Fosroc®
Conbextra® GP

constructive solutions

General purpose, high flow, Class A shrinkage compensated grout - (gaps 10mm to 100mm thickness)

Uses

Conbextra GP is used for general purpose grouting where it is essential to eliminate shrinkage when completely filling voids or grouting between a base plate and substrate, e.g. the grouting of a stanchion base plate. It can also be used for anchoring a wide range of fixings such as masts and anchor bolts.

Advantages

- High ultimate strength and low permeability ensure the durability of the hardened grout
- Gaseous expansion system compensates for shrinkage and settlement in the plastic state
- Can be dry packed, rammed, trowelled, poured and pumped
- Pre-packaged material overcomes potential on-site mixing variations
- Develops high early strength without the use of chlorides
- No metallic iron content to cause staining

Description

Conbextra GP is a general purpose shrinkage compensated cementitious grout, supplied as a ready to use dry powder. The addition of a controlled amount of clean water produces a flowing shrinkage compensated grout for gap thicknesses from 10mm up to 100mm.

Conbextra GP is a blend of Portland cement, graded fillers and chemical additives which impart controlled expansion in the plastic state whilst minimising water demand. The low water demand ensures high early strength. The graded filler is designed to assist uniform mixing and produce a consistent grout.

Maximum aggregrate size for pumping is 0.7mm.

Standards compliance

Conbextra GP complies to AS 4020-2018 at an exposure level of 15,000mm² per litre; AWQC Report 320823.

Copies of the report are available on the Fosroc website.

Properties

Test Method	Standard	Result				
Compressive Strength	AS 1478.2:2005	Consistency	Water Addition	1 Day	7 Days	28 Days
		Stiff	2.9 - 3.6	34	50	75
		Plastic	3.6 - 3.8	33	45	70
		Flowable	3.8 - 4.0	32	43	65
		Fluid	4.0 - 4.1	30	40	60
Flexural Strength (Modulus of Rupture)	AS 1012.11 - 2000	1 Day 7 Days 28 Days	4.4 MPa 8.7 MPa 13.6 MPa			
Indirect Tensile Strength	AS 1012.10.2000	1 Day 7 Days 28 Days	3.5 MPa 5.6 MPa 6.1 MPa			
Setting Time	AS 1012.18:1996	5.5 hours - initial set 7.5 hours - final set				
Fresh Wet Density		2200 kg/m³ - depending on consistency used				
Alkali reactive particles	Rapid Mortar Bar Test (RTA T363)	Non-reactive				
Flow Characteristics	AS 1478.2:2005	400 - 600mm (Flow Trough) 25 - 30 seconds (Flow cone)				
Minimum Thickness **Maximum Thickness**		10 mm 100 mm				

Clarification of property values: The typical properties given above are derived from laboratory testing. Compressive strengths stated above were measured using cube samples. Test results obtained will vary if carried out to an alternative standard or sample dimensions are used.
Note: Compressive strengths stated were measured at bottom end water, eg., the 28 day strength of 65 MPa for flowable consistency was obtained at a water addition of 3.8 litres water per 20kg bag of Conbextra GP.

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Test Results to ASTM Specification C1107: 2001

Test Method	Standard	Result	
Flow Consistency	ASTM C1437:2007	144%	
Setting Time	ASTM C191:2008	Initial: Final:	4.75 hours 5.25 hours
Plastic Volume Change	ASTM C827:2010	+0.55%	
Hardened Volume Change	ASTM C1090:2010	1 day 3 days 14 days 28 days 56 days	0.08% 0.08% 0.08% 0.07% 0.04%
Compressive Strength	ASTM C109:2011b	1 day 3 days 7 days 28 days	37.8 MPa 55.2 MPa 60.3 MPa 68.6 MPa

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 3.8L per 20kg.

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. For maximum bond, surfaces should be abraded or roughened, preferably by mechanical means such as needle gun, grit blasting, grinding. Bolt holes or fixing pockets must be blown clean of any dirt or debris. These may need to be grouted beforehand.

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

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. This can be achieved by using foam rubber strip or silicone sealant beneath the constructed formwork and between joints.

