

## PRODUCT DATA SHEET

## SikaWrap® Hex-106 G

## BI-DIRECTIONAL GLASS FIBER FABRIC FOR STRUCTURAL STRENGTHENING

## PRODUCT DESCRIPTION

SikaWrap® Hex-106 G is a bi-directional (0/90) E-glass fiber fabric. Material is field laminated using Sikadur® 330 or Sikadur® Hex 300 epoxy to form a glass fiber reinforced polymer (GFRP) used to strengthen structural elements.

## USES

SikaWrap® Hex-106 G may only be used by experienced professionals.

**Load increases****Seismic strengthening of:**

- Columns
- Masonry walls

**Damage to structural parts****Temporary strengthening****Change in structural system****Design or construction defects**

## CHARACTERISTICS / ADVANTAGES

- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex shapes
- Light weight
- Non-corrosive
- Acid resistant
- Low aesthetic impact

## APPROVALS / STANDARDS

- Approved by ICC ESR-3288
- IBC 2015 Compliance

## PRODUCT INFORMATION

Fiber Type	0 °/90 ° (bi-directional)
Packaging	Rolls: 50 in. (1.3 m) x 450 ft. (137 m)
Shelf Life	10 years in original packaging
Storage Conditions	Store dry at 40–95 °F (4–35 °C)
Dry Fibre Density	0.092 lb./in <sup>3</sup> (2.5 g/cm <sup>3</sup> )
Dry Fibre Thickness	0.0025 in. (0.064 mm) each fiber direction
Area Density	9.6 osy (325 gsm) total
Dry Fibre Tensile Strength	330 ksi (2,276 MPa)

Dry Fibre Modulus of Elasticity in Tension 10.5 msi (72.4 GPa)

Dry Fibre Elongation at Break 4.00 %

## TECHNICAL INFORMATION

Nominal Ply Thickness	<b>Average Ultimate Value</b>	<b>Design Value</b>	-
	-	0.007 in. (0.18 mm) each fiber direction	
Tensile Strength	<b>Average Ultimate Value</b>	<b>Design Value</b>	(ASTM D-3039)
	76.7 ksi (529 MPa)	65.6 ksi (452 MPa)*	73 °F (23 °C)
			50 % R.H.
	* Average ultimate value minus 3 standard deviations		
	<b>Average Ultimate Value</b>	<b>Design Value</b>	(ASTM D-7565)
	-	0.5 kips/in./ply	73 °F (23 °C)
			50 % R.H.
Tensile Modulus	<b>Average Ultimate Value</b>	<b>Design Value</b>	(ASTM D-3039)
	-	4.24 msi (29.2 GPa)(E <sub>f</sub> )	73 °F (23 °C)
			50 % R.H.
* Average ultimate value minus 3 standard deviations			
Tensile % Elongation	<b>Average Ultimate Value</b>	<b>Design Value</b>	(ASTM D-3039)
	1.81 %	1.45 %*	73 °F (23 °C)
			50 % R.H.
* Average ultimate value minus 3 standard deviations			
Tensile Stiffness	<b>Average Ultimate Value</b>	<b>Design Value</b>	(ASTM D-7565)
	-	29.7 kips/in./ply (E <sub>f</sub> *A)	73 °F (23 °C)
			50 % R.H.

## APPLICATION INSTRUCTIONS

### SUBSTRATE 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, disintegrated materials, and other bond inhibiting materials from the surface. Consult Sikadur® Hex 300 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 (ASTM D4541) 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 or Sikadur® Hex 300 technical data sheets for information on epoxy resins.

### APPLICATION METHOD / TOOLS

SikaWrap® Hex-106 G can be applied using wet or dry lay-up methods.

**Dry Lay-Up:** Apply the mixed Sikadur® 330 epoxy resin directly onto the substrate at a rate of 40–50 ft<sup>2</sup>/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 100ft<sup>2</sup>/gal. (16 mils) and repeat as above. Apply a final coat of Sikadur® 330 to the exposed surface at a rate of 160ft<sup>2</sup>/gal. (10 mils).

**Wet Lay-Up:** Seal the prepared concrete surface using Sikadur® Hex 300. Material may be applied by spray, brush or roller. SikaWrap® Hex-106 G can be impregnated using Sikadur® Hex 300 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. For overhead and vertical applications, prime concrete with Sikadur® 330 to improve tack. Installation of SikaWrap® products should be performed only by specially trained approved contractors.

#### **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**

- 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.

### **BASIS OF PRODUCT 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.

### **LOCAL RESTRICTIONS**

See Legal Disclaimer.

### **ENVIRONMENTAL, HEALTH AND SAFETY**

- 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.

### **LEGAL DISCLAIMER**

**KEEP CONTAINER TIGHTLY CLOSED •KEEP OUT OF REACH OF CHILDREN •NOT FOR INTERNAL CONSUMPTION •FOR INDUSTRIAL USE ONLY •FOR PROFESSIONAL USE ONLY**

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