



Chem Coats (Pvt) Ltd.

ChemDermix 395

Liquid epoxy grouting compound

DESCRIPTION

Two-component, modified-epoxy liquid.

USES

As a grouting medium, either as supplied or converted into a mortar, for fixing starter bars, bolts and other similar items, vertically down into concrete or rock. As a flow able grout or bedding for areas of awkward access. As a fast setting crack repairing compound.

FEATURES AND BENEFITS

- Stronger than surrounding concrete and steel
- Easy pouring for upstanding bolts and concrete road/slab cracks
- Easy access to narrow gap horizontal areas

SURFACE PREPARATION

All surfaces must be clean, sound and dry. Cast concrete must be free of all laitance, dust and foreign matter. Drilled concrete and rock must be free of dust and debris and if wet-drilled must be dry and free of all traces of slurry.

Any glaze caused by core drilling must be removed by mechanical roughening to ensure good bonding between the adhesive and the concrete / rock surface.

Close-fitting burrs attached to a long shaft mounted in a power drill will aid in this respect.

Pockets must be both free of standing water and surface dry. Smooth steel should be abrasive blast cleaned, and must be free of scale, rust and oily material.

Deformed and threaded bars should be oil and grease free and preferably free of rust and scale.

BONDING / PRIMING

Self-priming.

MIXING

Stir both containers individually and ideally use a can opener to remove the lip of the containers.

Add the entire contents of the activator tin to the base and stir with a flat paddle until an even streak-free mixture results. This takes at least five minutes.

If a mortar is required, premix the base and activator and then add silica grit aggregate. Up to two volumes may be used and the whole mixture must be stirred until the aggregate is evenly wetted.



COVERAGE

Grouting with **ChemDermix 395** - Quantity Calculations:

The quantity of **ChemDermix 395** required may be calculated from the formula:

$$0.8 (D+d)(D-d) HN = \text{Litres of grout required} \\ 1000$$

Where

D = diameter of hole in cm

d = diameter of metal in cm

H = depth of hole in cm

N = number of holes

This gives a figure for liquid consumption without any allowance for wastage.

A filled grout will require about 0.6 of this quantity of liquid when filled 1.5:1

Properties of Wet Material

Mixing ratio	Do not split kit
Density (mixed)	1.9 g/cm ³
Flash point	> 100° C
Dilution	Do not dilute
Consistency	Low viscosity liquid
Toxicity	Uncured material is toxic
Shelf life	12 months from date of manufacture
Storage conditions	Store under cover in cool place

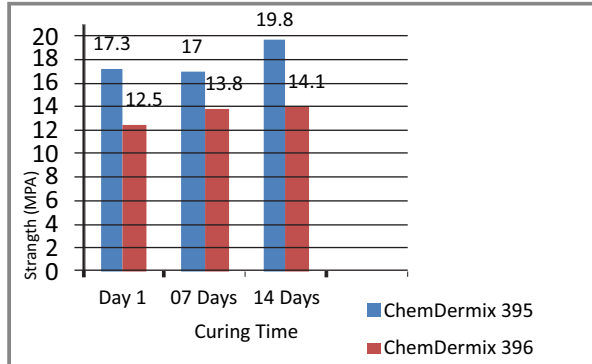
PROPERTIES DURING APPLICATION

Application by	Pouring or injection gun.As a flowable mortar by pouring
Work life (as mortar- 500ml)	15° C – 80 mins 20° C – 60 mins 25° C – 40 mins 30° C – 30 mins 35° C – 20 mins
Work life (as mortar – 1l kit)	15° C – 60 mins 20° C – 45 mins 25° C – 30 mins 30° C – 22 mins 35° C – 15 mins
Volume solids	100 %



Curing time @ 25° C	Touch dry - 6 hrs Practical cure - 24 hrs Full cure - 7 days
Application temperature range	10° C - 40° C Temperature of metal to be grouted should not exceed 25° C at time of grouting. if application temperature are above 30° C consult Chem Coats Technical Department for special precautions
	1l mixed, unfilled ChemDermix 395 will be sufficient for : 1l annulus volume
Application rate	1l mixed ChemDermix 395 filled with dry silica grit will be sufficient for Approx 1.9l annulus vol. filled at a loading of 1.5 :1 Approx 2l annulus vol. when filled at loading of 2 :1.
	None of these figures allow for any wastage, which can run as high as 20% -25%.
Maximum application rate	Do not grout unfilled Chem Dermix 395 into a hole larger than 1.5 times bar diameter. When grouting with filled ChemDermix 395 , annulus width should be kept as small as possible.
Fire resistance of wet material	Non-flammable

