

Economical, Class A, shrinkage compensated grout - (gaps: 10 mm to 100 mm thickness)

Uses

Construction Grout is used for general purpose grouting when completely filling concrete voids or grouting between a base plate and a substrate e.g. the grouting of a stanchion base plate.

Advantages

- Gaseous expansion system compensates for shrinkage and settlement in the plastic state
- High ultimate strength and low permeability ensure the durability of the hardened grout
- Can be dry packed, rammed, trowelled, poured and pumped
- No metallic iron content to cause staining
- Prepackaged material overcomes potential on-site batching variations

Description

Construction Grout, general purpose shrinkage compensated cementitious grout, is 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 up to 100 mm.

Construction Grout 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 aggregate size for pumping is 0.3 mm.

Standards Compliance

AS 1478.2-2005 : Appendix E Test for Early Volume Change.

AS 1478.2-2005 : Tabel 4.1.2.2 Tests for Consistency.

Technical Support

Parchem offers a comprehensive range of high quality, high performance construction products. In addition, Parchem offers technical support and on-site advice to specifiers, end-users and contractors.

Specification Clauses

Performance specification

All grouting shown on drawing must be carried out with a pre-packaged cement based product which is chloride free.

It shall be mixed with clean water to the required consistency. The plastic grout must not bleed or segregate.

A positive volumetric expansion shall occur while the grout is plastic by means of a gaseous system.

The compressive strength of the grout must exceed 45 MPa at 7 days and 53 MPa at 28 days.

The storage, handling and placement of the grout must be in strict accordance with the manufacturer's instructions.

Supplier specification

All grouting where shown on the drawing must be carried out using Construction Grout manufactured by Parchem and used in accordance with the manufacturer's Technical Data Sheet.

Consistency 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	300	960
20	760	2080
30	1200	2400
40	1760	2400+
50	2400	2400+

Fosroc® Construction Grout

Properties

Test Method	Standard	Result				
		Consistency	Water Addition	1 Day	7 Days	28 Days
Compressive Strength	AS 1478.2:2005	Stiff	2.6-3.4	40	55	65
		Plastic	3.4-3.6	35	50	57
		Flowable	3.6-3.9	25	45	53
Bond Strength by Pull Off	EN 1542:1999	2.6MPa				
Chloride ion Content	EN 1015-17:2000	0.004%				
Fire Rating	EN 13687-1:2002	Class A1 Non-Combustible				
Flexural Strength (Modulus of Rupture)	AS 1012.11 - 2000	1 Day	4.2 MPa			
		7 Days	8.0 MPa			
		28 Days	8.5 MPa			
Indirect Tensile Strength	AS 1012.10.2000	1 Day	2.9 MPa			
		7 Days	4.7 MPa			
		28 Days	6.0 MPa			
Setting Time	AS 1012.18:1996	5.0 hours - initial set 7.0 hours - final set				
Fresh Wet Density		2200 kg/m ³ - 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)				
Minimum Thickness		10mm				
		100mm				

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 53 MPa for flowable consistency was obtained at a water addition of 3.6 litres of water per 20kg bag of Construction grout.

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, the area of cleaned foundation must be flooded with fresh water. Immediately before grouting takes place, any free water should be removed with particular care being taken to blow out all bolt holes and pockets.

Base plate

It is essential that this is clean and free from oil, grease scale or paint. 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 sealant beneath the constructed formwork and between joints.

In some cases it is practical to use a sacrificial semi-dry sand and cement formwork. The formwork should include outlets for draining of pre-soaking water.

Unrestrained surface area

This 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. It is advisable where practical to have no gap at the flank sides.

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Construction Grout

Mixing and Placing

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 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.

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

Placing

At 23°C place the grout within 20 minutes of mixing to gain full benefit of the expansion process.

Construction Grout can be placed in thicknesses up to 100 mm in a single pour when used as an underplate grout. For thicker sections it is necessary to fill out Construction Grout with well graded silt free aggregate such as Conbextra Grout Aggregate to minimise heat build up.

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 with no air entrapment.

Pumping

Where large volumes have to be placed Construction Grout may be pumped. A heavy duty diaphragm pump is recommended for this purpose. Screw feed and piston pumps may also be suitable. Maximum aggregate size for pumping is 0.3 mm. Ensure the selected pump is 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.

Important notice

A Safety Data Sheet (SDS) and Technical Data Sheet (TDS) are available from the Parchem website or upon request from the nearest Parchem sales office. 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.

Cleaning

Construction Grout 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 10°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 23°C) should be used for mixing the grout prior to placement.

Estimating

Supply

Construction Grout is supplied in 20 kg bags

Material code: FC501000-20KG

Yield

Allowance should be made for wastage when estimating quantities required. The approximate yields for different consistencies are:

Consistency (AS 1478.2-2005 Table 4.1.2.2)	Yield (Litres of mixed material)
Stiff	10.4
Plastic	10.7
Flowable	10.8

Storage

Construction Grout has a shelf life of 24 months if kept in a dry store in sealed bags. If stored in high temperature and high humidity locations, the shelf life may be reduced. Refer to the Use by Date indicated on the packaging.