

# Conbextra GP

## General Purpose Non-Shrink Cementitious Grout

### Uses

Conbextra GP is used for general purpose grouting where it is essential to eliminate shrinkage when completely filling the void between a base plate and a substrate. Such an application would be the grouting of a stanchion base plate. It can also be used for anchoring a wide range of fixings. These include masts, anchor bolts and fence posts.

### Advantages

- Gaseous expansion system compensates for shrinkage and settlement in the plastic state.
- No metallic iron content to cause staining.
- Pre-packaged material overcomes potential on-site batching variations.
- Develops high early strength without the use of chlorides.
- High ultimate strength and low permeability ensure the durability of the hardened grout.

### Description

Conbextra GP general purpose non-shrink cementitious grout, is supplied as a ready to use dry powder. The addition of a controlled amount of clean water produces a flowing non-shrink grout for gap thicknesses up to 100 mm.

Conbextra GP is a blend of Portland cement, graded fillers and chemical additives which impart controlled expansion in the plastic state whilst minimising water demand. The low water demand ensures high early strength. The graded filler is designed to assist uniform mixing and produce a consistent grout.

### Technical Support

Fosroc offers a comprehensive range of high quality, high performance construction products. In addition, Fosroc offers a worldwide technical support and on-site service to specifiers, end-users and contractors.

### Properties

The following results were obtained at a water:powder ratio of 0.18 and temperature of 28°C.

Test Method	Typical Result
Compressive Strength	26 N/mm <sup>2</sup> @ 1 day
BS 4551	55 N/mm <sup>2</sup> @ 7 days
	75 N/mm <sup>2</sup> @ 28 days
Flexural strength	2.5 N/mm <sup>2</sup> @ 1 day
ASTM C348 :	10.0 N/mm <sup>2</sup> @ 7 days
	12.0 N/mm <sup>2</sup> @ 28 days
Time for expansion	
Start :	15 minutes
Finish :	120 minutes
Fresh wet density	Approximately 2170 kg/m <sup>3</sup> depending on actual consistency used.
Modulus of elasticity	
ASTM C 469-83 :	>28 kN/mm <sup>2</sup>
Expansion characteristics	
ASTM C940 :	Up to 2% @ 24 hours

### Specification Clauses

#### Performance specification

All grouting where shown on the drawing must be carried out with a pre-packaged cement based product which is chloride-free. It shall be mixed with clean water to the required consistency.

The plastic grout must not bleed or segregate. A positive volumetric expansion shall occur while the grout is plastic by means of a gaseous system. The compressive strength of the grout must exceed 40 N/mm<sup>2</sup> at 7 days and 60 N/mm<sup>2</sup> at 28 days. The storage, handling and placement of the grout must be strictly in accordance with the manufacturer's instructions.

#### Supplier specification

All grouting where shown on the drawing must be carried out using Conbextra GP manufactured by Fosroc and used in accordance with the manufacturer's data sheet.

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## Instructions for Use

### Preparation

#### *Foundation surface*

The substrate surface 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 and fixing pockets must be blown clean of any dirt or debris.

#### *Pre-soaking*

For a minimum of 2 hours prior to grouting, the area of cleaned substrate should be flooded with fresh water. Immediately before grouting takes place, any free water should be removed. Particular care should be taken to blow out all bolt holes and pockets.

#### *Base plate*

It is essential that this is clean and free from oil, grease or scale. Air pressure relief holes should be provided to allow venting of any isolated high spots.

#### *Levelling shims*

If these are to be removed after the grout has hardened, they should be treated with a thin layer of grease.

#### *Formwork*

The formwork should be constructed to be leak proof. This can be achieved by using foam rubber strip or mastic sealant beneath the constructed formwork and between joints. In some cases it is practical to use a sacrificial semi-dry sand and cement formwork.