PROPERTIES OF CURED MATERIAL	
Maximum service temperature	70°C
Water resistance	Excellent
Toxicity	Non-toxic
Solvent resistance	Resists aliphatic solvents, vegetable and mineral oils and greases, petroleum fuels
Cured compressive strength @ 25° C unfilled	34.1mPa
Modified Arizona Shear Test	Prisms failed in concrete
Grouting test 15 diameter embedment, annulus 25% of diameter	12mm HT bars fractured
Shrinkage during curing	Negligible



Grouting with ChemDermix 395 – Basis for Strength Calculations:

Given adequate concrete strength and provided that a bar of deformed or threaded steel, either mild or high tensile, is embedded to a depth of at least 15 diameters, it can be expected that any failure of the assembly will be due to tensile rupture of the steel.

Thus **ChemDermix 395** grouting allows the steel and the concrete to operate at full design strength.

Regarding the diameter ratio of hole to rod, it has been shown that the ultimate average bond strength is at its maximum at a ratio of 1.3:1.

Ultimate average bond stress reduces as the hole:rod ratio increases to a value of 1.67:1. Thereafter it remains constant. An increase of diameter ratio from 1.3 to 1.67 will reduce the ultimate average bond strength by some 20%.

APPLICATION

For best results mixed material should be poured into the hole to such a level that when the bar is inserted, material displaced just reaches the top of the hole. Bar should be inserted into the compound with a rotary motion to ensure full wetting of both bar and concrete faces. Do NOT merely drop the bar in as this can result in air entrapment. If the bar is already positioned, pour compound slowly into the annulus, punning with a piece of suitable wire to help release air bubbles.

If it is important that the bar must remain vertical, a jig or template must be used until the compound has set.

Where **ChemDermix 395** mortar is being used to bed an object (i.e. fill a gap between horizontal surfaces) pouring must be done from one point only, to prevent air entrapment. Provision must be made for any entrapped air to escape by venting, if necessary. If shuttering has to be provided to retain the grout whilst setting, shutters must be treated with a release agent or faced with plastic sheeting. It will be necessary to provide an inlet point into the shuttering so that a head of compound can be built up to promote flow. Again venting must be provided.

CLEANING

Chem Coats super brush cleaner before dried/cure.

PROTECTION ON COMPLETION

Against traffic and spillage until cured.



TEMPERATURE AND RELATIVE HUMIDITY

See "Properties of Cured Material" and "Properties During Application".

MODEL SPECIFICATION

Two component structural liquid epoxy grouting compound for fixing starter bars vertical down, holding down bolts etc. Low creep.

The grouting compound shall be **ChemDermix 395**, a two component, flow able structural liquid epoxy applied in accordance with the manufacturers recommendations, **Chem Coats Construction Chemicals**.

PACKAGING

ChemDermix 395 is supplied in 1l and 5l metal containers.

HANDLING & STORAGE

This product has a shelf life of 12 months if kept in a dry cool place in the original packaging. In more extreme conditions this period might be shortened.

HEALTH & SAFETY

Wet **ChemDermix 395** is toxic, but nonflammable. Always ventilate the working area well during application and drying. Always wear gloves and eye protection when working with the material and avoid excessive inhalation and skin contact.

If material is splashed in the eye, wash with copious quantities of clean water and seek medical attention.

Cured **ChemDermix 395** is inert and harmless.

IMPORTANT NOTE

The information given in this data sheet is based on current development work and many years of field experience. Whilst every effort is made to ensure that the information is reliable, we cannot accept responsibility for any work carried out with our materials as we have no controls over methods of applications, site conditions etc. In view of the continuing research and development being undertaken in our laboratories we advise customers in their own interest to ensure that this data sheet has not been superseded by a more up-to-date publication. All products are sold subject to our standard conditions of sale which are available on request. Field services, where provided, does not constitute supervisory responsibility. For additional information, please contact your local **Chem Coat's** representative.

RANGE OF PRODUCTS

<u>WATERPROOFING SYSTEMS</u> <u>INDUSTRIAL FLOOR SURFACES</u> <u>PROTECTIVE COATINGS</u>	<u>PREPACKED REPAIR MORTARS</u> <u>CEMENTITIOUS & EPOXY GROUTS</u> <u>CONCRETE ADMIXTURES</u>	<u>SEALANTS</u> <u>CRACK INJECTION</u> <u>CONCRETE ADHESIVE</u>
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