This must be kept to a minimum. Generally the gap width between the perimeter formwork and the plate edge should not exceed 150mm on the pouring side and 50mm on the opposite side. It is advisable where practical to have no gap at the flank sides.

Pre-soaking

Pre-soaking the formed grouting area with clean water helps to ensure good adhesion of the grout at the interface of the concrete foundation and improves the flow of the grout during the installation. The area should be filled with clean water for a **minimum 2 hours** before the grouting takes place.

Immediately before grouting takes place, any free water should be removed by draining or vacuum.

Particular care should be taken to blow out any bolt holes and pockets.

Mixing

A forced-action mixer is essential. Mixing at a slow speed A forced-action mixer is essential. Mix for 3 to 5 minutes at a slow speed (400/500rpm) in a suitably sized drum using appropriate equipment such the Ransom MDR59 140 x 600 M14 Helical mixing paddle (product code: N4020892-UNIT) fitted to a heavy-duty 1600W mixer, such as Ransom RAN160 (product code: NP7AN160-UNIT) or equivalent.

The selected water content should be accurately measured into the mixing bucket. While mixing, slowly add the total contents of the Conbextra GP bag, mix continuously for 5 minutes, ensuring a smooth, even consistency is obtained. Aways add the powder to the water.

Required Consistency	Litres of water added per 20kg bag	Yield - litres of mixed material
Stiff	2.9 - 3.6	10.6
Plastic	3.6 - 3.8	10.7
Flowable	3.8 - 4.0	10.8
Fluid	4.0 - 4.1	10.9

Mixing larger volumes

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

To enable the grouting operation to be carried out continuously, it is essential that sufficient mixing capacity and labour are available. The use of a grout holding tank with provision to gently agitate the grout, following correct mixing, may be required.

Placing

At 20°C place the grout within 20 minutes of mixing to gain full benefit of the expansion process.

Conbextra GP can be placed in thicknesses from 10mm up to 100mm in a single pour when used as an underplate grout. Where the grouting gap beneath the base plate exceeds the maximum thickness allowed, then the grout can filled / bulked out with Conbextra Grout Aggregate to minimise exotherm heat build up. Alternatively Conbextra Deep Pour is available for pours up to 500mm thick.

Filling/bulking out of the grout should not exceed a ratio of 2:1 grout:aggregate by weight. Please refer to the Conbextra Grout Aggregate TDS for more guidance on bulking out of cement based grouts.

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 prepared before starting. The time taken to pour a batch must be regulated to the time to prepare the next one.

Pouring should be from one side of the void to eliminate any air or pre-soaking water becoming trapped under the baseplate. It is advisable to pour 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.

Flow properties of mixed grout

The flow distances given below in (mm) are intended as a guide. Actual flow distances will vary depending on site conditions:

Gap Depth (mm)	Flowable 100mm head (mm)	Flowable 250mm head (mm)
10	320	1080
20	850	2300
30	1350	2700
40	2000	2700+
50	2700	2700+

Pumping

Where large volumes have to be placed Conbextra GP may be pumped. The maximum aggregrate size in Conbextra GP is 0.7mm, only use pumps capable of pumping this size aggregate.

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

Limitations

Low temperature working

When the air or contact surface temperatures are 5°C or below on a falling thermometer, warm water (30 - 40°C) is recommended to accelerate strength development.

For ambient temperatures below 10°C the formwork should be kept in place for at least 36 hours.

Normal precautions for winter working with cementitious materials should then be adopted.

High temperature working

At ambient temperatures above 35°C cool water (below 20°C) should be used for mixing the grout prior to placement.

Supply

Conbextra GP 20kg:	FC501020-20KG

Yield

Allowance should be made for wastage when estimating quantities required. The approximate yield of a 20kg bag for different consistencies is:

Consistency (AS 1478.2 - 2005 Table 4.1.2.2)	Yield (Litres of mixed material)
Stiff	10.6
Plastic	10.7
Flowable	10.8
Fluid	10.9

Storage

Conbextra GP 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.

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. Parchem 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.

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