

Conbextra HES

High early strength, rapid setting, flowable, cementitious precision grout (gaps 15 mm to 150 mm thickness)

USES

Conbextra HES is used for free flow grouting in a wide range of applications where rapid strength gain is a prerequisite.

ADVANTAGES

- Rapid strength gain facilitates rapid installation and operation of plant within a matter of hours
- High strength gain is achievable even at low temperatures
- Excellent initial flow and flow retention
- Unique system compensates for shrinkage in hardened state
- High ultimate strength and low permeability ensure durability of the hardened grout
- Chloride free
- Suitable for pumping or pouring over a large range of application consistencies and temperatures

DESCRIPTION

Conbextra HES, rapid set high strength cementitious precision grout, is supplied as a ready to use powder. The addition of a controlled amount of clean water produces a free-flowing grout for gap thicknesses of 15 - 150 mm. In addition the low water requirement ensures high early strength and long term durability.

Conbextra HES is a blend of cements, graded aggregates and additives which impart controlled expansion in hardened state. The aggregate grading minimises segregation and bleeding over a wide range of application consistencies.

Maximum aggregate size is 5.0 mm.

TECHNICAL SUPPORT

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

SPECIFICATION CLAUSES

PERFORMANCE SPECIFICATION

All grouting (specify details and areas of application) must be carried out with a pre-packaged cement based product, which is non-metallic and chloride-free.

It shall be mixed with clean water to the required consistency and not exhibit bleed or segregation.

The compressive strength of the grout must be at least 35 MPa at 4 hours (Plastic consistency).

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

SUPPLIER SPECIFICATION

All grouting (specify details and areas of application) must be carried out using Conbextra HES manufactured by Parchem and used in accordance with the manufacturer's current Technical Data Sheet.

PROPERTIES

Compressive strength

Plastic consistency:	2 hours	30 MPa
	4 hours	35 MPa
	8 hours	40 MPa
	1 day	42 MPa
	28 days	58 MPa

Compressive strength

at flowable consistency:	2 hours	25 MPa
	4 hours	30 MPa
	8 hours	35 MPa
	1 day	37 MPa
	28 days	50 MPa

Setting time at 23°C

(AS 1012.18-1996)	Initial set:	30 - 40 minutes
	Final set:	40 - 50 minutes

Working time at 23°C: 20 minutes

Fresh wet density: Approximately 2200 kg/m³ depending on actual consistency used

Note: compressive strengths stated were obtained under controlled conditions at bottom end water, eg; the 28 day strength of 50 MPa for flowable consistency was obtained at 2.3 litres water per 20 kg bag of Conbextra HES.

APPLICATION INSTRUCTIONS

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 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.

BASE PLATE

It is essential that this is clean and free from oil, grease, paint 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 as Conbextra HES is a free flowing grout. This can be achieved by using foam rubber strip or Construction Silicone 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 the pre-soaking water.

The unrestrained surface area of the grout 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 50 mm on the opposite side. There should be no gap at the flank sides.

MIXING

For best results a mechanically powered grout mixer should be used. For quantities up to 40 kg a slow speed drill fitted with a high shear paddle is suitable. Larger quantities will require a high shear vane mixer. Do not use a colloidal impeller mixer.

It is essential that machine mixing capacity and labour availability is adequate to enable the grouting operation to be carried out continuously. This may require the use of a holding tank with provision for gentle agitation to

maintain fluidity.

The selected water content should be accurately measured into the mixer. Slowly add the total contents of the Conbextra HES bag, mix continuously for 5 minutes, ensuring a smooth, even consistency is obtained.

CONSISTENCY OF MIXED GROUT

To achieve the required consistencies, the amount of clean water that is added to Conbextra HES at 23°C is:

Consistency	Water Addition (litres) 20 kg
Plastic	2.0 - 2.3
Flowable	2.3 - 2.6

PLACING

Place the grout within 10 minutes of mixing.

Conbextra HES can be placed in thicknesses from 15 mm up to 150 mm 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 be filled / bulked out with Conbextra Grout Aggregate* to minimise exotherm heat build up. Alternatively Conbextra Deep pour is available for pours up to 500 mm thick.

Filling / bulking out of the grout should not exceed a ratio of 2 : 1 grout to aggregate. The addition of aggregate will change the characteristics of the grout.

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 a Concure curing membrane, or the continuous application of water and/or wet hessian.

CLEANING

Conbextra HES 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 15°C or below on a falling thermometer, warm water (30°C) is recommended to accelerate strength development.

For ambient temperatures below 15°C the grout consistency should be flowable and the formwork should be maintained in place for a minimum of 24 hours.

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

HIGH TEMPERATURE WORKING

Conbextra HES should not be used at ambient temperatures above 35°C as premature setting of the grout may occur making handling and placement very difficult.

ESTIMATING

SUPPLY

Conbextra HES and Conbextra Grout Aggregate are available in 20kg moisture resistant bags.

Consistency	Yield (litres) 20 kg
Plastic	10.00
Flowable	10.20

STORAGE

Conbextra HES 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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