

Conbextra BB92 is an ultra-high performance grout specifically designed for structural grouted connections for wind turbine foundations and oil and gas installations

Advantages

- High early compressive strengths including at low temperatures.
- High ultimate compressive and flexural strengths.
- Fatigue resistant.
- Suitable for pumping.
- No segregation or bleeding to ensure consistent final physical performance and to prevent pump blockages.
- Good fluidity and workability retention.
- Positive expansion after casting.

Description

Conbextra BB92 is supplied as a ready to use powder. The addition of a controlled amount of clean water produces a free-flowing precision grout. The product provides high early strength and long-term durability. Suitable for gap depths in the range of 10 to 150mm.

Standards compliance

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Conbextra BB92	
Fosroc International Limited Drayton Manor Business Park, Coleshill Road, Tamworth, B78 3XN, UK DOP UK9-100	
EN 1504-6: Anchoring of reinforcing steel bar	
Testing of anchoring products by pull-out method. EN 1881:2006	Displacement ≤ 0.6 mm at a 75 kN load
Chloride ion content EN 1015-17:2000	≤ 0.05%
Reaction to fire EN 13501-1	Class A1
Dangerous substances	Complies with 5.3



Properties

The following properties were obtained at a temperature of ~20°C unless otherwise stated. Results given below are typical for laboratory testing; those derived from field applied samples may vary.

Test method	Typical result*
Wet density	2.25 -2.3 kg/litre
Granulometry	0-2 mm
Water / powder ratio	2.75-3.00 litres / 25 kg
Gap depth	10-150 mm
Final set: (UNE-EN 196-3:1996)	<5 hours
Compressive strength (EN 12190) Prisms 40 x 40 x 160 mm	~50 N/mm ² @ 1 day ~75 N/mm ² @ 7 days ~90 N/mm ² @ 28 days
Flexural strength: (UNE EN 196-1:1996)	~7,5 N/mm ² @ 1 day ~11 N/mm ² @ 7 days ~13 N/mm ² @ 28 days
Initial flow ASTM C-230 cone	270 - 320mm
Flow Trough (EN13395-2)	450–650mm
Expansion:	0-1 %
Elastic modulus: (UNE-EN 13412:2008)	~50 GPa
Adhesion (EN1542):	>2.5 MPa
Testing of anchoring products by pull-out method. UNE-EN 1881:2006 (wet)	0.31mm @75kN
Resistance to Carbonation (EN13295)	Complies
Capillary Absorption (EN13057)	0.2kg / (m ² x h ^{0.5})

* Values obtained at 0.11 w/p ratio in laboratory testing conditions

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Conbextra BB92

Application instructions

Applicator

When applying Conbextra BB92 to wind turbine foundations or precast segments, the applicator must follow the Application Method Statement provided by the Fosroc Technical Department and comply with any method statement provided by the client or their representative. The details provided below serve as an outline guide.

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 or fixing pockets must be blown clean of any dirt or debris.

Pre-soaking

Several hours prior to grouting, the area of cleaned foundation should be flooded with fresh water. Immediately before grouting takes place, any free water should be removed. Pay special attention to the boltholes or fixing pockets.

Base plate

It is essential that this is clean and free from oil, grease, or scale.

Levelling shims

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

Formwork

The formwork should be constructed to be leakproof as Conbextra BB92 is a free-flowing grout. This can be achieved by sealing all joints. In some cases, it is practical to use a mortar formwork. The formwork should include outlets for the pre-soaking water. The unrestrained surface area of the grout must be kept to a minimum. Generally, the gap width between the perimeter formwork and the plate edge should not exceed 150 mm on the pouring side and 50 mm on the opposite side. There should be no gap at the flank sides.

Mixing

For best results, a mechanically powered grout mixer should be used.

Place the water in the mixer and slowly add the content of the Conbextra BB92 bag. Mix continuously for 5 minutes, ensuring a smooth, even consistency is obtained. Note that during the first 2 to 3 minutes the consistency will appear dry. Do not add additional water unless expressly instructed to do so. For equipment with a bottom port in the mixing pan, add one bag of powder to the mixer before the water, to prevent loss of water through the port

Add 2.75 to 3.0 litres of water to each 25 kg bag of Conbextra BB92 to produce a fluid grout.

Placing

For large volumes, Conbextra BB92 shall be pumped.

Conbextra BB92 can be placed in thicknesses up to 150 mm in a single pour. Any bolt pockets must be grouted with mortar or resin 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 pumped with the stinger at the bottom of the trench to eliminate the entrapment of air or surplus pre-soaking water. The grout head must be always maintained so that a continuous grout front is achieved.

Curing

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

Cleaning

Conbextra BB92 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

Conbextra BB92 should be used between temperatures of 2°C & rising, and 35°C. The substrate must be free of ice. When the air or contact surface temperatures are 5°C or below, it is recommended to use hot water (30-40°C) to accelerate strength development.

At temperatures higher than 35°C, the mixed grout should be stored in the shade. Cool water (below 20°C) should be used for mixing the grout.

When grouting at temperatures below 2°C or above 35°C, contact the Fosroc Technical Department. It should not be exposed to moving water or rainfall during application and prior to the final set.

Estimating

Conbextra BB92:	Packaging	Yield
	25 kg bag	12 litres

Storage

Conbextra BB92 has a shelf life of 12 months if kept in a dry store, in its original packaging. If stored in high temperature and high humidity locations, the shelf life may be reduced.

Health and safety

Conbextra BB92 is alkaline, avoid skin and eye contact. 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.

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Fire

Conbextra BB92 is not flammable.

For further information, please refer to the Safety Data Sheet.

Product end-of-life management: Removal

Good practice should be applied when using and storing the product to avoid or minimize waste, be aware of its expiration date. Consider possible reuse or recycling methods. Do not pour into drains or discharge into the environment. All product and packaging waste must be delivered to an authorised agent for treatment, in accordance with legal requirements. Consider reusing / recycling the product packaging internally before sending to waste management.

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Important note

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