



Conbextra VG

Conbextra VG is an ultra high performance cementitious grout, designed for Vestas Wind Turbine foundations.

Uses

Conbextra VG is designed to meet the technical requirements of Vestas turbines on land.

Advantages

- High flexural strength and modulus of elasticity, which consists of adding fiber, increases the fluidity of the product.
- Rapid formwork and scaffolding removal due to high early strength gain even at low temperatures
- Very high ultimate compressive strength, Class C100/115
- High fatigue resistance, durable
- Can be pumped or poured in a wide range of applications
- Grout will not segregate or bleed to provide permanent final physical performance and prevent pump blockages
- The special cement structure with heat of hydration control ensures that it can be used in both thick and thin sections.
- Due to high workability (>150 minutes), it is suitable for wide area applications.
- Positive expansion after pouring

Description

Conbextra VG is a specially formulated ready-to-use cementitious grout material in accordance with the material specifications set by Vestas, for use in the grout work of structural fasteners, up to 400 mm deep, of the wind turbine foundations on land.

Properties

The following properties were obtained at 20°C.

0,07 water/powder ratio	
Granulometry	0 - 3 mm
Depth	25 - 400 mm
Mixing Water Requirement	0.070 - 0.075 ^(a)
Application temperature	2°C - 35°C
Impact class	X0, XC4, XD3, X53, XF3, XA2, WF
*At high temperatures, the water / powder ratio can be increased up to 0.080.	
Wet Material Properties (0,07 water/powder ratio)	
Final set (En 196-3:1996)	< 6 hours
Expansion	%0 - %1
Slump (EN 12350-8)	>700 mm
Fluidity (EN 13395-2)	>450 mm
Air content (EN 1015-7)	≤ %4

Workability


At 5°C , 0.075 water/powder ratio		
	Flow Cone (mm)	Flow channel (mm)
First Flow	290	670
30'	290	660
60'	285	630
90'	285	590
120'	280	550
150'	265	490
180'	265	480
At 20°C , 0.075 water/powder ratio		
	Flow Cone (mm)	Flow channel (mm)
First Flow	295	680
30'	295	670
60'	290	630
90'	285	590
120'	280	540
150'	265	480
180'	260	430
At 30°C , 0.080 water/powder ratio		
	Flow Cone (mm)	Flow channel (mm)
First Flow	325	695
30'	315	660
60'	300	620
90'	295	590
120'	290	550
150'	265	490
180'	260	440

Mechanical Properties (0,07 water/powder ratio)	
Modulus of Elasticity	41 GPa
Flexural Strength (EN196 1:1996)	At 1 day; 7,5 N/mm ² At 7 days; 13 N/mm ² At 28 days; 17 N/mm ²
Compressive Strength	
150 mm Cubes EN 12390-3	At 1 day; 50 N/mm ² At 7 days; 100 N/mm ² At 28 days; 120 N/mm ²
40x40x160 mm prism EN 12190	At 1 day; 30 N/mm ² At 7 days; 120 N/mm ² At 28 days; 130 N/mm ²
Tensile Strength EN -123906	≥9 N/mm ²
Shrink / Crack ASTM C1581	No cracking after 6 months
Shrinkage Class	SKVM0

Consult Fosroc Technical Service for deep applications.

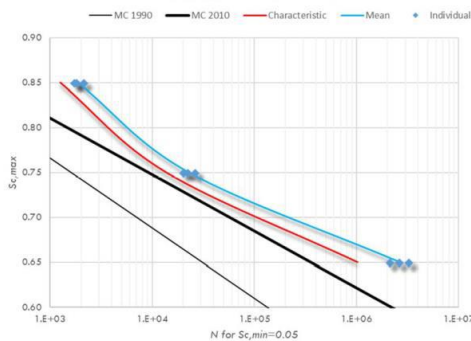
Conbextra VG

Standards Compliance

 2404	FOSROC YAPI KİMYASALLARI SAN. VE TİC. A.Ş. Demirciler Organize Sanayi Bölğ. Mah. Haldun Aksoy Cad. No:12/1 Gebkim OSB Dilovası/Kocaeli 20
	2404-CPR-TH1013
TS EN 1504-3 R4 Class Structural Repair Mortar	
DoP Number	TR1504-3/027
Compressive Strength	≥ 130 N/mm ²
Chloride Ion Content	≤ % 0,05
Adhesion	≥ 2.0 N/mm ²
Restricted Shrinkage	≥ 2.0 N/mm ²
Modulus of Elasticity	≥ 35.0 GPa
Capillary Water Absorption	≤ 0.5 kg/m ² h ^{0.5}
Fire Resistance	Class: A1
Dangerous Substance	Compatible with Clause 5.4

Fatigue Resistance Tests

Fatigue Resistance Tests Tested on Model Code 1990 and 2010 S-N curves.



Instructions for use

The Applicator must comply with the Operating Procedure prepared by the Fosroc Technical Service and, in parallel, the application specifications prepared by the employer and/or his officials, if any. The following information is provided as a guide

Preparation

Conbextra VG should be applied by experienced specialist applicator trained in this field. Consult Fosroc Technical Service for details.

Foundation surface

The substrates must be free from oil, grease or any loosely adhering material. If concrete surfaces are defective or have laitence, they must be cut back to a sound base. Bolt holes and pockets must be blown clean of any dirt and debris.

Pre-soaking

A few 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. Particular care should be taken to blow out all bolt holes and pockets.

Formwork

The formwork should be constructed to be leakproof as Conbextra VG is a free flowing grout. This can be achieved by good sealing of all joints. In some cases, the use of the mortar formwork is a practical solution. The formwork should include outlets for the pre-soaking water.

Mixing

Contact Fosroc Technical Service for equipment and mixing recommendations, application procedure and quality control procedure.

Pour the required amount of clean water into the mixing equipment to be used. (1.875 liters for 25kg, 37.5 liters for 1 ton). While the mixture continues, pour the Conbextra VG slowly. (In some mixing equipment, powder may need to be added first). Stir continuously for 8-10 minutes until a homogeneous, fluid consistency is achieved.

In the first 2-3 minutes of mixing, the mortar will not be fluid. Do not add too much water to the mixture.

Placing

Conbextra VG should be pumped for large volumes. Conbextra VG can be placed in thicknesses up to 400 mm in a single pour. 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.

Curing

On completion of the grouting operation, exposed areas should be thoroughly cured. This should be done by the use of Concure curing membrane, and covered with airtight polyethylene.

Conbextra VG

Cleaning

Conbextra VG should be removed from tools and equipment with clean water immediately after use.

Cured material can be removed by mechanically or Fosroc Acid Etch.

Limitations

- Conbextra TA should not be apply at temperatures below 0°C or above 40°C. There should be no ice on the surface. If the air temperature or surface temperature is 5°C or below, it is recommended to use hot water (30°C-40°C) to accelerate the formation of strength.
- At temperatures above 35°C, the mixed grout should be stored in the shade. Cold water (below 20°C) should be used for mixing the grout.
- Contact Fosroc Technical Department for application at temperatures below +2°C or above + 35°C.
- It should not come into contact with water during application or before curing.

Supply	
Conbextra VG	25 kg bag
Coverage	
25 kg bag	11.2 litres
500 kg bag	224 litres
1000 kg bag	448 litres

Storage

Conbextra VG 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 TA 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 VG 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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