

Conbextra Sureflow 100



constructive solutions

Dual Expansion system shrinkage compensated, high flowable, high strength, cementitious precision grout

Uses

Conbextra Sureflow 100 is used for flowing precision grouting, where high compressive strengths and flow retention are required.

- Machine base plates
- Bridge Bearings
- Stanchions & Columns
- Precast erection
- Anchor bars
- Concrete voids/repairs
- Crane rails

Advantages

- DUAL EXPANSION system compensates for shrinkage and settlement in both plastic and hardened states, increasing the effective bearing area
- Good flow and flow retention
- High early strengths
- Adjustable consistency
- High resistance to bleed and segregation
- Hydrogen-free gaseous expansion system
- No Chlorides

Description

Conbextra Sureflow 100 is a new generation of cementitious grout with excellent workability, dual shrinkage compensation and good flow retention. Conbextra Sureflow 100 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 between 10 to 100 mm.

Conbextra Sureflow 100 has a unique blend of Portland cement, graded fillers and chemical additives which impart controlled expansion in both plastic and hardened state whilst minimising water demand.

Special additives obtain adjustable flow with good flow retention. The low water demand ensures high early strength and high ultimate strength. The specially graded filler ensures rapid uniform mixing and produces a consistent grout with no bleeding or segregation.

Technical Support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

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2404-CPR-TH1013	
TS EN 1504-3 R4 Class Structural Repair Mortar	
DoP Number	TR1504-3/004
Compressive Strength	≥ 65 N/mm ²
Chloride Ion Content	≤ % 0,05
Adhesive Bond	≥ 2.0 N/mm ²
Restrained Shrinkage/Expansion	≥ 2.0 N/mm ²
Modulus of Elasticity	≥ 25.0 GPa
Capillary Water Absorption	≤ 0.5 kg/m ² h ^{0.5}
Reaction to Fire	Class: A1
Dangerous Substance	Compatible with Clause 5.4

Standards Compliance

Conbextra meets and exceeds the requirements of ASTM C 1107 Type C.

Specification

Supplier specification

Where mentioned on the contract documents, all precision grouting (specify details and areas of application) must be carried out using Conbextra Sureflow 100 manufactured by Fosroc and used in accordance with the manufacturer's data sheet.

Performance specification

All precision grouting (specify details and areas of application) must be carried out with a prepackaged cement based product, which is nonmetallic and chloride-free.

It shall be mixed with clean water to the required consistency and not exhibit bleed or segregation.

A volumetric expansion of up to 2% shall occur while the grout is in a plastic state by means of a gaseous, hydrogen-free system. The grout must also be compensated for shrinkage in the hardened state.

The compressive strength of the grout must exceed 55N/mm² at 7 days and 65 N/mm² at 28 days when tested at water powder ratio of 0.15.

Conbextra Sureflow 100

The storage, handling and placement of the grout must be in strict accordance with the manufacturer's instructions.

Properties

The following properties were obtained in Fosroc's testing facilities at a temperature of 25°C

Consistency	Plastic	Pourable	Flowable
Water / Powder Ratio	% 13	% 15	% 16
Water addition/25 kg	3,25 lt	3,75 lt	4,00 lt
Compressive Strength (N/mm²) ASTM C 109			
1 day	40	30	25
7 days	70	60	55
28 days	85	70	65
Flow Characteristics ASTM cone (mm) ± %10			
0 dakika	190	250	280
30 dakika	160	230	260

Expansion: Plastic State ASTM C 827	
Start	15 minutes
Finish	Initial Set
Total Expansion	%0,25 - %2
Expansion: Hardened State ASTM C 1107	
Start	Initial Set
Finish	28 days
Total Expansion	% 0 - % 0,3
Flexural Strength BS EN 196:1 (S/T : % 16)	
7 days	8 N/mm ²
28 days	10 N/mm ²
Fresh Wet Density (0,16 w/p ratio)	2340 kg/m ³
E-Modulus (ASTM C 469)	≥ 25 GPa (28 days)

Instructions for Use

Preparation

Concrete 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 / Screws

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 leakproof as Conbextra Sureflow 100 is a free flowing grout. 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. The formwork should include outlets for the pre-soaking water.

