# Fosroc®
# Conbextra® EP300 DP

constructive solutions

## Low exotherm three part epoxy resin grout suitable for large volume pours

## Uses

Conbextra EP300 DP is for use in applications where heavy dynamic or mobile loads are encountered. Particularly well suited to applications where long working time and/or large volume grouting is required.

- Reciprocating machinery
- Testing equipment
- Heavy crane and transporter rails
- High speed turbines
- Centrifuges and drop forges

Also for use in conditions where chemical spillage may be encountered. Typical situations could be met in steelworks, refineries, electroplating works and chemical plants.

Conbextra EP300 DP is especially suitable where long working time and/or low exotherm properties are required e.g. for large pours or high ambient temperatures. It can also be used for grouting wide gap ranges making it a versatile product for a number of applications.

Conbextra EP300 DP is also used to encapsulate piletops and ensure water tightness. The applied product is continuously bonded to the pile surface and prevents water seepage either through capillaries or along the reinforcement path.

## Advantages

- High compressive, tensile and flexural strengths
- Resistant to repetitive dynamic loads
- Fast, convenient installation
- Withstands a wide range of chemicals
- Virtually no shrinkage and hence ensures complete surface contact and bond
- Low creep characteristics under sustained loading
- Excellent flow properties
- Can be used installed at high temperatures
- Wide range of gap thicknesses are possible

## Design criteria

Conbextra EP300 DP is designed to be grouted into gaps from 10mm up to 300mm. Grouting of gap widths below 50mm will take longer to cure due to the low exotherm nature of the grout. If a fast cure of the grout is critical at smaller gap widths please refer to the Conbextra EP65 Plus technical data sheet.

Grout pours greater than 300mm thick are also possible but care should be taken that the total volume of the single pour should be no greater than 1.5 $m^3$ dependding on the geometry of the pour.

### Dimensional stability

For the grout to effectively transfer load from the base plate to the supporting structure it is essential that the grout maintains intimate contact with the base plate. The area of contact between the grout and the base plate is measured as the ‘effective bearing area’ (EBA). In order to maintain an even load distribution throughout the grout it is necessary to attain as high as possible EBA.

A dominant factor which influences the EBA achieved with epoxy based grouts is the degree of air entrapment within the product. Air can be introduced into the grout during mixing, or in the case of products which contain a separate dry filler component air can be released into the mixed product as the filler ‘wets out’ over time.

### Chemical resistance

Conbextra EP300 DP is resistant to oil, grease, fats, most chemicals, mild acids and alkalis, fresh and sea water. Consult Fosroc when exposure to solvents or concentrated chemicals is anticipated.

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## Properties

| Test Method | Standard | Result | | |
|---|---|---|---|---|
| **Compressive Strength (MPa)** | AS 1478.2:2005 | Cure time @ 23°C | MPa | |
| | | 1 day | 65 | |
| | | 3 days | 75 | |
| | | 7 days | 85 | |
| | | 28 days | 90 | |
| **Mixed Density** | | 2069kg/m$^3$ | | |
| **Peak Exotherm** | | 30°C (50mm x 100mm cylinder) | | |
| **Linear Shrinkage** | ASTM C531 | -0.017 % | | |
| **Volume Change** | ASTM C827 | -0.419 % | | |
| **Modulus of Elasticity** | AS 1012.17-1997 | 16 GPa | | |
| **Indirect Tensile Strength** | AS 1012.2 10-2000 | 14MPa @ 28days | | |
| **Flexural Strength (Modulus of Rupture)** | AS 1012.2 11-2000 | 33MPa @ 28days | | |
| **Thermal Coefficient of Expansion** | ASTM C531 | 2.34 x 10$^{-5}$ mm/mm °C | | |
| **Bond Strength** | ASTM C882/ C882M:2012 | Concrete Failure | | |
| **Creep 28 days @ 2.8MPa** | ASTM C1181-00 | @ 60°C 4.47 x 10$^{-3}$ cm/cm | | |
| **Chloride Content** | EN 1015-17:2000 | 0.0% | | |
| **Pot Life** | | 10°C<br>20°C<br>30°C | 6 hours<br>3 hours<br>1.5 hours | |
| **Colour** | | Charcoal grey (mixed) | | |
| **Minimum Thickness**<br>**Maximum Thickness** | | 10mm<br>300mm | | |
| **Maximum Aggregate Size (for pumping):** | | 2mm | | |

Note: Compressive strengths stated above were measured using cube samples. Test results obtained will vary if testing is carried out to an alternative standard or sample dimensions are used. Refer to the compressive strength testing guide for epoxy grouts document for further information.

