

Low Viscosity Hydrophilic Epoxy Resin



Technical Data Sheet

DESCRIPTION	Megapoxy H is a low viscosity, 100% solids, resin based, solvent-free, hydrophilic liquid resin. It is suitable for use in repairs of structures that are in contact with potable water. Megapoxy H complies with AS/NZS 4020:2018 “Testing of Products For Use In Contact with Drinking Water”. Megapoxy H is resistant to hydrogen sulphide that may be present in pipes and plants used for treatment of sewage. Megapoxy H has excellent static and dynamic mechanical properties, and can be used with the fine aggregates to make high strength epoxy mortar. It can be used for wet to dry concrete bonding. Repairs of cracked concrete, underwater and splashzone repairs. Megapoxy H has very low volatile organic compounds.																																	
RECOMMENDED APPLICATIONS	• New to Old Concrete Bonding • Concrete Crack Repair • Underwater and Splashzone Repairs • Steel Anchoring	• Coating • Floor Repairs • Low Pressure Injection • Epoxy Mortars																																
PROPERTIES	<table><tr><td>Mixing Ratio by Volume</td><td>3 Part A to 1 Part B</td></tr><tr><td>Work Time at 25°C:</td><td>30 minutes</td></tr><tr><td>Minimum Cure Time at 15°C</td><td>48 hours</td></tr><tr><td>Minimum Cure Time at 25°C</td><td>24 hours</td></tr><tr><td>Minimum Cure Time at 35°C</td><td>12 hours</td></tr><tr><td>Thin Film Cure at 25°C</td><td>5-6 hours</td></tr><tr><td>Minimum Application Temperature</td><td>10°C</td></tr><tr><td>Viscosity Part A at 25°C</td><td>1300 - 1900cps</td></tr><tr><td>Viscosity Part B at 25°C</td><td>75 - 90cps</td></tr><tr><td>Mixed Viscosity at 25°C</td><td>800cps</td></tr><tr><td>S.G. Part A at 25°C</td><td>1.12 - 1.14</td></tr><tr><td>S.G. Part B at 25°C</td><td>0.97 – 0.99</td></tr><tr><td>Mixed S.G. at 25°C</td><td>1.09</td></tr><tr><td>Colour Part A</td><td>Clear or N35 Grey</td></tr><tr><td>Colour Part B</td><td>Clear</td></tr><tr><td>Colour Mixed</td><td>Clear or N35 Grey</td></tr></table>		Mixing Ratio by Volume	3 Part A to 1 Part B	Work Time at 25°C:	30 minutes	Minimum Cure Time at 15°C	48 hours	Minimum Cure Time at 25°C	24 hours	Minimum Cure Time at 35°C	12 hours	Thin Film Cure at 25°C	5-6 hours	Minimum Application Temperature	10°C	Viscosity Part A at 25°C	1300 - 1900cps	Viscosity Part B at 25°C	75 - 90cps	Mixed Viscosity at 25°C	800cps	S.G. Part A at 25°C	1.12 - 1.14	S.G. Part B at 25°C	0.97 – 0.99	Mixed S.G. at 25°C	1.09	Colour Part A	Clear or N35 Grey	Colour Part B	Clear	Colour Mixed	Clear or N35 Grey
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CURED PROPERTIES	Ultimate Compressive Strength - ASTM C579	130MPa
	Bond Strength Concrete - ASTM D7234	>3MPa (concrete failure)
	Tensile Bond Strength Steel - ASTM D897	18MPa
	Modulus of Elasticity - ASTM C579	1.7GPa
	Flexural Strength - ASTM D790	59MPa
	Tensile Strength - ASTM D638	57MPa
	Tensile Lap Shear Strength - ASTM D1002	7MPa steel to steel
	Hardness - Shore D - ASTM D2240-00	75 minimum
	Dielectric Strength (kV/mm)	13.6
	Surface Resistivity (Ohm) - ASTM D257	10 ¹²
	Volume Resistivity (Ohm.cm)	2.2 x 10 ¹¹
	VOC (g/l) - ASTM D3960	2
	Water Vapour Transmission - ASTM E96/E96M	0.095 (gram/hr m ²)
	Water Absorption - ASTM D570	0.184 Increase in weight (%)
CHARACTERISTICS	• Very Low VOC • Hydrophilic • Thin Liquid • Easily mixed manually or mechanically • Very high strength permanent bonds • Excellent tensile and compressive strengths, superior to concrete • Excellent chemical resistance	
SURFACE PREPARATION	Concrete Concrete should be free from grease and oil. If necessary, clean with industrial heavy duty degreaser. When clean, remove surface laitance. 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 meter 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 the concrete should be surface dry. Metal Surfaces Metals should be grit blasted to AS 1627.2.2002. If this is not possible, mechanically abrade the surface to a clean, bright metal surface. Once this abrasion is complete, degrease the surface by flooding with an industrial grade degreaser. Wire brushing is not entirely satisfactory and gives minimal adhesion only. Coated Surfaces It is recommend to remove all coatings prior to bonding, bonding to coated surfaces will give inferior bond strengths compared to bonding directly to a prepared substrate. Concrete: The surface may be either flame-cleaned, or mechanically treated with a scutching tool, to remove all traces of paint. Complete the preparation by diamond grinding or scabbling. Metals: Steps should be taken to remove all paint and/or galvanizing. Good quality paint stripper should be used, followed by grit blasting or grinding to a bright metal finish.	

