

# Conbextra EP75

## High strength, epoxy resin grout

### Uses

Provides a free flowing grout, for use where physical properties and chemical resistance of the hardened grout are of utmost importance. It is suitable for a wide range of heavy duty applications including :

- Underplate grouting to substantial structural elements.
- 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.
- Structural infill where very high strength is required.
- Rail track applications, to support heavy cranes, or on transporter rails.
- Piletop encapsulation resin system

### 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 ensures full surface to surface contact.
- Ensures piletop integrity as part of a waterproofing system

### Description

Conbextra EP75 is a solvent free epoxy resin grout designed for grouting of gap widths of 10 to 75 mm. It is supplied as a three component system consisting of base, hardener and specially graded aggregate. 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 grout shall be Conbextra EP75 supplied by Fosroc. It shall provide good general chemical resistance, 7 day compressive strength of at least 100 N/mm<sup>2</sup> and a compressive creep of 2.05 x 10<sup>-3</sup> mm/mm in accordance with ASTM C1181- 2.85N/mm<sup>2</sup> 1 year, 60°C

### Properties

|  |   |                                 |
|--|---|---------------------------------|
| Pot life   | : | 2 hours @ 23°C                  |
| Tensile strength @ 27°C                              | : | 14 N/mm <sup>2</sup> at 7 days  |
| BS6319 Part 7  |   |                                 |
| Flexural strength @ 27°C                             | : | 26 N/mm <sup>2</sup> at 7 days  |
| BS6319 Part 3  |   |                                 |
| Mixed Density @ 27°C                                 | : | 1.95 to 2.05 g/cc               |
| Compressive strength                                 | : | 75 N/mm <sup>2</sup> at 1 day   |
| @ 27°C   |   | 92 N/mm <sup>2</sup> at 3 days  |
| ASTM C579  |   | 100 N/mm <sup>2</sup> at 7 days |
| Maximum flow distance for a head of 100 mm at 20°C : |   |                                 |
| 35 mm gap  | - | 2000 mm                         |
| 70 mm gap  | - | 3500 mm                         |
| Coefficient of thermal expansion                     |   |                                 |
| ASTM C531  | : | 28.1 x 10 <sup>-6</sup>         |
| Compressive creep                                    |   |                                 |
| (ASTM C1181- 2.85N/mm <sup>2</sup>                   |   |                                 |
| 1 year, 60°C)  | : | 2.05 x 10 <sup>-3</sup> mm/mm   |

## Application instructions

### Preparation

#### Underplate grouting

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 EP75 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 laitence, it must be cut back to a sound base. Bolt holes or fixing pockets must be blown clean of any dirt or debris.

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## Base plate

If delay is likely before placing steel base plates, it is recommended that the underside and edge are coated with Nitoprime 25\* to prevent rust formation and ensure bonding with the Conbextra EP75 grout. All metal surfaces should be cleaned to a bright finish in accordance with Swedish Standard SA 2½ or equal. Nitoprime 25 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 until homogeneous. Place the mixed base and hardener into a suitable forced action spiral paddle mixer making sure that the entire volume is poured in. Add the aggregate and mix 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.

## Cleaning

All tools and equipment should be cleaned immediately after use with Nitoflor Sol\*.

## Hot weather working

Whilst the performance of Conbextra EP75 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. Conbextra EP75 is recommended for grouting in a maximum area of the 3sqm at maximum thickness of 75mm.
- Due to thermal and Mechanical stress, Sometimes grouts lead to crack.

The following precautions can be taken to minimise the cracks in case of Epoxy Grouts.

- i) Reducing Shoulder widths
- ii) Rounding Sharp edges
- iii) Shading from direct sunlight
- iv) Design of minimum thickness to reduce volume and ratio.
- v) Properly spaced expansion joints.

If the area to be grouted is greater than 4sqm, low exothermic epoxy grout Conbextra EP300 should be used.

## Estimating

### Supply

|                |   |                     |
|----------------|---|---------------------|
| Conbextra EP75 | : | 14 litre packs      |
| Nitoprime 25   | : | 1 and 4 litre packs |
| Nitoflor Sol   | : | 5 & 20 litre tins   |

### Coverage

|              |   |                                 |
|--------------|---|---------------------------------|
| Nitoprime 25 | : | 5.5 - 6.5 m <sup>2</sup> /litre |
|--------------|---|---------------------------------|

## Storage

When stored in warehouse conditions below 35°C, Conbextra EP75 will have a shelf life of 12 months.



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## Precautions

### Health and safety

Some people are sensitive to epoxy resin so gloves and a barrier cream 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. 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 25 and Nitoflor Sol are flammable.

### Flash points

|              |   |      |
|--------------|---|------|
| Nitoprime 25 | : | 39°C |
| Nitoflor Sol | : | 33°C |

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