FSE502

EPOXY LEVELLING AND SURFACE REPAIR ADHESIVE FOR SUBSTRATE PREPARATION

35 MPa	60 MPa	2 : 1	40 min
TENSILE STRENGTH	SHEAR STRENGTH	MIX RATIO (BY WEIGHT)	POT LIFE (23 °C)

DESCRIPTION

FSE502 is a two-component epoxy repair and levelling adhesive for restoring and regularising concrete and masonry substrate surfaces prior to structural strengthening. It fills surface voids, bug-holes, honeycombing, and chipped areas, creating a smooth, load-bearing surface profile that maximises bond area and adhesive contact for subsequently applied FIDSTRONG carbon fibre systems.

INTENDED USES

- Levelling and filling of surface voids, blow-holes, honeycombing, and chipped-out concrete prior to FSE322 or FSE362 application
- Restoration of substrate surface profile where irregularities exceed the permitted tolerance for direct adhesive bonding (> 0.5 mm for plate systems; > 1 mm for fabric systems)
- Sealing of crack surfaces prior to FSE523 pressure injection
- Local surface repair of damaged or spalled structural members

CHARACTERISTICS

- High compressive strength (90 MPa) and shear strength (60 MPa) — load-bearing repair without weak-point risk
- Moisture tolerant — adheres reliably to damp concrete surfaces
- Easy trowel consistency — flows into voids and can be feathered to zero edge thickness
- Fast-setting — touch-dry in 1.5 h at 23 °C; allows rapid return to subsequent process steps
- Solvent-free, low VOC — suitable for enclosed environments

PRODUCT INFORMATION

PROPERTY	VALUE
Appearance	Component A: transparent; Component B: brown; Mixed: yellow
Mix Ratio	A : B = 2 : 1 by weight
Packaging	20 kg (A) + 10 kg (B) per kit, or customised packaging
Storage	Dry, away from direct sunlight, +4 °C to +32 °C
Shelf Life	18 months in original, unopened packaging

TECHNICAL PROPERTIES

MIXED / CURED RESIN — TESTED AT 23 °C / 50 % RH UNLESS STATED

PROPERTY	TEST METHOD	VALUE

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HANDLING (MIXED RESIN)		
Pot Life (500 g mass)	—	40 min
Touch-Dry Time	—	1.5 h
Full Cure	—	7 days (23 °C)
Service Temperature	—	+5 °C to +40 °C
MECHANICAL (CURED, 7 DAYS)		
Tensile Strength	ASTM D638	**35 MPa**
Shear Strength	ASTM D638	**60 MPa**
Compressive Strength	ASTM D695	90 MPa

COMPATIBLE SYSTEM PRODUCTS

CODE	FUNCTION	NOTES
FSE302	Substrate primer	Applied after FSE502 cure; enhances adhesion of structural epoxy layers
FSE322	Saturating resin	Applied after surface levelling and priming in fabric wet lay-up systems
FSE362	Plate bonding adhesive	Applied after surface levelling and priming in plate bonding systems
FSE523	Crack injection resin	FSE502 used to seal crack surface before FSE523 pressure injection

APPLICATION INSTRUCTIONS

Step 1 — Surface Preparation

- Remove all loose material, dust, oil, and laitance from the repair area by grinding or wire brushing. Blow clean with oil-free compressed air.
- Pre-wet the repair area with clean water if the substrate is very dry and absorbent; allow surface moisture to become matt-dry before application.

Step 2 — Mixing

- Combine Component A and Component B at 2 : 1 by weight. Mix with a low-speed paddle mixer for 3 min until a uniform colour is achieved throughout. Use within the pot life.

Step 3 — Application

- Apply mixed FSE502 into voids and over surface irregularities using a stiff-blade trowel or spatula. Work material firmly into all recesses and blow-holes to eliminate air voids.
- Strike off flush with the surrounding surface and feather edges to zero thickness. For deeper repairs (> 5 mm), build up in layers, allowing each layer to become tack-free before applying the next.

Step 4 — Curing and Subsequent Work

- Allow FSE502 to cure fully (minimum 24 h at 23 °C) before priming or applying structural adhesive layers. Protect from rain and traffic during cure.

LIMITATIONS

- Application temperature: +5 °C to +35 °C (substrate and ambient).
- Not for use as a structural adhesive or for filling load-bearing voids deeper than 20 mm without engineering approval.
- All structural design must be prepared and certified by a licensed professional engineer.

HEALTH & SAFETY

NOTE

Refer to the current Safety Data Sheet (SDS) for handling, storage, and disposal. Wear chemical-resistant gloves and safety goggles. Avoid skin and eye contact with uncured epoxy. This TDS does not replace the SDS.

LEGAL NOTES