#### *Unrestrained surface area*

This must be kept to a minimum. Generally the gap width between the perimeter formwork and the plate edge should not exceed 75 mm on the pouring side and 25 mm on the opposite side. It is advisable where practical to have no gap at the flank sides.

## Mixing and Placing

### Mixing

For best results a mechanically powered grout mixer should be used. When quantities up to 40 kg are used, a slow speed drill fitted with a high shear mixer is suitable. Larger quantities will require a high shear vane mixer. Do

not use a colloidal impeller mixer. To enable the grouting operation to be carried out continuously, it is essential that sufficient mixing capacity and labour are available. The use of a grout holding tank with provision to gently agitate the grout may be required.

### Consistency of grout mix

The quantity of clean water required to be added to a 25 kg bag to achieve the desired consistency is given below.

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Trowelable	:	3.4 - 3.6 litres
Flowable	:	4.2 - 4.5 litres

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The selected water content should be accurately measured into the mixer. The total contents of the Conbextra GP bag should be slowly added and continuous mixing should take place for 5 minutes. This will ensure that the grout has a smooth even consistency.

### Placing

At 25°C place the grout within 15 minutes of mixing to gain full benefit of the expansion process. Conbextra GP can be placed in thicknesses up to 100 mm in a single pour when used as an underplate grout. For thicker sections it is necessary to fill out Conbextra GP with well graded silt free aggregate to minimise heat build up. Typically a 10 mm aggregate is suitable.

Any bolt pockets must be grouted prior to grouting between the substrate and the base plate. Continuous grout flow is essential. Sufficient grout must be prepared before starting. The time taken to pour a batch must be regulated to the time to prepare the next one. Pouring should be from one side of the void to eliminate any air or pre-soaking water becoming trapped under the base plate. The grout head must be maintained at all times so that a continuous grout front is achieved.

Where large volumes have to be placed Conbextra GP may be pumped. A heavy duty diaphragm pump is recommended for this purpose. Screw feed and piston pumps may also be suitable.

### Curing

On completion of the grouting operation, exposed areas should be thoroughly cured. This should be done by the use of Concure curing membrane, continuous application of water and / or wet hessian.

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## Cleaning

Conbextra GP should be removed from tools and equipment with clean water immediately after use. Cured material can be removed mechanically, or with Fosroc Acid Etch.

## Limitations

### High temperature working

At ambient temperatures above 35°C the following working practices should be adopted.

- Store unmixed material in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight.
- Keep 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.
- Try to eliminate application during the hottest times of the day and in direct sunlight.
- Make sufficient material, plant and labour available to ensure that application is a continuous process.
- Water (below 20°C) should be used for mixing the grout prior to placement.

## Estimating

### Supply

Conbextra GP is supplied in 25 kg moisture resistant bags.

### Yield

Allowance should be made for wastage when estimating quantities required. The approximate yield per 25 kg bag for different consistencies is:

Consistency	:	Trowelable	Flowable
Yield (litres)	:	12.20	13.25

## Storage

Conbextra GP has a shelf life of 12 months if kept in a dry store in sealed bags. If stored in high temperature and high humidity locations the shelf life may be reduced.

## Precautions

### Health and safety

Conbextra GP is alkaline and should not come into contact with skin and eyes. Avoid inhalation of dust during mixing. Gloves, goggles and dust mask should be worn. If contact with skin occurs, wash with water. Splashes to eyes should be washed immediately with plenty of clean water and medical advice sought.

### Fire

Conbextra GP is non-flammable.

## Additional Information

Fosroc additionally offers a comprehensive package of products specially designed for the repair and refurbishment of damaged concrete. Fosroc's 'Systematic Approach' to concrete repair features the following:

- Hand-placed repair mortars
- Spray grade repair mortars
- Fluid micro-concretes
- Chemically resistant epoxy mortars
- Anti-carbonation / anti-chloride protective coatings
- Chemical and adhesion resistant coatings

For further information on any of the above, please consult your local Fosroc office - as below



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### Important note

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