

## PRODUCT DATA SHEET

# SikaWrap® FX-50 C

Carbon fibre cord for structural strengthening, connection and anchoring of SikaWrap® strengthening systems

### DESCRIPTION

SikaWrap® FX-50 C is a unidirectional carbon fibre cord, encased in a plastic envelope, which is used as near surface mounted (NSM) strengthening system and as fibre connector for the anchorage of SikaWrap® fabrics.

### USES

SikaWrap® FX-50 C may only be used by experienced professionals.

- Anchoring SikaWrap® carbon and glass fibre structural fabrics on concrete or masonry
- Connecting SikaWrap® carbon or glass fibre structural fabrics applied on concrete or masonry structures
- Flexible near surface mounted (NSM) strengthening
- Anchored NSM strengthening for cantilevers

### CHARACTERISTICS / ADVANTAGES

- Corrosion resistant
- Durable carbon fibre properties
- Multifunctional use
- Easy to install

### APPROVALS / CERTIFICATES

- IBDiM, National Technical Assessment No. KOT-2019/0361 edition 1, Composite fabrics and plates for concrete strengthening, "Sika® Carbodur® kit for strengthening of concrete bridges"
- ITB, National Technical Assessment No. KOT-2019/0415 edition 1, "Sika® Carbodur® kit with SikaWrap® FX-50 C composite rope for strengthening of concrete elements"
- CSTB, Avis Technique No. 3.3/19-1005\_V1 (annule et remplace No. 3/16-875), Repair and Strengthening of structural elements of constructions with fiber reinforced polymers (FRP), "SikaWrap®"

### PRODUCT INFORMATION

<b>Construction</b>	Unidirectional carbon fibre cord encased in a plastic sleeve
<b>Fibre type</b>	Carbon fibre
<b>Packaging</b>	25 m roll on a plastic reel dispenser
<b>Shelf life</b>	24 months from date of production
<b>Storage conditions</b>	Store in undamaged, original sealed packaging, in dry conditions at temperatures between +5 °C and +35 °C. Protect from direct sunlight.
<b>Dry fibre density</b>	1.82 g/cm <sup>3</sup>
<b>Cross section</b>	≥ 28 mm <sup>2</sup> (based on dry carbon fibre content)
<b>Mass per unit length</b>	≥ 50 g/m (based on dry carbon fibre content)

Dry fibre tensile strength	4 000 N/mm <sup>2</sup>	(ASTM D 4018)
Dry fibre modulus of elasticity in tension	240 000 N/mm <sup>2</sup>	(ASTM D 4018)
Dry fibre elongation at break	≥ 1.6 %	(ASTM D 4018)

## TECHNICAL INFORMATION

Laminate nominal cross section	28 mm <sup>2</sup> (related to fibre cross section) 78 mm <sup>2</sup> (Impregnated / laminated cord with a diameter of ~10mm)	
Laminate tensile strength	~2 000 N/mm <sup>2</sup> (related to fibre cross section)*	(EN 2561)**
	* Impregnating resin: Sikadur®-300, Sikadur®-52 N or Sikadur®-52 LP. Values in longitudinal direction of the fibres. ** Standard adapted to fit sample shape.	
Laminate modulus of elasticity in tension	~230 kN/mm <sup>2</sup> (related to fibre cross section)*	(EN 2561)**
	* Impregnating resin: Sikadur®-300, Sikadur®-52 N or Sikadur®-52 LP. Values in longitudinal direction of the fibres. ** Standard adapted to fit sample shape.	
Laminate elongation at break in tension	0.87 %	(based on EN 2561)
Tensile resistance	718 kN/m	(based on EN 2561)
Tensile stiffness	82.6 MN/m 82.6 kN/m per ‰ elongation	(based on EN 2561)

## SYSTEMS

System structure	Impregnating / laminating resin	Sikadur®-300 or Sikadur®-52 N or Sikadur®-52 LP
	Anchorage resin	Sikadur®-3030 or Sikadur®-330
	Structural strengthening fabric	SikaWrap® carbon or glass fibre fabric

The system structure as described in table must not be changed.  
Refer to the relevant Product Data Sheets and Sika Method Statements.

## APPLICATION INFORMATION

Consumption	Anchor impregnation: 110–150 g/m SikaWrap® fabrics: Please refer to the relevant product data sheet
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## APPLICATION INSTRUCTIONS

### APPLICATION METHOD / TOOLS

Strictly follow installation procedures as defined in method statements, application manuals and working instructions which must always be adjusted to the actual size conditions.

SikaWrap® FX-50 C can be cut with special scissors. Refer to the relevant Sika Method Statement for the installation of SikaWrap® FX and for the impregnating / laminating procedure of the fabrics.

### FURTHER INFORMATION

#### Method Statements

Ref. 850 41 09: Installation of SikaWrap® FX  
Ref. 850 41 02: SikaWrap® manual dry application

Ref. 850 41 03: SikaWrap® manual wet application  
Ref. 850 41 04: SikaWrap® machine wet application

## IMPORTANT CONSIDERATIONS

- SikaWrap® FX-50 C shall only be applied by trained and experienced professionals.
- A specialist structural engineer must be consulted for any structural strengthening design calculation.
- Reference must be made to the notes and limitations mentioned in the Sika Method Statement: Installation of SikaWrap® FX.
- The SikaWrap® products are coated to ensure maximum bond and durability with the Sikadur® adhesives / impregnating / laminating resins. To maintain and ensure full system compatibility, do not interchange different system components.
- The SikaWrap® system 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 protection against UV light in exposed areas use Sikagard®-550 W Elastic, SikaColor®-670 W or Sikagard®-680 S.

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.

## 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

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).

## 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

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### Product Data Sheet

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