

High flow, dual shrinkage compensated cable bolt grout

Uses

Conbextra CB-C is a highly flowable high strength grout which can be used for various void fill applications including, backfilling behind concrete tunnel segments, bottom up cable bolt grouting applications and general civil applications.

Advantages

- High strength development allows early tensioning of cables
- Dual expansion system (Class A/C) compensates for shrinkage in both plastic and hardened states
- Non-shrink according to ASTM C1107:2020
- Hydrogen free gaseous expansion
- Develops early high strength without the use of chlorides
- Excellent pumpability over both flowable and thixotropic consistencies
- RCS (Respirable Crystalline Silica) Hazard Free

Description

Conbextra CB-C is a Class A / Class C, dual shrinkage compensated cable bolting grout, supplied as a ready to use dry powder. The addition of a controlled amount of clean water and mechanical mixing in a high shear grout mixer is required to produce a grout to the desired consistency.

Conbextra CB-C is not hazardous in accordance with Australian Inventory of Industrial Chemicals. Contains <0.1% RCS.

Properties

Test Method	Standard	Result			
Compressive Strength	AS 1478.2:2005 Tested at 23°C	Water Addition	1 Day MPa	7 Days MPa	28 Days MPa
		5.1L	50	75	100
		5.8L	30	65	85
		6.3L	25	55	75
Pumping Life:		120 mins			
Setting Time	AS 1012.18:2000	Initial 3 hours; Final 5 hours			
Fresh Wet Density	ASTM C185:2020	2020kg/m ³			
Cement type:	AS3972	GP Cement (no aggregates)			
Flow Characteristics:	AS 1478.2:2005	550mm (Flow Trough); Flowable			
Expansion Characteristics:	AS1478.2-2005 ASTM C1107-91	An expansion of up to 2% overcomes plastic settlement Conforms to expansion in hardened state for drying shrinkage			
Minimum thickness:		0.5mm			
Maximum thickness:		100mm			

Clarification of property values: The typical properties given above are derived from laboratory testing at 23°C. Compressive strengths stated above were measured using cube samples. Test results obtained will vary if testing is carried out to an alternative standard or sample dimensions are used.

Application Instructions

Preparation

Ensure voids are clean and free from debris. Install cable taking care not to kink the breather tube in the process. Ensure grout tube is correctly positioned and secured at the bottom of the void. It is recommended to flush water through the grouting lines and up the void to provide lubrication and to prevent water being absorbed into the strata.

Mixing

A forced-action mixer is essential. Mix for 3 to 5 minutes at a slow speed (400/500 rpm) in a suitably sized drum using appropriate equipment such as a 120/140mm helical mixing paddle fitted to a heavy-duty 1600W mixer.

Larger quantities will require a high shear vane mixer. Do not use a colloidal impeller mixer.

The water requirements (litres / 20kg bag) are as follows:

Thixotropic :	5.1 - 5.8 litres / 20kg bag
Flowable:	5.8 - 6.3 litres / 20kg bag

Fill mixer with required water. Start mixer, then slowly add Conbextra CB-C powder. The total contents of the Conbextra CB-C bag should be slowly added and continuously mixed for 3 to 5 minutes. If powder addition is too fast, large lumps will form and final mix will be slow reaching uniformity. Mix until lump free.

Fosroc® Conbextra® CB-C

Test Results to ASTM Specification C1107: 2020

Test Method	Standard	Result	
Flow Consistency:	ASTM C939:2016a	>145%	
Setting Time:	ASTM C953:2017	Initial: Final:	4 hours 5 hours
Change in Height at Early Age (Final setting) %:	ASTM C827:2016	+0.27	
Height Change of Hardened Grout (moist cured) %:	ASTM C1090:2015	1 day 3 days 7 days 28 days 28 days + 28 Days in air	+0.01 +0.02 +0.02 +0.03 +0.03
Compressive Strength (N/mm ²):	ASTM C109:2020b	1 day 3 days 7 days 28 days	37.3 58.5 68.4 85.2

Note: All tests were carried out at 25°C ± 2°C until the age of the test. All above test results are independent third party results. Copies of these test results are available on request. The tests were carried out at a water addition rate of 5.8L per 20kg.

Placing

Continuous flow of grout is essential, therefore ensure that sufficient grout is available to completely fill the void. Stop pumping when air ceases to bubble out of breather tube. Ensure grout tube is folded and tied off to prevent seepage from the void.

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 CB-C should be removed from tools and equipment immediately after use with clean water. Cured material can be removed mechanically.

Supply

Conbextra CB-C is supplied in 20kg moisture resistant plastic bags.

Conbextra CB-C 20kg: FC501088-20KG

Yield

At the recommended consistency each 20kg bag will yield approximately 12 to 13 litres.

Storage

Conbextra CB-C has a shelf life of 36 months from date of manufacture if kept in the original, unopened bags. Refer to the manufacture date indicated on the packaging. Do not use if there are lumps in the product, or a loss of workability (requiring more water to be added) is experienced.

If stored in high temperature and high humidity locations the shelf life may be reduced.

Important notice

A Safety Data Sheet (SDS) is available from the Fosroc website. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Fosroc does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.