## Flow characteristics

The maximum distance of flow is governed by the gap thickness, the head of grout applied and the ambient temperature. The following table gives typical data for flow design.

| | Temperature | Gap Thickness (mm) | Hydrostatic head (mm) | Maximum flow (mm) |
|---|---|---|---|---|
| **Conbextra EP300 DP** | 23°C | 100 | 100 | 2000 |

| Test Method | Standard | Test Result |
|---|---|---|
| Flow | AS 1478.2 | 500mm |

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## Application Instructions

### Foundation surface

All contact surfaces must be free from oil, grease, free standing water or any loosely adherent material. Concrete surfaces should be cut back to a sound base. All dust must be removed and bolt holes or fixing pockets blown clean of any dirt or debris. Bolt holes and fixing pockets should be filled prior to the main grouting pour in order to reduce the possibility of air entrapment under the base plate.

### Steel surfaces

All steel surfaces should be shot blasted free of rust, paint and flaky mill scale.

### Formwork

The formwork should be constructed to be leakproof as Conbextra EP300 DP is a free flowing grout. Loss of grout once the material is placed, but not hardened, will result in incomplete filling of the gap.

For free flow grout conditions it is essential to provide a hydrostatic head of grout. To achieve this a feeding hopper system should be used.

Forming materials should be coated with a release agent such as grease or wax material or a plastic coating.These coatings act as a bond breaker so that a smooth grout surface is achieved after form removal and the forms are protected for reuse.

### Mixing

Pour all the contents of the hardener pack into the base container. Mix the hardener slowly into the base using a slow speed heavy duty mixer such as a 140mm x 600mm helical mixing paddle fitted to a heavy-duty 1600W mixer or similar. Once the base and hardener have been mixed slowly add the filler* component and continue to mix for a further 2 minutes until the filler has been wetted out and a uniform colour is achieved.

*Conbextra EP300 DP Fillers are classified not hazardous for RCS in accordance with Australian Inventory of Industrial Chemicals; contains <0.1% RCS

Ensure the paddle is fully immersed in the grout whilst mixing. Do not pull the paddle up and down whilst mixing. Ensure there is no unmixed material left in the drum prior to placing the grout.

For large pours a purpose made grout pump can be used such as a diaphragm pump.

For further information on mixing instructions refer to the Fosroc Epoxy Grout Installation Guide.

### Placing

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.

The mixed grout should be poured only from one side of the void to eliminate the entrapment of air. This is best achieved by pouring the grout across the shortest distance of travel. The grout 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 Fosroc Solvent 10.

## Limitations

### Temperature during application

Grouting may be carried out without special precautions at ambient temperatures from 5°C to 35°C. Where temperatures exceed 20°C note the pot life will be reduced.

Cure temperatures below 15°C will result in slower strength build up; at 5°C cure will stop until the material warms.

Exotherm: All epoxy systems will develop a temperature rise on mixing. Its extent will be a function of the volume to surface ratio, the ambient temperature as well as the mass and thermal conductivity of the surrounding materials.

### In service

When Conbextra EP300 DP is cured it is completely resistant to frost and sub zero temperatures as well as temperatures as high as 55°C.

## Supply

| | |
|---|---|
| **Conbextra EP300 DP**: | 11.4 litre 3 component pack |
| Conbextra EP300 DP Base 11.4L Pack | FC500547-2.7L |
| Conbextra EP300 DP Hardener 11.4L Pack | FC500545-860ML |
| Conbextra EP300 DP Filler 11.4L Pack | FC500546-20KG |

## Storage

Conbextra EP300 DP Base and Hardener components have a shelf life of 5 years.

Conbextra EP300 DP Filler has a shelf life of 18 months from date of manufacture if kept in the original, unopened bags. Refer to the manufacture date indicated on the packaging.

**Important notice**

A Safety Data Sheet (SDS) is available from the Fosroc website. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

**Product disclaimer**

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.

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