Construction

SikaWrap® FX-50C

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

Product Description	SikaWrap® FX-50C is a unidirectional carbon fibre cord, encased in a plastic sleeve, that serves as a fibre connector for the anchorage of SikaWrap fabrics.
Uses	■ Anchoring SikaWrap® carbon and glass fibre fabrics on concrete or masonry ■ Connecting SikaWrap® carbon or glass fibre fabrics through concrete or masonry structures ■ Flexible near surface mounted strengthening (NSM)
Characteristics / Advantages	■ Carbon fibre, corrosion resistant, durable ■ Multifunctional use ■ Easy to install

Product Data

Form

Fibre Type	Carbon fibre
Construction	Unidirectional carbon fibre string encased in a plastic envelope
Packaging	25 m roll on a plastic reel dispenser

Storage

Storage Conditions / Shelf Life	Unlimited, provided there is no exposure to direct sunlight (UV light), in dry conditions and at temperatures of max. 50°C Transportation only in the original packaging, or otherwise adequately protected against any mechanical damage

Technical Data

Weight	≥ 50 g/m (carbon fibre content)
Fibre cross section	≥ 28 mm^2 (based on carbon fibre content)
Fibre Density	1.82 g/cm^3

Mechanical / Physical Properties

Dry Fibre Properties	Values in longitudinal direction of the fibres (ASTM D 4018)		
	Tensile Modulus	Minimum value	240 kN/mm^2
	Tensile strength	Minimum value	4'000 N/mm^2
	Elongation at break		≥ 1.6 % (nominal)

Composite Properties	Values in longitudinal direction of the fibres	
	Impregnating resin	Sikadur®-300, Sikadur®-52
	Tensile Modulus (related to fibre cross section)	230 kN/mm^2
	Tensile strength (related to fibre cross section)	2100 N/mm^2

System Information

System Structure

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

Impregnating / laminating resin: Sikadur®-300, Sikadur®-52 .

Anchorage resin: Sikadur®-330 or Sikadur®-33

Structural strengthening fabric: SikaWrap® carbon or glass fibre fabric

The embedded composite will have a diameter of ca. 10 mm

For detailed information on Sikadur®-330, Sikadur®-300, Sikadur-52 and Sikadur®-33, together with the resin and fabric application details, please refer to the relevant Product Data Sheets and the Information Manual of SikaWrap® manual dry application (Ref. 850 41 02), SikaWrap® manual wet application (Ref. 850 41 03) and Installation of SikaWrap® FX (Ref. 850 41 09).

Application Details

Consumption

Anchor impregnation: 25 – 30 g/100 mm

SikaWrap® fabrics: Please refer to the relevant product data sheet

Substrate Quality

Minimal substrate tensile strength: 1.0 N/mm2 or as specified in the strengthening design.

For further details, see also the Information Manuals for the installation of SikaWrap® FX (Ref. 850 41 09) SikaWrap® manual dry application (Ref. 850 41 02) SikaWrap® manual wet application (Ref. 850 41 03) or SikaWrap® machine wet application (Ref. 850 41 04).

Substrate Preparation

Concrete and masonry:
Substrates must be sound, dry, clean and free from laitance, ice, standing water, grease, oils, old surface treatments or coatings and any loosely adhering particles.

Concrete must be cleaned and prepared to achieve a laitance and contaminant free, open textured surface.

Repairs and levelling:
If carbonised or weak concrete cover has to be removed or levelling of uneven surfaces is needed, the following systems can be applied:

Structural repair materials: Sikadur®-41 epoxy repair mortar, Sikadur®-30 adhesive or the Sika® MonoTop®-412 (horizontal, vertical, overhead) or Sika® MonoTop®-438 (horizontal, top-side) range (cementitious).

(Details on application and limitation see the relevant Product Data Sheets)

For further details, see also the Method Statements of installation of SikaWrap® FX (Ref. 850 41 09), SikaWrap® manual dry application (Ref. 850 41 02) SikaWrap® manual wet application (Ref. 850 41 03) or SikaWrap® machine wet application (Ref. 850 41 04).

Application Instructions

Application Method / Tools

The SikaWrap® FX can be cut with special scissors.

Please refer to the Information Manuals for the installation of SikaWrap® FX (Ref. 850 41 09) for the anchor installation and the Method Statement of SikaWrap® manual wet application (Ref. 850 41 03) or SikaWrap® machine wet application (Ref. 850 41 04) for the impregnating / laminating procedure of the fabrics.

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Notes on Application / Limitations	This product should only be used by trained and experienced professionals. The strengthening application is inherently structural and great care must be taken when choosing suitably experienced contractors. Notes and limitations mentioned in the Information Manual for the installation of SikaWrap® FX (Ref. 850 41 09) must be taken into account. 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 UV light protection in exposed areas use Sikagard®-550 W Elastic, Sikagard® ElastoColor-675 W or Sikagard®-680 S. Please refer to the Information Manuals of SikaWrap® manual dry application (Ref. 850 41 02), SikaWrap® manual wet application (Ref. 850 41 03) or SikaWrap® machine wet application (Ref. 850 41 04) for further information, guidelines and limitations.
Value Base	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.
Health and Safety Information	For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet 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.

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