

SikaWrap® Hex 106G

Bi-directional Glass fiber fabric for structural strengthening

Description	SikaWrap Hex 106G is a bi-directional E-glass fiber fabric. Material is field laminated using Sikadur 330, Sikadur 300 or Sikadur Hex 300/306 epoxy to form a glass fiber reinforced polymer (GFRP) used to strengthen structural elements.
Where to Use	Load increases Seismic strengthening of: <ul style="list-style-type: none">■ Columns■ Masonry walls Damage to structural parts Temporary strengthening Change in structural system Design or construction defects
Advantages	<ul style="list-style-type: none">■ Approved by ICBO/ICC ER-5558.■ Used for shear, confinement or flexural strengthening.■ Flexible, can be wrapped around complex shapes.■ Light weight.■ Non-corrosive.■ Acid resistant.■ Low aesthetic impact.■ Economical.
Possible Applications	<ul style="list-style-type: none">■ Bridges■ Parking Structures■ Buildings■ Marine Structures■ Civil/Environmental Facilities
Packaging	Rolls: 50 in. x 450 ft.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions Store dry at 40°-95°F (4-35°C)

Color White

Primary Fiber Direction 0°/90° (bi-directional)

Weight per Square Yard 9.6 oz. (325 g/m²)

Weight Ratio (Warp:Weft) 1:1

Cured Laminate Properties (0° & 90°) Design Values

Tensile Strength 35,300 psi (244 MPa)

Modulus of Elasticity 2.35 x 10⁶ psi (16,215 MPa)

Elongation at Break 1.43%

Thickness 0.013 in. (0.33 mm)

Strength per Inch Width 572 lbs./layer (2.53 kN)

Fiber Properties

Tensile Strength 3.3 x 10⁵ psi (2,276 MPa)

Tensile Modulus 10.5 x 10⁶ psi (72,390 MPa)

Elongation 4%

Density 0.092 lbs/in³ (2.54 g/cc)

How to Use

Surface Preparation Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, dis-integrated materials, and other bond inhibiting materials from the surface. Consult Sikadur 300, Sikadur Hex 300/306 and Sikadur 330 technical data sheets for additional information on surface preparation.

Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified following surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture.

In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Mixing	Consult Sikadur 330, Sikadur 300 or Sikadur Hex 300/306 technical data sheets for information on epoxy resins.
Application	<p>SikaWrap Hex 106G can be applied using wet or dry lay-up methods.</p> <p>Dry Lay-Up: Apply the mixed Sikadur 330 epoxy resin directly onto the substrate at a rate of 40-50 ft²/gal. (32-40 mils), depending on the surface profile. Carefully place the fabric into the resin with gloved hands and smooth out any irregularities or air pockets using a plastic laminating roller. Allow the resin to squeeze out between the rovings of the fabric. If more than one layer of fabric is required apply additional Sikadur 330 at a rate of 100ft²/gal. (16 mils) and repeat as above. Apply a final coat of Sikadur 330 to the exposed surface at a rate of 160ft²/gal. (10 mils).</p> <p>Wet Lay-Up: Seal the prepared concrete surface using Sikadur 300, Sikadur Hex 300 or Sikadur Hex 306. Material may be applied by spray, brush or roller. SikaWrap Hex 106G can be impregnated using either Sikadur 300, Sikadur Hex 300 or Sikadur Hex 306 epoxy. For best results, the impregnation process should be accomplished using an automated fabric saturating device. Once saturated, apply fabric to the sealed concrete surface and smooth out any irregularities or air pockets using a plastic laminating roller. If required, apply additional layers of fabric while epoxy on previous layer is still tacky. Coat the exposed surface of final fabric layer using Sikagard 670W or Sikagard 62.</p> <p>Installation of SikaWrap products should be performed only by specially trained approved contractors.</p>
Cutting SikaWrap	Fabric can be cut to appropriate length by using a commercial quality heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber their use should be avoided. Consult MSDS for proper handling procedures.
Limitations	<ul style="list-style-type: none"> ■ Design calculations must be made and certified by an independent licensed professional engineer. ■ System is a vapor barrier. Concrete should not be encapsulated in areas of freeze/thaw.
Caution	<p>SikaWrap fabric is non-reactive. However, caution must be used when handling since a fine "glass dust" may be present on the surface. Gloves must therefore be worn to protect against skin irritation.</p> <p>Caution must also be used when cutting SikaWrap fabric to protect against airborne dust generated by the cutting procedure. Use of an appropriate, properly fitted NIOSH approved respirator is recommended.</p>

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