

FISFIX 450

HEAVY-DUTY ANCHORING EPOXY FOR HIGH-LOAD STRUCTURAL CONNECTIONS

100 MPa

COMPRESSIVE STRENGTH

2 : 1

MIX RATIO (BY VOLUME)

-20 / +40 °C

SERVICE TEMPERATURE

450 mL

CARTRIDGE VOLUME

DESCRIPTION

FISFIX 450 is a two-component, heavy-duty epoxy-based chemical anchoring adhesive supplied in a 450 mL side-by-side cartridge with integrated static mixer. Engineered for high-load structural connections, FISFIX 450 delivers 100 MPa compressive strength and superior bond performance in post-installed rebar, anchor bolt, and structural dowelling applications in concrete, masonry, and natural stone substrates.

INTENDED USES

- Anchoring of all grades of rebars and threaded rods in concrete, masonry, natural stone, and solid or hollow bricks and blocks
- Grouting horizontally and vertically where rapid setting and fast turnaround times are needed
- Applications in cooler temperatures and inclement conditions, including -10 °C and wet substrates
- External environments subject to dynamic loads and vibrations
- Anchoring structural steel to concrete — safety barriers, canopies, signs, handrails, racking, machinery, masonry supports, stadium seats, reinforcing and starter bars

CHARACTERISTICS

- High compressive strength (100 MPa) — reliable load transfer for structural anchorages
- Thixotropic consistency (index ≥ 4.2) — non-sag, may be applied overhead
- 2 : 1 mix ratio by volume — dispensed and mixed automatically via static mixing nozzle
- Suitable for cracked and uncracked concrete
- Styrene-free, VOC-compliant and low odour
- Sets up in dry or damp drill holes
- Reduced edge and spacing values allowing critical applications
- Flexible embedment depths from 8d to 12d
- Resistant to a wide range of chemicals

TECHNICAL PROPERTIES

PROPERTY	VALUE
PROCESSING	
Packaging	450 mL side-by-side cartridge, 20 per case
Mix Ratio (A : B)	2 : 1 (by volume)
Colour (mixed)	Grey / Pink
Service Temperature	-20 / +40 °C

PROPERTY	VALUE
Shelf Life	12 months (unopened, +5 to +25 °C)
Viscosity (mixed)	18 Pa·s
Density (cured)	1.5 g/cm ³
MECHANICAL (CURED)	
Compressive Strength	≥ 100 MPa
Splitting Tensile Strength	≥ 20 MPa
Tensile Modulus	≥ 3,500 MPa
Elongation at Break	≥ 1.7 %
Flexural Strength	≥ 100 MPa
Thixotropy Index	≥ 4.2
Sagging Mobility (25 °C)	≤ 1.4 mm
Heat Distortion Temperature	≥ 66 °C
BOND & SHEAR	
Steel-to-Steel Tensile Shear	≥ 16 MPa
Bond to C30 Concrete (Φ25, L=150 mm)	≥ 11 MPa
Bond to C60 Concrete (Φ25, L=125 mm)	≥ 18 MPa
Steel-to-Steel T-Peel Stripping	≤ 25 mm
Non-volatile Content	≥ 99.5 %

WORKING TIME & CURE TIME

SEASON (TEMPERATURE)	WORKING TIME	FULL CURE
Winter (10 °C)	40–120 min	48 h
Spring & Autumn (23 °C)	40 min	12 h
Summer (30 °C)	30 min	6 h

Working time = open time before gel. Full cure = minimum time before loading. Times are approximate and assume dry drill hole. Double cure time for water-saturated holes.

LOAD CAPACITY — GRADE 40/60 REBAR (C30 CONCRETE, UNCRACKED)

BAR Ø (MM)	HOLE Ø (MM)	MIN DEPTH (MM)	EPOXY (ML)	GRADE 40 (KN)	GRADE 60 (KN)
8	12	≥100	7.5	14.1	20.8
10	14	≥100	10.3	22.0	32.6
12	15	≥120	14.1	31.7	46.9
16	20	≥160	33.5	56.3	83.4

BAR Ø (MM)	HOLE Ø (MM)	MIN DEPTH (MM)	EPOXY (ML)	GRADE 40 (KN)	GRADE 60 (KN)
20	25	≥200	65.4	87.9	130.3
25	32	≥250	134.0	137.4	203.6
28	35	≥280	179.5	172.3	255.4
32	40	≥320	267.9	225.1	333.6

Grade 40 = 280 MPa yield. Grade 60 = 415 MPa yield. Values at rebar yield — no safety factor applied.

