

High strength epoxy grout and injection resin

Uses

Provides a free flowing resin, for use where physical properties and chemical resistance of the hardened grout are of utmost importance. It can be used for grouting applications as well as injection of static and structural cracks. It is suitable for a wide range of heavy duty applications including:

- Provides a free flowing resin grout
- Static/structural cracks injection
- Base plate grouting in dynamic load situations such as turbines and other reciprocating machinery
- Heavy industrial applications in steelworks, refineries chemical plants and electroplating works
- Rail track applications, to support heavy cranes, or on transporter rails

Advantages

- **Excellent durability** - high compressive, flexural and tensile strengths ensure a long working life
- **Cost effective** - high early strength gain promotes minimum downtime and early commissioning of plant
- **User friendly** - simple, full pack mixing to ensure that the performance characteristics are achieved
- **Versatile** - suitable for a wide range of loading situations including repetitive dynamic loads
- **Excellent in service performance** - non-shrink capability ensure full surface to surface contact
- **Non-shrink** - ensures complete surfaces contact and bond, also ensures that it will resist hydrostatic pressure and block penetration of deleterious substances

Description

Conbextra EP10 is a solvent free epoxy low viscosity resin that is designed to be used for grouting applications of gap widths from 0.25mm up to 10mm, as well as, for injection applications of static/structural cracks in concrete and masonry of crack widths between 0.05mm and 3mm.

Due to its low viscosity, Conbextra EP10 penetrates deeply into cracks and cavities to form a permanent seal with high strength properties.

It is an all liquid system consisting of base and hardener; the components are supplied in the correct mix proportions designed for whole pack mixing on site.

Specification

Where shown on the contract documents, the epoxy resin shall be Conbextra EP10 supplied by Fosroc. It shall provide good general chemical resistance, and a 7 day compressive strength of at least 93 N/mm².

Properties

Pot life:	60 minutes at 20°C 15 minutes at 40°C
Density:	Approx. 1060 kg/m ³
Tensile strength:	30 N/mm ² at 7 days
Flexural strength:	55 N/mm ² at 7 days
Compressive strength:	55 N/mm ² at 1 day 68 N/mm ² at 3 days 93 N/mm ² at 7 days
Modulus of elasticity: (ASTM C580 7 days)	16 KN/mm ²
Viscosity:	250 Cps at 20°C 100 Cps at 35°C

Instructions for use

Under-plate grouting applications

Preparation

The unrestrained surface area of the grout must be kept to a minimum. Generally, the gap between the perimeter formwork and the plate edge should not exceed 75 mm on the pouring side and 25 mm on the opposite side. Formwork on the flank sides should be kept tight to the plate edge. Air pressure relief holes should be provided to allow venting of any isolated high spots.

Formwork

The formwork should be constructed to be leak proof as Conbextra EP10 is a free flow grout. This can be achieved by using foam rubber strip or mastic sealant beneath the constructed formwork and between joints.

For free flow grout conditions, it is essential to provide a hydrostatic head of grout. To achieve this a feeding hopper should be used - please consult your local Fosroc office for more details.

Foundation surface

This must be free from oil, grease, or any loosely adherent material. If the concrete surface is defective or has laitance, it must be cut back to a sound base. Bolt holes or fixing pockets must be blown clean of any dirt or debris.

Base plate

If delay is likely before placing steel base plates, it is recommended that the underside and edge are coated with Nitoprime 28 to prevent rust formation and ensure bonding with the Conbextra EP10 grout. All metal surfaces should be cleaned to a bright finish in accordance with Swedish Standard SA 2½ or equal. Nitoprime 28 can be applied directly onto newly cleaned steel surfaces even if they are damp.

Mixing

The entire contents of the hardener can should be poured into the base container and mixed for 2 - 3 minutes or until uniform colour is achieved. Once mixed, the material must be used within the specified pot life (see under Properties). After this time, unused material will have stiffened and should be discarded.

