knife. Dull tools tend to fray the ends of the textile and should be avoided.

Epoxy Resin. Fortec #1310 epoxy resin is recommended for all applications.

Applications. Horizontal and vertical applications may use either the dry or wet lay-up techniques. The wet lay-up technique using an automated impregnator will provide best results for overhead applications. An automated impregnator will typically provide more uniform application of resin using less resin, and improved results with fewer voids and less waste.

Dry Lay-Up Application. Apply resin to the substrate at a uniform rate of approximately 45 ft²/gal (approx. 35 mils). Coverage yield will vary with substrate roughness. Using gloved hands and a plastic laminating roller, press Fortec Glass Textiles into the resin pressing out any wrinkles and air voids. Allow the resin to squeeze through the textile to assure a proper bond. For a single textile layer, apply an epoxy resin top coat at a rate of approximately 160 ft²/gal (10 mils) while the base resin is still within its working limit (depending on temperature) and smooth for a finished appearance. If more than one layer of textile is used, apply intermediate epoxy resin layers at a rate of approximately 100 ft²/gal (15 mils). A good measure for dry lay-up applications will use approximately twice the weight of resin to textile. After cure, perform sounding to locate any voids. Inject epoxy resin as needed to fill all voids.

Wet Lay-Up Application. Prior to applying the wetted fabric, apply Fortec #1310 epoxy resin using a rate of approximately 160 ft²/gal (6 mils) to a prepared substrate to seal the surface and to provide a tacky surface to apply the textile. Resin will tack at 30 minutes at 70°F. Saturate and infuse the textile with Fortec #1310 epoxy resin. For uniform application, the resin infusing process should be completed using an automated impregnator. Apply the saturated textile to the sealed substrate and press out any wrinkles and air voids with a plastic laminating roller. Apply additional saturated textile while the previous layer is still within its resin working limit if multiple layers are desired. Finally, apply a top coat of epoxy resin at a rate of approximately 160 ft²/gal (10 mils) and smooth for a finished appearance. After cure, perform sounding to locate any voids. Inject epoxy resin as needed to fill all voids.

Qualifications. Each structural and life safety application requires the design and certification of a licensed, professional engineer.

Cautions An externally applied GFRP 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 Fortec trained and approved installer. Caution must be used when handling glass textiles. Gloves should be worn to protect against 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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