LOAD CAPACITY — THREADED ROD (C30 CONCRETE, UNCRACKED)

ROD Ø (MM)	HOLE Ø (MM)	MIN DEPTH (MM)	EPOXY (ML)	GRADE 5.8 (KN)	GRADE 8.8 (KN)
8	12	≥100	7.5	20.1	32.2
10	14	≥100	10.3	31.4	50.2
12	14	≥120	12.3	45.2	72.3
16	18	≥160	27.1	80.4	128.6
20	24	≥200	60.3	125.6	201.0
22	25	≥220	72.0	152.0	243.2
24	28	≥240	98.5	180.9	289.4
27	30	≥270	127.2	228.9	366.2
30	35	≥300	192.3	282.6	452.2
36	42	≥360	332.3	406.9	651.1
39	45	≥390	413.3	477.6	764.2

Grade 5.8 = 400 MPa yield. Grade 8.8 = 640 MPa yield. Epoxy usage based on 2/3 drill hole volume.

INSTALLATION PROCEDURE

Step 1 — Drill Hole

- Drill hole to specified diameter and depth using rotary percussion drill and carbide-tipped bit.

Step 2 — Clean Hole

- Blow out debris with compressed air (≥ 6 bar, oil/water-free). Brush with steel brush. Repeat blow-brush-blow cycle (minimum 2 cycles).

Step 3 — Prepare Cartridge

- Attach static mixing nozzle. Dispense and discard initial material until uniform colour (no streaking) is achieved.

Step 4 — Fill Hole

- Insert nozzle to back of hole. Fill from bottom up to approximately ½ to ¾ full. Withdraw nozzle steadily.

Step 5 — Insert Anchor

- Insert rebar or threaded rod (clean, oil-free) with slow rotating motion. Excess resin should be expelled evenly. Remove excess before it sets.

Step 6 — Curing

- Do not disturb anchor during curing period. Tighten nut to recommended torque — do not overtighten.

CLEAN UP

Collect with absorbent material. Dispose of in accordance with local regulations. Uncured material can be removed with epoxy cleaner. Cured material can only be removed mechanically.

LIMITATIONS

- FISFIX 450 is not intended as a cosmetic or decorative material; staining may occur on porous substrates.
- Pre-condition material to above 10 °C for easier dispensing with manual equipment.
- Minimum concrete age: 28 days (depending on curing conditions).
- Do not thin with solvents — solvents will prevent proper cure.
- FISFIX 450 must only be applied on or into substrates when they are frost-free.

STORAGE

Store in original sealed cartridge at +5 °C to +25 °C. Protect from direct sunlight. Shelf life 12 months from date of manufacture. Pre-condition to 23 °C for easier dispensing.

COMPATIBLE SYSTEM PRODUCTS

CODE	FUNCTION	NOTES
FISFIX 360	Chemical anchoring epoxy	5 : 1 mix, 80 MPa compressive, 360 mL
FISFIX 390	Chemical anchoring epoxy	3 : 1 mix, 90 MPa compressive, 390 mL
FISFIX 585	Chemical anchoring epoxy	3 : 1 mix, 90 MPa compressive, 585 mL
FISFIX 650	High-load anchoring epoxy	1 : 1 mix, 110 MPa compressive, 650 mL
FCA 10/450	CFRP anchor	Ø10 × 450 mm for FRP system termination
FX 50	Carbon fiber anchor rope	For FRP U-wrap termination

HEALTH & SAFETY

NOTE

Refer to the current Safety Data Sheet (SDS) for handling, storage, and disposal. Wear nitrile gloves, safety goggles, and respiratory protection. Avoid skin contact with uncured resin. 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.