Note: Immediately prior to placement, all surfaces must be dry.

Placing

Ensure that the grout can be placed within its pot life. Continuous grout flow is essential. Sufficient grout must be available prior to starting and the time taken to pour a batch must be regulated to the time taken to prepare the next one. Pouring should be from one side of the void to eliminate air entrapment. The hydrostatic head must be maintained at all times so that a continuous grout front is achieved.

Crack injection applications

Fixing Injection Packers

The injection packers shall be inserted into pre-drilled holes at intervals along the length of each crack. The distance between each packer will depend upon the width and depth of the crack.

Spacing shall be close enough to ensure that the resin will penetrate along the crack to the next point of injection. The surface of the cracks between the packers shall be sealed with a band of Nitomortar TC2000, 30 to 40mm wide and 2 to 3 mm thick. Both sides of any cracks which go all the way through a wall or slab shall be sealed in this way. In the case of a wall or slab cracked all the way through, packers shall be located on both sides with those at the back placed at midway points between those at the front.

The Nitomortar TC2000 shall be allowed to cure for 8 hours at 35°C. At low ambient temperatures (5°C to 12°C) the curing time will be extended and the applicator shall ensure that the surface sealant has adequately cured prior to continuing. One end of the injection hose shall be attached to the lowest packer on vertical cracks or to either end of the horizontal cracks.

Resin Application

Thoroughly mix the entire hardener and base resin contents until the liquid becomes clear.

Conbextra EP10 should be used with standard injection equipment having closed containers. The injection pressure should be at least 0.4N/mm² (4 bar).

Only mix sufficient resin that can be used within the pot life of the material.

Following completion of the injection works the injection system shall be allowed to cure for 24 hours and shall be left undisturbed for this time.

Final Repair

Remove the packers and make good any holes or voids with Nitomortar TC2000 and allow to cure. The Nitomortar TC2000 can be ground off or softened with a blow lamp and peeled off. Do not allow to burn.

Application in Horizontal cracks

In case of horizontal cracks in excess of 2mm Conbextra EP10 can be applied through gravity flow, without the use of injection packers. However such application need to be verified for suitability through a site trial.

Cleaning

All tools and equipment should be cleaned immediately after use with Fosroc Solvent 102*.

Hot weather working

Whilst the performance of Conbextra EP10 at elevated temperatures is assured, application under such conditions can sometimes be difficult. It is therefore suggested that, for temperatures above 35°C, the following guidelines are used:

- (i) Store unmixed materials in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight.
- (ii) Keep mixing and placing equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.
- (iii) Try to eliminate application in the middle of the day, and certainly avoid application in direct sunlight.
- (iv) Ensure that there are sufficient operatives available to complete application within the material's pot life.

Limitations

Grouts should not be placed in any unrestrained situation, i.e. base plate plinths, etc. Failure to comply may lead to crack development in the grout.

Estimating

Supply

Conbextra EP10:	1.5 litre packs
Nitoprime 28:	1 and 5 kg packs
Fosroc Solvent 102:	4 litres packs

Coverage

Nitoprime 28:	6 to 8 m ² per litre
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Storage

When stored in warehouse conditions below 35°C, Conbextra EP10 will have a shelf life of 12 months.

Precautions

Health and Safety

Some people are sensitive to epoxy resin so gloves and a barrier cream such as Kerodex 71, Rozalex 9, Debba-Wet Work or similar should be used when handling these products. If contact with the resin occurs, it must be removed before it hardens with a resin removing cream such as Kerocleanse 22 or Rozalex 42. Follow by washing with soap and water. Do not use Solvent. The use of goggles is recommended but should accidental eye contamination occur, wash thoroughly with plenty of clean water and seek medical treatment immediately.

Fire

Nitoprime 28 and Fosroc Solvent 102 are flammable

Flash points

Nitoprime 28:	27°C
Fosroc Solvent 102:	33°C

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