

# PRODUCT DATA SHEET

## SikaWrap® Hex-100 G

GLASS FIBER FABRIC FOR STRUCTURAL STRENGTHENING



### DESCRIPTION

SikaWrap® Hex-100 G is a unidirectional E-glass fiber fabric. Material is field laminated using Sikadur Hex 300 epoxy to form a glass fiber reinforced polymer (GFRP) used to strengthen structural elements.

### USES

SikaWrap® Hex-100 G may only be used by experienced professionals.

**SikaWrap® Hex-100 G can only be installed by a Sika New Zealand Approved Contractor.**

- Load increases
- Seismic strengthening of columns and masonry walls
- Damage to structural parts
- Temporary strengthening
- Change in structural system
- Design or construction defects

### CHARACTERISTICS / ADVANTAGES

- Approved by ICC ESR-3288
- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex shapes
- Light weight
- Non-corrosive
- Acid resistant
- Low aesthetic impact

### PRODUCT INFORMATION

<b>Fibre Type</b>	0 ° (unidirectional)
<b>Packaging</b>	Rolls: 50 in. 1.3 m x 46 m
<b>Shelf Life</b>	n/a
<b>Storage Conditions</b>	Store dry at +4°C – 35°C
<b>Dry Fibre Density</b>	2.5 g/cm <sup>3</sup>
<b>Dry Fibre Thickness</b>	0.36 mm
<b>Area Density</b>	2.5 g/cm <sup>3</sup>
<b>Mass per Unit Length</b>	917 gsm
<b>Dry Fibre Tensile Strength</b>	2,276 MPa
<b>Dry Fibre Modulus of Elasticity in Tension</b>	72.4 GPa
<b>Dry Fibre Elongation at Break</b>	4.00 %

## TECHNICAL INFORMATION

<b>Laminate Nominal Thickness</b>	<b>Average Ultimate Value</b>	<b>Design Value</b>	(-) 23 °C, 50 % R.H.
	-	1.0 mm	
<b>Laminate Tensile Strength</b>	<b>Average Ultimate Value</b>	<b>Design Value</b>	(ASTM D-3039) 23 °C, 50 % R.H.
	611 MPa	541 MPa*	
	* Average ultimate value minus 3 standard deviations		
<b>Laminate Modulus of Elasticity in Tension</b>	<b>Average Ultimate Value</b>	<b>Design Value</b>	(ASTM D-3039) 23 °C, 50 % R.H.
	-	27.4 GPa	
<b>Tensile Stiffness</b>	<b>Average Ultimate Value</b>	<b>Design Value</b>	(ASTM D-7565) 23 °C, 50 % R.H.
	-	159 kips/in./ply	

## 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®-300, Sikadur® Hex-300 and Sikadur®-330 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 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. Refer to the method statement for full information.

**Mixing:** Consult Sikadur®-300 or Sikadur® Hex-300 data sheets for information on epoxy resins.

### APPLICATION METHOD / TOOLS

Consult Sikadur®-300 or Sikadur® Hex-300 data sheets for information on epoxy resins. Prior to placing the fabric, the concrete surface is sealed using Sikadur® Hex-300 epoxy. Material may be applied by spray, brush or roller. SikaWrap® Hex-100 G can be impregnated using Sikadur® Hex-300 epoxy. For best results on larger projects, the impregnation process should be accomplished using a mechanically driven fabric saturator or similar device. In special cases where the size of the project does not justify the use of a saturator, the fabric may be saturated by hand using a roller prior to placement. In either case, installation of this system should be performed only by a specially trained, approved contractor. For overhead and vertical applications, prime concrete with Sikadur®-30 or Sikadur®-

330 to improve tack. Saturate fabric with Sikadur® Hex-300.

### 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 SDS 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.
- The SikaWrap® Hex-100 G can be over coated with a cementitious overlay or other coatings for aesthetic and / or protective purposes. The over coating system selection is dependent on the exposure and the project specific requirements. For additional UV light protection in exposed areas use Sikagard®-550 W Elastic.
- Please refer to the Method Statement of SikaWrap manual wet application (Ref. 850 41 03) or SikaWrap machine wet application (Ref. 850 41 04) for further information, guidelines and limitations.

## BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

## LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

## ECOLOGY HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

## LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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