MEGAPOXY H

LOW VISCOSITY EPOXY RESIN - HYDROPHILIC

Epoxy concrete binder, wet to dry concrete adhesive. Repairs of cracked concrete, underwater and splashzone repairs.
With dry aggregate : Non-slip floors. wear resistant floor toppings. Rail and machinery grouting, bridge load bearing pads.

PRODUCT SPECIFICATION

Appearance : Resin	: Clear liquid
Hardener	: Clear liquid
Mixed Viscosity at 25°C	: 300 - 800 cps.
Specific Gravity	: 1.1
Flash Point	: Above 100°C

PROPERTIES UNCURED

Mixing Ratio by Volume	: Part A - 3 parts
	: Part B - I part
Pot Life (1 litre mix)	: 30 minutes at 25°C
Cure Time	: 48 hours at 5°C
	: 36 hours at 15°C
	: 24 hours at 25°C
	: 12 hours at 35°C
Tack-free time	: 6 hours at 15°C
(thin film initial cure)	: 4 hours at 25°C
	: 2 hours at 35°C

MIXING PROCEDURE

Measure out 3 volumes of Part "A" and 1 volume of Part "B". Place into a clean mixing vessel, such as plastic bucket and stir thoroughly. If aggregate is to be used, add gradually while mixing fine aggregate first, followed by slow addition of coarse aggregate. Thorough mixing is essential. Incomplete mixing will result in poor physical properties.

VIVACITY ENGINEERING PTY. LTD.
3 Sefton Road, Thornleigh, NSW 2120 • P.O. Box 71, Hornsby, NSW Australia, 1630
Telephone +61-2-9875 3044 Fax +61-2-9875 3665 email:info@megapoxy.com
www.megapoxy.com A.B.N. 78 305 545 664

SURFACE PREPARATION

METALS : Metals should be grit blasted to AS CK 9.4 Class 3 finish. If this is not possible, mechanically abrade to clean bright metal surface and degrease by flooding the abraded surface with Megapoxy Degreaser. Wire brushing is not entirely satisfactory and gives minimal adhesion only.

CONCRETE : Concrete should be free from grease and oil. If necessary, clean with industrial heavy duty degreaser. When clean, remove surface laitence. This is best done by mechanical abrasion such as scabbling, grit blasting or grinding. If this is not possible acid etching must be carried out. Mix concentrated hydrochloric acid with equal volume of water and spread at the rate of 0.5 litre per square metre of concrete surface. Allow to react for about 10 minutes and wash the area thoroughly and scrub with a stiff bristled broom to remove loose sand. Allow to dry for 24 hours. For maximum adhesion concrete should be surface dry.

PAINTED SURFACES : Steps should be taken to remove all paint.

Metals : Good quality paint stripper should be used, followed by grit blasting.

Concrete : The surface may be either flame-cleaned, or mechanically treated with a scutching tool. Complete the preparation by grinding or scabbling.

BASIC FORMULATIONS

CRACK SEALING AND ANCHORING STEEL INTO CONCRETE

Mixing Ratio by Volume : Part A - 3 parts
: Part B - I part

Mix thoroughly and dispense by pouring or pressure injection.

TREATMENT OF CRACKS : The treatment of cracks in concrete not expected to undergo further movement can be carried out by one of the following methods :

Heat Treatment : The temperature of concrete surrounding the crack is slowly raised to 80°C and above formulation is applied over the crack as a paint. On cooling the resin will be drawn into the crack where it will cure and provide a water tight seal.

CAPILLARY ACTION : Methylated Spirits or Acetone is applied to the crack followed by brush coating of Megapoxy H. As the solvent dries out, the resin is drawn into the crack.

PRESSURE INJECTION : Seal outside of crack with Megapoxy PM non-sag paste system. Some "V-ing" may be necessary to obtain better bonding. When applying the Megapoxy PM, bond over the crack nuts into which ball-less grease nipples can be screwed prior to injection the next day. Nuts should be placed 200 to 400 mm apart, depending on the depth of the crack. The deeper the crack, the closer the nut. Megapoxy H can be injected by grease gun or pressure pot. A nipple is screwed into the bottom-most nut and Megapoxy H injected until the formulation exudes from adjacent nut. Remove the nipple and plug with fitting bolt. The nipple is then screwed into the next nut and the procedure repeated until the crack is full. In some cases it may be necessary to seal concrete on the opposite side with Megapoxy PM. The following day the nuts can be removed with a chisel leaving a minimum of grinding to achieve a clean appearance.