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. There should be no gap at the flank sides.

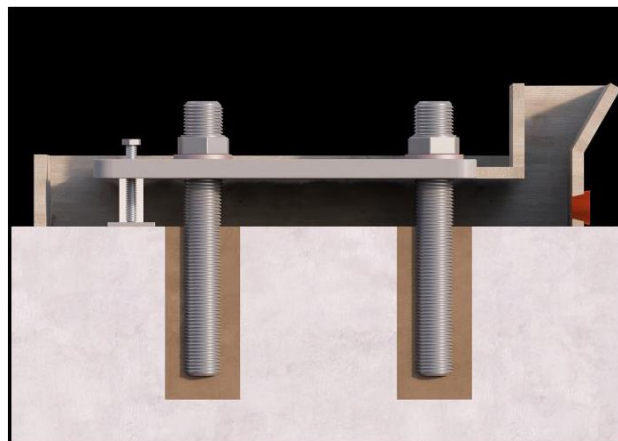


Figure 1: Alignment of formwork with sleeved levelling screws

Conbextra Sureflow 100

Mixing

For best results a mechanically powered grout mixer should be used. For quantities up to 50 kg a slow speed drill fitted with a Fosroc Mixing Paddle (MR3) should be used. Larger quantities will require a high shear vane mixer. Do not use a colloidal impeller mixer.

It is essential that machine mixing capacity and labour availability is adequate to enable the grouting operation to be carried out continuously. This may require the use of a holding tank with provision for gentle agitation to maintain fluidity.

Consistency of mixed grout

To achieve the consistencies the amount of clean water that is added to a 25 kg bag is:

Plastic	3,25 – 3,50 litres
Pourable	3,75 – 4,00 litres
Flowable	4,00 – 4,25 litres

The selected water content should be accurately measured into the mixer. Slowly add the total contents of the Conbextra Sureflow 100 bag, mix continuously for 3 minutes, ensuring a smooth, even consistency is obtained.

Placing

At 25°C, place the grout within 15 minutes of mixing to gain the full benefit of the expansion process.

Conbextra Sureflow 100 can be placed in a maximum thickness of 100 mm in a single pour. For thicker sections 100 mm Conbextra TS, which can be applied up to 500 mm, should be used or it is necessary to fill out Conbextra SureFlow 100 with well graded 5~10mm, silt free aggregate to minimise exotherm. However, this will change the material properties.

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 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 or surplus pre-soaking water. 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.

Where large volumes have to be placed Conbextra Sureflow 100 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, or continuous application of water and/or wet hessian.

Cleaning

Conbextra Sureflow 100 should be removed from tools and equipment with clean water immediately after use. Cured material can be removed mechanically, or with Fosroc Acid Etch*†.

Sampling procedure

Cementitious grouts cannot be tested as concrete. Special sampling procedures are required. Refer to your local Fosroc office for further details.

High temperature working

It is suggested that, for temperatures above 35°C, the following guidelines are adopted as good working practice:

- 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.

Limitations

In general, 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. However they can be used for bolt pockets. In doubt, please consult your local Fosroc offices for more details.

Supply	
Conbextra Sureflow 100	25 kg bag
Coverage	
Plastic	~12,5 litres/25 kg
Pourable	~13,0 litres/25 kg
Flowable	~13,2 litres/25 kg

Note: Coverage figures are theoretical and due to wastage factors and the variety nature of possible substrates, practical coverage will be reduced.

Conbextra Sureflow 100

Storage

Conbextra Sureflow 100 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 will be reduced.

Precautions

Health and safety

Conbextra Sureflow 100 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 Sureflow 100 is non-flammable.

Refer to Material Safety Data Sheet for detailed information.

Additional Information

Fosroc manufactures a wide range of complementary products which include :

- waterproofing membranes & waterstops
- joint sealants & filler boards
- cementitious & epoxy grouts
- specialised flooring materials

Fosroc additionally offers a comprehensive package of products specifically 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 abrasion resistant coatings

For further information on any of the above, please consult your local Fosroc Office.

** Denotes the trademark of Fosroc International Limited*

† See separate data sheet



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Important Note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Service. All Fosroc datasheets are updated on a regular basis. It is the user's responsibility to obtain the latest version.

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