BUILDING TRUST

PRODUCT DATA SHEET

SikaWrap®-600 C WV

Woven, unidirectional, high-strength carbon fibre fabric with a fibre area density of 600 g/m², designed for structural strengthening applications

DESCRIPTION

SikaWrap®-600 C WV is an unidirectional woven carbon fibre fabric. It is part of the SikaWrap® composite strengthening system. The Product is made of high-strength carbon fibres with an area density of 600 g/m². The fabric is designed for installation using the wet application process.

USES

SikaWrap®-600 C WV may only be used by experienced professionals.

SikaWrap®-600 C WV is used as a reinforcement fabric for externally bonded structural strengthening systems on concrete, masonry and wooden substrates. Externally bonded structural strengthening systems are used for:

- Increasing the flexural and shear loading capacity of elements and structures
- Enhancing the load-carrying capacity or ductility of structural members in compression
- Replacing missing steel reinforcement
- Structural upgrading of weak concrete elements or structures
- Improving impact resistance
- Passive strengthening for seismic event protection

Please note:

- A specialist structural engineer must be consulted for any structural strengthening design calculation.

FEATURES

- Very cost effective in comparison to traditional strengthening techniques
- Fast application increases productivity, saves time and reduces disruption
- Enables upgrading of a structure to comply with current standards
- Improves the service life of a structure
- Manufactured with thermo-welded weft fibres to keep the fabric stable
- Multifunctional fabric for use in many different strengthening applications
- Flexible and accommodating to different surface planes and geometry (such as beams, columns, chimneys, piles, walls, soffits and silos)
- Low density for minimal additional weight

CERTIFICATES AND TEST REPORTS

- Australia: AS5100.8:2017 Bridge Design, Part 8 Rehabilitation and Strengthening of existing bridges, CFS(1) Carbon Fabric
- Australia: Vic Roads Spec Section 688 - Fibre Reinforced Polymer Composite Strengthening of Concrete Structures

PRODUCT INFORMATION

Construction	Fibre orientation	0° (longitudinal, unidirectional)	
	Warp (longitudinal)	Black carbon fibre, 95 %	
	Weft (transversal)	E-Glass 5%	
Fibre type	Selected high strength carbon fibres		
Packaging	Roll width	500 mm	
	Roll length	50 m	
	Refer to the current price list for available packaging variations.		
Shelf life	24 months from date of production		
Storage conditions	The Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +35 °C. Protect the Product from direct sunlight. Always refer to the packaging.		
Mass per area	(600 ± 30) g/m²		
Dry fibre thickness	0.332 mm		
Dry fibre density	1.805 g/cm³		

TECHNICAL INFORMATION

Laminate tensile strength	Mean	3975 N/mm²	(EN 2561)
	5 % characteristic	3600 N/mm²	
	Mean	1360 N/mm²	(ASTM D3039)
	Characteristic (ACI 440.2R)	1230 N/mm²	
	All values refer to the relevant design nominal thickness.		
Laminate modulus of elasticity in tension	Mean	225 kN/mm²	(EN 2561)
	5 % characteristic	215 kN/mm²	
	Mean	73 kN/mm²	(ASTM D3039)
	All values refer to the relevant design nominal thickness.		
Laminate elongation at break in tension	Mean	1.7 %	(EN 2561)
	5 % characteristic	1.6 %	
	Mean	1.8 %	(ASTM D3039)
Design nominal thickness	1 mm		
Design nominal cross section	332 mm² per metre width		
Dry fibre elongation at break	2.1 %		
Dry fibre modulus of elasticity in tension	230 kN/mm²		(ISO 10618)
Dry fibre tensile strength	4900 N/mm²		(ISO 10618)

APPLICATION INFORMATION

Consumption

WET APPLICATION WITH		
Primer and first layer	Sikadur®-300 or Sikadur® Hex-300	0.8–1.2 kg/m²
Following layers	Sikadur®-300 or Sikadur® Hex-300	0.85–1.0 kg/m²
WET APPLICATION WITH		
Concrete substrate adhesive primer	Sikadur®-330	0.4–0.6 kg/m²
Impregnating or laminating resin	Sikadur®-300 or Sikadur® Hex-300	0.85–1.0 kg/m²

SYSTEM INFORMATION

System structure

The system build-up and configuration as described must be fully complied with and may not be changed.

Concrete substrate adhesive primer	Sikadur®-330 or Sikadur®-300 or Sikadur® Hex-300
Impregnating or laminating resin	Sikadur®-300 or Sikadur® Hex-300
Structural strengthening fabric	SikaWrap®-600 C WV

For detailed information on Sikadur®-330, Sikadur®-300, or Sikadur® Hex-300, together with the resin and fabric application details, please refer to the individual Product Data Sheets and the relevant Method Statement.

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.

FURTHER DOCUMENTATION

Reference must be made to the following Sika® Method Statements:

- 850 41 03 Method Statement SikaWrap® manual wet application

ECOLOGY, HEALTH AND SAFETY

This product is an article as defined in article 3 of regulation (EC) No 1907/2006 (REACH). It contains no substances which are intended to be released from the article under normal or reasonably foreseeable conditions of use. A safety data sheet following article 31 of the same regulation is not needed to bring the product to the market, to transport or to use it. For safe use follow the instructions given in the product data sheet. Based on our current knowledge, this product does not contain SVHC (substances of very high concern) as listed in Annex XIV of the REACH regulation or on the candidate list published by the European Chemicals Agency in concentrations above 0,1 % (w/w).

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Tensile adhesion strength of the substrate must be a minimum of 1.0 N/mm² or as specified in the strengthening design. If necessary, verify this by applying a test area first.
Refer to the relevant SikaWrap® Method Statement for further information.

SUBSTRATE PREPARATION

Clean and prepare concrete to achieve a laitance-free, contaminant-free, open-textured surface.
Refer to the relevant SikaWrap® Method Statement for further information.

APPLICATION

IMPORTANT
Application by trained personnel
The application of this Product must only be carried out by an applicator that is trained or approved by Sika. The applicator must also be experienced in this type of application.
IMPORTANT
Strictly follow installation procedures
Strictly follow installation procedures as defined in Method Statements, application manuals and working instructions which must always be adjusted to the actual site conditions.
IMPORTANT
Do not interchange different system components
SikaWrap® fabrics are coated to ensure maximum bond and durability with the Sikadur® adhesives, impregnating and laminating resins. To maintain and ensure full system compatibility, do not interchange different system components.
1. IMPORTANT Never fold the fabric. Cut the fabric with

special scissors, a razor knife or a box-cutter knife.
2. Apply the SikaWrap fabric using the wet application process. Refer to 850 41 03 Method Statement SikaWrap® manual wet application.

OVERCOATING SIKAWRAP® FABRICS

SikaWrap® fabrics can be overcoated with a cementitious overlay or other coatings for aesthetic or protective purposes. The selection of the overcoating system depends on the exposure and project-specific requirements.

For additional protection from UV light in exposed areas, use one of the following:

- Sikagard®-550 W Elastic
- Sikagard®-675 W ElastoColor
- Sikagard®-680 S Betoncolor
- Sikagard®-5500

LOCAL RESTRICTIONS

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

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