Technical Data Sheet

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 mixed Megapoxy H 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
BASIC FORMULATION FOR CRACK SEALING AND ANCHORING STEEL INTO CONCRETE	Mixing Ratio by volume 3 Parts A to 1 Part B Mix thoroughly for a minimum of 3 minutes and dispense by pouring or pressure injection.
CRACK REPAIR - 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: Capillary Action Methylated Spirits or Acetone is applied to the crack followed by brush coating of mixed Megapoxy H. As the solvent dries out, the resin is drawn into the crack. Low Pressure Injection Prepare concrete around the crack by lightly grinding the surface. Bond crack injection balloons over the crack at a distance of 300mm apart, depending on the crack width, using Megapoxy PM. Seal over the balloon bases and crack to a minimum width of 50mm either side of the crack, using Megapoxy PM. Once the Megapoxy PM has cured, mix the Megapoxy H and pour into the back of the crack injection gun. Open all the crack injection balloon taps, attach the crack injection gun to the crack injection balloon and pump the Megapoxy H into the balloon until it comes out of the next balloon or the balloon inflates to approx. 20mm. Turn tap off and repeat the process until all the balloons are inflated and remain inflated. Once every thing has cured, knock balloons of with a chisel below the steel clip, then using a 40grit flap disc, grind the surface back smooth. 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 it exudes from the 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.

Technical Data Sheet

IMPORTANT INFORMATION

It is essential that the correct mixing ratio be used and that the Part A and Part B are thoroughly mixed together before use. Inaccuracies and poor mixing will result in lower physical properties of the cured system and, if the error is sufficiently large, the system may not cure satisfactorily and discolour on ageing.

EPOXY MORTARS AND EPOXY CONCRETE

POURABLE EPOXY MORTARS

POURABLE EPOXY MORTAR (GROUT)

Mixing Ratio by volume

3 Parts A
to
1 Part B
4-8 Parts Silica 50N by volume

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

**Ultimate Compressive Strength: 4 Parts 50N: ~100MPa.
8 Parts 50N: ~80MPa**

LARGE POUR POURABLE EPOXY MORTAR (GROUT)

Mixing Ratio by volume

3 Parts A
to
1 Part B
12 Parts Silica 16/30 by volume

This mix of Megapoxy H and silica 16/30 (epoxy quality sand) can be used for larger and deeper sized pour while still maintaining strength. It can be varied slightly to provide different pourability. Suitable for large truncation pocket grouting.

Ultimate Compressive Strength : ~60MPa

TROWELLABLE EPOXY MORTARS

EASY TO WORK MORTAR

Mixing Ratio by volume

3 Parts A
to
1 Part B
12 Parts Silica 50N by volume

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.

Ultimate Compressive Strength : ~60MPa

Technical Data Sheet

HIGH STRENGTH CORRECTIVE RESURFACING MORTAR.	Mixing Ratio by volume 3 Parts A to 1 Part B 12 Parts Silica 50N by volume 12 Parts Silica 30/60 by volume 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. This provides a moisture tolerant epoxy modified leveling screed up to 6mm in thickness. Ultimate Compressive Strength : ~60MPa
EPOXY CONCRETE	
HIGH STRENGTH MEGAPOXY H BASED CONCRETE	Mixing Ratio by volume 3 Parts A to 1 Part B 10 Parts Silica 50N by volume 10 Parts Blue Metal 10 - 20 mm by volume 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. This provides a moisture tolerant epoxy modified leveling screed. Ultimate Compressive Strength : ~80MPa
NEW TO OLD CONCRETE ADHESIVE	Mixing Ratio by volume 3 Parts A to 1 Part B 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. For vertical and overhead rendering use Megapoxy HT in place of Megapoxy H.
CLEANING	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 the Megapoxy H Safety Data Sheets.
PACKAGING	Megapoxy H is available in 4lt & 20lt kits. Product should be stored in cool dry store.
TECHNICAL SERVICE	All purchasers of Megapoxy Products, are encouraged to avail themselves of our Technical Service for our Megapoxy Products. The information in this Bulletin is correct at time of publication, however continual research and development is being carried out and specs may change without notice.