

FX 50

CARBON FIBRE ANCHOR ROPE FOR CFRP SYSTEM ANCHORING AND CONNECTION

50 g/m

MASS PER LENGTH

2,400 MPa

BUNDLE TS (MEAN)

210 GPa

BUNDLE MODULUS (MEAN)

5,500 MPa

DRY FIBRE TS

DESCRIPTION

FX 50 is a unidirectional carbon fibre rope supplied in a protective plastic sleeve. It is designed to be field-saturated with FIDSTRONG FSE322 saturating resin, creating a flexible anchor that bonds both into a drilled substrate hole and onto the FRP surface. By fanning out the protruding end, it creates a robust mechanical and chemical bond between the FRP strengthening system and the structural element — preventing delamination and transferring anchorage forces efficiently.

INTENDED USES

- Termination zone anchorage of FIDSTRONG FSC carbon fibre fabric systems on concrete and masonry
- Shear strengthening anchor — connecting U-wrap and L-wrap fabrics through substrate elements
- Near-Surface Mounted (NSM) flexible reinforcement in grooves or slits
- Prevention of fabric delamination at curtailment points and re-entrant corners
- Through-element connection of FRP fabric layers (equivalent to mechanical through-bolting)

CHARACTERISTICS

- Field-customisable diameter — multiple rope bundles can be combined to achieve the design anchor cross-section
- Corrosion-free carbon fibre — eliminates galvanic corrosion risk of traditional steel anchors
- Flexible before resin saturation — easy to install in restricted access locations and complex geometries
- Supplied in protective sleeve — maintains clean fibres for consistent saturation quality

PRODUCT INFORMATION

PROPERTY	VALUE
TECHNICAL PROPERTIES	
DRY FIBRE PROPERTIES	
Tensile Strength	5,500 MPa
Elastic Modulus	240 GPa
Elongation at Break	1.7 %
SATURATED BUNDLE PROPERTIES (MEAN VALUES)	
Tensile Strength (mean)	2,400 MPa
Elastic Modulus (mean)	210 GPa
Elongation at Break (mean)	0.9 %

COMPATIBLE SYSTEM PRODUCTS

CODE	FUNCTION	NOTES
FSE322	Saturating resin	Used to saturate the FX 50 rope before and during installation
FSC series	Carbon fibre fabrics	Fanned anchor fibres are integrated into the FSC fabric lay-up
FSFIX390 / FSFIX360	Hole injection resin	Injected into the drilled hole to bond the embedded anchor section

APPLICATION INSTRUCTIONS

Step 1 — Substrate and Hole Preparation

- Drill holes to the specified diameter and depth. Round all hole edges to ≥ 20 mm radius to prevent fibre abrasion. Clean holes using a blow-out pump and round brush, alternating at least three times; do not use water.

Step 2 — Anchor Preparation

- Cut FX 50 rope to the required length (embedment depth + fanning length). Secure the insertion end with a cable tie to prevent fibre separation. Remove the protective sleeve from the fan section only. Saturate the rope thoroughly with FSE322 resin, working resin into all fibres and squeezing out excess. The rope should be fully wet-out with no dry fibre areas visible.

Step 3 — Installation

- Inject FSFIX resin into the hole, filling approximately 2/3 to 3/4 depth. Using a metal rod inserted into the fibre core, push the saturated anchor to the specified embedment depth. Fan out the protruding fibres onto the substrate at approximately 30° from the hole axis. Press the fanned fibres firmly into the FSE322-coated surface using a laminating roller, ensuring full bond and no air pockets. Lay the FRP fabric over the fanned anchor and continue normal lay-up.

LIMITATIONS

- For use by FIDSTRONG-trained specialists only. Incorrect installation voids all warranty and may compromise structural safety.
- Carbon fibres are electrically conductive — protect against galvanic corrosion where the anchor contacts steel reinforcement.
- Anchor diameter and embedment depth must be determined by a licensed professional engineer. Do not substitute bundle size without re-engineering.
- Protect the completed FRP system from UV radiation. Apply a UV-stable top-coat or cementitious protective render.

HEALTH & SAFETY

NOTE

Wear nitrile gloves, safety goggles, and a dust mask when cutting and handling carbon fibre. Carbon fibre fragments and dust are skin, eye, and respiratory irritants. Refer to the current SDS for full guidance. This TDS does not replace the SDS.

LEGAL NOTES

The information and recommendations in this document are given in good faith based on current knowledge and experience of the products when properly stored, handled, and applied under normal conditions. Differences in materials, substrates, and site conditions mean that no warranty in respect of merchantability or fitness for a particular purpose can be inferred from this information. The information does not relieve the user of the responsibility of testing products for their intended application. All orders are accepted subject to our current terms of sale and delivery. Refer to the most recent TDS at www.fidstrong.com.