

## PRODUCT DATA SHEET

## SikaWrap® FX-50 C

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

## PRODUCT DESCRIPTION

SikaWrap® FX-50 C is a unidirectional structural carbon fibre rope material, packaged in a plastic sleeve. It is used to anchor or connect SikaWrap carbon and glass fibre structural fabrics.

## USES

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

The Product is used to:

- Anchor SikaWrap® carbon and glass fibre fabrics on concrete or masonry
- Connect SikaWrap® carbon or glass fibre fabrics through concrete or masonry structures
- Structurally strengthen concrete or masonry as a flexible near surface mounted strengthening (NSM) system

## CHARACTERISTICS / ADVANTAGES

- Versatile and customizable to project-specific anchor diameter
- Prevents delamination of SikaWrap® fabrics at the edges in shear strengthening applications
- Suitable for installation in complex or difficult access locations
- Multifunctional use

## ENVIRONMENTAL INFORMATION

- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Material Ingredients under LEED® v4

## APPROVALS / STANDARDS

Used in systems that follow American Concrete Institute (ACI) 440 and Code and AASHTO Guide for the Design and Construction of Externally Bonded FRP Systems for Strengthening Concrete / Unreinforced Masonry Structures.

## PRODUCT INFORMATION

|                    |                                                                       |                                                       |
|--------------------|-----------------------------------------------------------------------|-------------------------------------------------------|
| Construction       | Fibre orientation                                                     | 0° (longitudinal, unidirectional) in a plastic sleeve |
|                    | Warp (longitudinal)                                                   | Black carbon fibre                                    |
| Packaging          | Roll length                                                           | 82ft (25m) roll on a plastic reel dispenser in a box  |
| Shelf Life         | 5 years from date of production                                       |                                                       |
| Storage Conditions | The Product must be stored in original, unopened and undamaged sealed |                                                       |

packaging in dry conditions at temperatures between 40°F (+5 °C) and 95°F (+35 °C). Protect the Product from direct sunlight.

|                 |               |                    |
|-----------------|---------------|--------------------|
| Mass per length | Single bundle | 0.04oz/in (50 g/m) |
|-----------------|---------------|--------------------|

## TECHNICAL INFORMATION

|                      |                     |                                                         |
|----------------------|---------------------|---------------------------------------------------------|
| Dry Fiber Properties | Tensile Strength    | 580 x 10 <sup>6</sup> psi (4000 MPa)                    |
|                      | Tensile Modulus     | 3,500 x 10 <sup>6</sup> psi (2.4 x 10 <sup>6</sup> MPa) |
|                      | Elongation at break | >1.6%                                                   |

|                  |      |                                                    |
|------------------|------|----------------------------------------------------|
| Tensile Strength | Mean | 304 x 10 <sup>6</sup> psi (2000n/mm <sup>2</sup> ) |
|------------------|------|----------------------------------------------------|

|                 |      |                                        |
|-----------------|------|----------------------------------------|
| Tensile Modulus | Mean | 3,040 x 10 <sup>6</sup> psi (2100 MPa) |
|-----------------|------|----------------------------------------|

|                      |      |      |
|----------------------|------|------|
| Tensile % Elongation | Mean | 0.9% |
|----------------------|------|------|

All values refer to design nominal thickness and design nominal cross section.

|                              |                                                                                   |                      |                                |
|------------------------------|-----------------------------------------------------------------------------------|----------------------|--------------------------------|
| Design nominal cross section | Number of rope bundles and corresponding to dry fiber anchor areas and diameters: |                      |                                |
|                              | # of Bunles                                                                       | Anchor Diameter (in) | Anchor Area (in <sup>2</sup> ) |
|                              | 1                                                                                 | 3/8                  | 0.11                           |
|                              | 2                                                                                 | 1/2                  | 0.20                           |
|                              | 3                                                                                 | 5/8                  | 0.31                           |
|                              | 4                                                                                 | 3/4                  | 0.44                           |
|                              | 5                                                                                 | 7/8                  | 0.6                            |
|                              | 7                                                                                 | 1                    | 0.79                           |
|                              | 8                                                                                 | 1 1/8                | 0.99                           |

The diameter of the drilled hole shall be between 0.25 in. and 0.375 in. larger than the anchor diameter.

## APPLICATION INFORMATION

|          |                        |                                           |
|----------|------------------------|-------------------------------------------|
| Coverage | Resin for impregnation | 0.035 oz/in (25g/m) to 0.04 oz/in (30g/m) |
|----------|------------------------|-------------------------------------------|

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

## SYSTEM INFORMATION

|                  |                                          |                                                             |
|------------------|------------------------------------------|-------------------------------------------------------------|
| System Structure | Impregnating or laminating resin options | Sikadur® Hex-300                                            |
|                  | Anchorage resin options                  | Sikadur®-330<br>Sika AnchorFix®-3001<br>Sika AnchorFix®-500 |
|                  | Structural strengthening fabric          | SikaWrap® carbon or glass fibre fabric                      |

For detailed information on Sikadur®-330 or Sikadur®-300/Hex 300 and SikaWrap® application details, please refer to the relevant Product Data Sheets and the Method Statements of SikaWrap® manual dry application, SikaWrap® manual wet application, and SikaWrap® FX installation manual.

## BASIS OF PRODUCT DATA

Results may differ based upon statistical variations

depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

## ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

## APPLICATION INSTRUCTIONS

### IMPORTANT

The application of this Product must be carried out by an applicator that is trained by Sika. The applicator must also be experienced in this type of application.

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.

### SUBSTRATE PREPERATION

The diameter and embedment depth of the anchor is to be specified by the engineer. The diameter of the drilled hole may be 1/8in to 3/8in larger than the specified anchor diameter. The depth of the hole may be at least 1/4in deeper than the specified embedment depth. The edges of the hole must be rounded to a radius of 3/4in to avoid any fiber damage to the FX during installation. The drilled hole should be thoroughly cleaned with the blow-out tool and the round brush, alternating the two tools at least three times.

### APPLICATION METHOD

Cut the SikaWrap® FX to size and tie all fiber anchor bundles together on one end with a zip-tie and cut off the free end of the tie. If the anchor material is still held together by the plastic sleeve, remove it. Saturate SikaWrap® FX-50 C material with Sikadur® Hex 300. Squeeze out any air and excess resin. When multiple fiber anchors are to be installed, consult the PDS for Sikadur® Hex-300 to determine working time of the saturated material. The sequence of the SikaWrap® and anchor installation is to be specified by the engineer. The fiber anchor may be installed while the fabric is wet or the following day. Fill the drilled hole approximately 3/4 of the anchor depth with Sika Anchorfix®3001. If the hole goes through the substrate, fill the hole from both sides. Insert a metal shaft through the length of the anchor, with the tip wedged on the zip-tie. Insert the fiber anchor into the hole and remove the metal shaft once anchor is secured. Fan the anchor material on top of the SikaWrap® fabric as directed in the project drawings. Add additional Sika Anchorfix® resin around the hole if needed. Prime and cover the anchor material area with Sikadur® -330 in cases where a second layer is required to cover/patch the FRP anchors.

### TOP COAT

SikaWrap® fabrics can be over coated for protective or

aesthetic 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 Sika Thorocoat®-200 or Sika Thorocoat®-400.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at [usa.sika.com](http://usa.sika.com) or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

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Product Data Sheet

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November 2025, Version 05.01

020206020040000008

SikaWrapFX-50C-en-US-(11-2025)-5-1.pdf

