

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

Uses

- Structural grouted connections for onshore wind turbine foundations and non-structural offshore foundation connections.
- Segmental concrete wind towers

Advantages

- Non-shrink
- High flexural strength and modulus of elasticity without the addition of fibres, enhancing the flow characteristics of the grout.
- Quick return to service and removal of temporary supports due to high early strength build-up, even at low temperatures.
- High fatigue resistance
- Suitable for pumping or pouring over a large range of applications.
- No segregation or bleeding to ensure consistent final physical performance and to prevent pump blockages.

Standards compliance

 0099	
Conbextra BB92	
Fosroc Euco, S.A., Gasteiz Bidea, 11 48213 Izurtza - Bizkaia	
12	
M1148406 EN 1504-6:2006 Anchoring products	
Pull off strength	displacement ≤ 0,6 mm for a 75 KN load
Chloride ion content	≤ 0,05%
Reaction to fire	Class A1
Dangerous substances	Complies with 5.3

Properties

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

Test method	Typical result @ 0.12 w/p ratio
Final set: (EN196-3:1996)	<5 hours
Expansion:	0-1 %
Slump flow: (EN12350-8)	>700mm
Flow trough: (EN13395-2)	>450 mm
Brass cone flow:	240 - 280mm
Density of fresh mixture:	2.25 - 2.35kg/m
Flexural strength: (EN196-1:2005)	>7,5 N/mm ² @ 1 day >13 N/mm ² @ 7 days >15 N/mm ² @ 28 days

Low Temperature Results (EN196 -1 :2005)			
Age	Test	2°C	5°C
1 Day	Compressive	>5 N/mm ²	>13N/mm ²
	Flexural	>1 N/mm ²	>3 N/mm ²
3 Day	Compressive	>60N/mm ²	>70N/mm ²
	Flexural	>10N/mm ²	>11N/mm ²
7 Day	Compressive	>70N/mm ²	>80N/mm ²
	Flexural	>13N/mm ²	>13N/mm ²

Compressive Strength 20°C (EN 12190) (75mm cubes - EN12390-3)		
	Pumpable – 0.10 w/p ratio	Flowable – 0.12 w/p ratio
1 Day	>70 N/mm ²	>60 N/mm ²
7 Day	>90 N/mm ²	>80 N/mm ²
28 Day	>100 N/mm ²	>90 N/mm ²

Granulometry: 0-2 mm
 Water/powder ratio: 0,10-0.12(2.5-3.0l/25kg)
 Gap depth: 10-150* mm
 *For larger gap depths contact Fosroc Technical Dept

Fosroc® Conbextra BB92

Internal Test data

Test items	Standard/method	Specification
Static Modulus of Elasticity	EN 13412 Prism 4 x 4 x 16 cm	≥ 41 GPa
Bond strength on concrete	EN1542, dollies dia 5cm	≥ 2 MPa
Fatigue resistance	GTS91008 cylinder 6×12 cm	> that predicted by CEB-FIP Model Code 1990 and the DNV-OS-C502 Guideline for a concrete of the same compressive strength
Chloride ion content	EN 1015-17	≤0.05 %
Resistance to carbonation	EN 13295	dk ≤ reference concrete (MC0.45)
Capillary absorption	EN 13057	≤ 0.5 kg.m ⁻² .h ^{0.5}
Thermal compatibility Freeze / thaw cycling	EN 13687-1 dollies dia 5cm	After 50 cycles, bond strength ≥ 2 Mpa

Application instructions

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

Pre-soaking

Several hours prior to grouting onshore, 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 bolt holes or fixing pockets.

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 very well.

In some cases it is practical to use a mortar formwork. The formwork should include outlets for the presoaking water when used onshore

Mixing

For best results a mechanically powered grout mixer should be used. For quantities up to 50kg a slow speed drill fitted with a high shear paddle is suitable. Larger quantities will require a high shear vane mixer.

Place the required quantity of clean water (2.5-3.0 litres per 25kg pail, 100-120 litres per 1 tonne bulk bag) into the mixing vessel for each bag to be used. Add the contents slowly to the mixer. Mix continuously for 5 minutes, ensuring a smooth, even consistency is obtained. Note that during the first 2 or 3 minutes consistency will appear drier.

Placing

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 poured only from one side of the void to eliminate the entrapment of air or surplus pre-soaking water. The grout head must be maintained at all times so that a continuous grout front is achieved.

For large volumes Conbextra BB92 can be pumped.

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.

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.

Estimating

Supply

Conbextra BB92:	25 kg bag
	1T Bulk Bags

Fosroc® Conbextra BB92

Yield

Allowance should be made for wastage when estimating quantities required. Approximate yield is:

25kg bag	12 Litres
1 tonne bag	475 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.

Limitations

Conbextra BB92 should not be used at temperatures below -5°C or above 40°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

It should not be exposed to moving water or rainfall during application and prior to the final set.

Precautions

Health and safety

Conbextra BB92 is alkaline and should not come in 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. Do not induce vomiting.

Fire

Conbextra BB92 is not flammable.

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

Fosroc and Conbextra are trademarks of Fosroc International Limited



Fosroc Limited

Drayton Manor Business Park
Coleshill Road, Tamworth,
Staffordshire B78 3XN. UK

www.fosroc.com

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 Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation of information given by it. All Fosroc datasheets are updated on a regular basis. It is the user's responsibility to obtain the latest version.

telephone:
+44 0 (1827) 262222

fax:
+44 0 (1827) 262444

email:
enquiryuk@fosroc.com



Certificate number FM 610