BUILDING TRUST

PRODUCT DATA SHEET

SikaWrap® Hex-106 G

BI-DIRECTIONAL GLASS FIBER FABRIC FOR STRUCTURAL STRENGTHENING

SIKA APPROVED CONTRACTOR ONLY

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.
SikaWrap® Hex-106 G can only be installed by a Sika New Zealand Approved Contractor.
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

Fibre Type	0 °/90 ° (bi-directional)
Packaging	Rolls: 1.3 m x 137 m
Shelf Life	10 years in original packaging
Storage Conditions	Store dry at +4°C – +35°C
Dry Fibre Density	2.5 g/cm^3
Dry Fibre Thickness	0.064 mm each fiber direction
Area Density	325 gsm total
Dry Fibre Tensile Strength	2,276 MPa
Dry Fibre Modulus of Elasticity in Tension	72.4 GPa

Dry Fibre Elongation at Break	4.00 %

TECHNICAL INFORMATION

Laminate Nominal Thickness	**Average Ultimate Value**	**Design Value**	-
	-	0.18 mm each fiber direction	
Laminate Tensile Strength	**Average Ultimate Value**	**Design Value**	(ASTM D-3039) 23 °C 50 % R.H.
	529 MPa	452 MPa*	
	* Average ultimate value minus 3 standard deviations		
	Average Ultimate Value	**Design Value**	(ASTM D-7565) 23 °C 50 % R.H.
	-	0.5 kips/in./ply	
Laminate Modulus of Elasticity in Tension	**Average Ultimate Value**	**Design Value**	(ASTM D-3039) 23 °C 50 % R.H.
	-	29.2 GPa (Ef)	
	* Average ultimate value minus 3 standard deviations		
Laminate Elongation at Break in Tension	**Average Ultimate Value**	**Design Value**	(ASTM D-3039) 23 °C 50 % R.H.
	1.81 %	1.45 %*	
	* Average ultimate value minus 3 standard deviations		
Tensile Stiffness	**Average Ultimate Value**	**Design Value**	(ASTM D-7565) 73 °F (23 °C) 50 % R.H.
	-	29.7 kips/in./ply (Ef*A)	

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 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 0.7 - 1.0 l/m², 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 0.4 - 0.5 l/m² and repeat as above. Apply a final coat of Sikadur®-330 to the exposed surface at a rate of 0.25 - 0.3 l/m².

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®-550 W Elastic 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 Sika New Zealand 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 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.

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

- 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 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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