

TOPGROUT EP 513

Low Viscosity Epoxy Injection Resin for Structural Crack Repair

Description

Topgrout EP 513 is a two-component, solvent-free, low-viscosity epoxy injection resin specifically formulated for the sealing and structural repair of fine cracks in concrete.

Upon curing, the material develops a high-strength, rigid bond that restores the structural integrity of cracked concrete elements, effectively re-establishing monolithic behavior.

The product is supplied in pre-measured dual component packaging and is suitable for use with pressure injection systems, including pump and cartridge applications.

Typical Applications

Topgrout EP 513 is designed for:

Structural Applications

- Injection repair of static cracks in reinforced concrete
- Structural bonding of cracked beams, slabs, columns, and walls
- Rehabilitation of precast and cast-in-situ concrete elements

General & Non-Structural Applications

- Surface sealing of cracks
- Grouting of anchor bolts and dowel bars
- Crack repair in:
 - Roof slabs
 - Podium decks
 - Basement slabs
 - Parking structures

Advantages

- Low viscosity (~190 cps) for excellent penetration into fine cracks
- High compressive and flexural strength
- Excellent adhesion to dry and damp concrete
- Non-shrink and solvent-free system
- Restores structural integrity and load transfer

- Suitable for precision injection works
- Easy to apply using standard injection equipment
- Long-term durability with strong chemical resistance

Technical Data

Product Properties

Property	Value
Appearance	Amber brown liquid
Components	2-part epoxy system
Mixing Ratio (A:B)	2 : 1 (by weight)
Density (Mixed)	~1.05 – 1.10 g/cm ³
Viscosity (Mixed)	~190 cps
Pot Life @ 25°C	~30 minutes
Shelf Life	12 months

Mechanical Properties

Property	Value
Compressive Strength	≥ 80 N/mm ²
Flexural Strength	≥ 95 N/mm ²
Tensile Modulus	~32 N/mm ²
Bond Strength	Excellent (concrete substrate)

Application Parameters

Parameter	Recommendation
Substrate Condition	Dry or damp
Injection Pressure	0.2 – 0.5 MPa (depending on crack width)
Crack Width	≥ 0.1 mm
Injection Spacing	200 – 500 mm
Application Temperature	10°C – 35°C

Application Instructions

Surface Preparation

- Crack must be clean, free from dust, grease, oil, laitance, and loose particles
- Use compressed air to clean cracks thoroughly
- Install injection packers along crack line
- Seal surface using epoxy paste (e.g., Topgrout EA 512)

Mixing

- Mix Part A and Part B at 2:1 ratio
- Use slow-speed mixer (300–500 rpm)
- Mix for 2–3 minutes until uniform

Injection Procedure

1. Start injection from the lowest point (vertical cracks)
2. Inject under controlled pressure
3. Continue until resin flows from adjacent packer
4. Seal injected port and move sequentially
5. Complete full crack line injection

Post-treatment

- Allow curing (typically 24 hours at 25°C)
- Remove packers
- Grind off surface seal if required

Cleaning

- Clean tools immediately using epoxy thinner or solvent
- Hardened material must be removed mechanically

Packaging

- 3 kg per set (pre-measured components)

Storage & Shelf Life

- Store in dry, covered area
- Protect from direct sunlight and moisture
- Shelf life: 12 months in unopened packaging

Health & Safety

- Avoid contact with skin and eyes
- Do not ingest
- Use PPE: gloves, goggles, protective clothing
- Ensure adequate ventilation
- Refer to MSDS for full safety details

Limitations

- Not suitable for active leaking cracks (use PU injection instead)
- Not flexible – for moving cracks, use elastomeric system
- Avoid applications below 10°C or above 35°C

System Compatibility

- Topgrout EA 512 for surface sealing adhesive
- Topgrout PU Series for active water leakage
- Topseal Waterproofing Systems for overall protection

Quality Assurance

Topgrout EP 513 is manufactured under strict quality control to ensure consistent performance and compliance with internal formulation standards.

Technical Support

Topkrete offers a technical support package to specifies, end-users and contractors, as well as on site technical assistance.

Additional Information

Topkrete manufacturers and offers a wide range of complementary products which includes waterstop, waterproofing, products, grouts, anchors, specialized flooring products. In addition, a wide range of products formulated for repair and refurbishment of spelled concrete are available.

Warranty

Topkrete Sdn Bhd warrants that the products manufactured by it shall be free from material defects and will conform to formulation standards and contain all components in their proper proportion. Should any of the products be proven defective, the liability to TOPKRETE SDN BHD shall be limited to replacement of the material proven to be defective, and TOPKRETE SDN BHD shall in no case be liable otherwise or for incidental or consequential damages. **TOPKRETE SDN BHD MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED.** User shall determine the suitability of the product for its intended use and assume all risks and liability in connection therewith.

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