STEEL ANCHORING : For anchoring steel into concrete drill a hole approximately 1.5 diameters of the steel to be grouted. Any dust or foreign matter must be blown out with oil-free, dry compressed air. Set the steel into the hole and pour the above Megapoxy H formulation from one side to allow air to escape. Allow to cure for 24 hours. For grouting of steel horizontally use Megapoxy HT instead of Megapoxy H. The steel should be grit blasted and degreased to achieve good bond.

TYPICAL PULL OUT STRENGTH

40 MPa concrete

14 mm deformed bar inserted to depth 10 x diameter of bar : > 50 kN
25 mm deformed bar inserted to depth 8 x diameter of bar : > 150 kN
14 mm deformed bar inserted to depth 8 x diameter of bar : > 50 kN
25 mm deformed bar inserted to depth 10 x diameter of bar : > 150 kN

EPOXY MORTARS AND EPOXY CONCRETE
POURABLE EPOXY MORTAR (GROUT)

Mixing Ratio by Volume	: Part A - 3 parts
	: Part B - I part
Silica 50N by volume	: 4 - 8 parts

The proportion of silica 50N (epoxy quality fine sand) can be varied to provide suitable pourability in cold and warm weather conditions.

TROWELLABLE EPOXY MORTAR

1. Easy to work mortar :

Mixing Ratio by Volume	: Part A - 3 parts
	: Part B - I part
Silica 50N by volume	: 12 parts

Prior to placement of this mortar prime the prepared concrete surface with a brush applied coat of pre-mixed Megapoxy H. Finish the placed mortar using a steel trowel. To avoid sticking and dragging of the trowel, broadcast a thin layer of Silica 50N on the mortar surface and work with trowel until desired surface finish is achieved. Allow to cure for 24 hours.

Compressive Strength : 90 MPa

2. Economy mortar :

Mixing Ratio by Volume	: Part A - 3 parts
	: Part B - I part
Silica 50N	: 10 parts
Silica 8/16	: 10 parts

Prime the concrete surface, place the mortar and finish as above.

EPOXY CONCRETE

High strength Megapoxy H based concrete that develops compressive strength of 60 MPa after 24 hour cure at 25°C and achieves 90 MPa compressive strength after 3 days can be prepared according to the following formula :

Mixing Ratio by Volume	: Part A - 3 parts
	: Part B - I part
Silica 50N	: 10 parts
Blue Metal 10 - 20 mm.	: 10 parts

Premix Megapoxy H, add the silica sand while mixing and incorporate the blue metal on a mortar board using a trowel or a shovel. Prime the concrete surface, place the epoxy concrete and finish as above.

NEW TO OLD CONCRETE ADHESIVE

Mixing Ratio by Volume : Part A - 3 parts
: Part B - I part

Mix Megapoxy H as detailed above and apply by brush, roller or airless spray to prepared old concrete at the rate of 1 to 1.5 litres per square metre. Place new concrete within 15 minutes of applying Megapoxy H to ensure good bonding. Protect newly placed concrete against rapid loss of water by covering with a plastic sheet. For vertical aid overhead rendering use Megapoxy HT in place of Megapoxy H.

CLEANING UP

To keep mixing implements and working tools clean use Megapoxy Thinners. Use disposable rubber gloves to protect hands and maintain proper industrial hygiene. For further details refer to Bulletin No. 100.

MEGAPOXY H - TYPICAL CURED PROPERTIES

Maximum operating temperature	: 100°C
Tensile Strength	: 40 MPa
Tensile Shear Strength, steel/steel	: 13 MPa
Compressive Strength	: 100 MPa
Modulus of Elasticity	: 1.1 x 10,000 MPa
Flexural Strength	: 40 MPa
New to old Concrete Bonding	: Slant Shear Test: 36 MPa

AVAILABILITY

Megapoxy H is available ex stock in 4 litre and 20 litre kits. In each kit Part "A" and Part "B" are measured in correct mixing ratio for immediate use.

TECHNICAL SERVICE

All purchasers of Megapoxy products are invited to avail themselves of our technical service on epoxy resins. The methods and systems outlined in this bulletin are the best available at the present time, however continual research and development is being carried out and could result in change without prior notice.