

Technical Data Sheet

Construction Grout

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 40 MPa at 7 days and 50 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.

PROPERTIES

The following results were obtained at a temperature of 23°C

Consistency	Water Addition	Compressive Strength (MPa) (AS 1478.2-2005)		
	(Litres)		1 Day	7 Days
Stiff	2.6 - 3.4	40	55	65
Plastic	3.4 - 3.6	35	50	57
Flowable	3.6 - 3.9	25	45	53
Fluid	3.9 - 4.0	20	40	50

Note: Consistency measured in accordance with AS 1478.2-2005 table 4.1.2.2.

Note: Compressive strengths stated were obtained under controlled conditions and 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 water per 20kg bag of Construction Grout.

Time for expansion

Start:	15 minutes
Finish:	2 - 3 hours

Fresh wet density:	Approximately 2200 kg/m ³ depending on actual consistency used
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Expansion characteristics (AS 1478.2-2005 Appendix E):

An expansion between 1 - 3% overcomes plastic settlement in the unset material

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.

MIXING AND PLACING

MIXING

For best results a mechanically powered grout mixer should be used. When quantities up to 40 kg are used, a slow speed drill fitted with a high shear mixer is suitable. 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 may be required.

CONSISTENCY OF MIXED GROUT

The quantity of clean water required to be added to each bag to achieve the desired consistency is given below.

Consistency (AS 1478.2-2005 Table 4.1.2.2)	Water Addition (Per 20Kg bag)
Stiff	2.6-3.4
Plastic	3.4-3.6
Flowable	3.6-3.9
Fluid	3.9-4.0

The selected water content should be accurately measured into the mixer. The total contents of the Construction Grout

bag should be slowly added and continuous mixing should take place for 5 minutes. This will ensure that the grout has a smooth even consistency.

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.

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 a 20 kg moisture resistant bags.

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
Fluid	10.9

STORAGE

Construction Grout 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 may be reduced.

ADDITIONAL INFORMATION

Parchem provides a wide range of complementary products which include:

- concrete repair – cementitious and epoxy
- grouts and anchors – cementitious and epoxy
- waterproofing membranes – liquid applied, cementitious and bituminous sheet membranes
- waterstops – pvc and swellable
- joint sealants – building, civil and chemical resistant
- industrial flooring systems – cementitious and epoxy
- architectural coatings
- filler boards – swellable cork, bituminous and backing rod
- ancillary products

For further information on any of the above, please consult with your local Parchem sales office.

IMPORTANT NOTICE

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