Megapoxy

# HX

## Extra Low Viscosity Epoxy Resin


## Technical Data Sheet

**DESCRIPTION**

Megapoxy HX is a specially formulated extra low viscosity, 100% solids, resin based, solvent-free, hydrophilic liquid resin. Megapoxy HX is used regularly for the repair of cracked concrete by gravity penetration or low pressure injection. Megapoxy HX is also suitable for impregnation of porous substrates such as masonry and timber. Megapoxy HX has also been used successfully as a low viscosity laminating resin for fibreglass work.

**RECOMMENDED APPLICATIONS**

- Casting
- Concrete Crack Repair
- Low Pressure Injection
- Surface Hardening
- Floor Repairs
- Laminating
- Masonry Sealing
- Capillary Action
- Vacuum Bagging

**PROPERTIES**

| | |
|---|---|
| Mixing Ratio by Volume | 3 Part A to 1 Part B |
| Work Time at 25°C: | 60 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 | 6-8 hours |
| Minimum Application Temperature | 10°C |
| Viscosity Part A at 25°C | 400 - 600cps |
| Viscosity Part B at 25°C | 15 - 20cps |
| Mixed Viscosity at 25°C | 200cps |
| S.G. Part A at 25°C | 1.10 - 1.12 |
| S.G. Part B at 25°C | 0.95 - 0.97 |
| Mixed S.G. at 25°C | 1.07 |
| Colour Part A | Clear |
| Colour Part B | Clear |
| Colour Mixed | Clear |

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## CURED PROPERTIES

| | |
|---|---|
| Yield Compressive Strength - ASTM C579 | 70MPa |
| Ultimate Compressive Strength - ASTM C579 | 140MPa |
| Bond Strength Concrete - ASTM D4541 | >3MPa |
| Tensile Bond Strength Steel - ASTM D897 | 20MPa |
| Modulus of Elasticity - ASTM C579 | 0.055GPa |
| Flexural Strength - ASTM D790 | 80MPa |
| Tensile Strength - ASTM D638 | 59MPa |
| Tensile Lap Shear Strength - ASTM D1002 | 15MPa (steel to steel) |
| Hardness - Shore D - ASTM D2240 | 75 |
| Dielectric Strength (kV/mm) | 24.4 |
| Surface Resistivity (Ohm) - ASTM D257 | $10^{12}$ |
| Volume Resistivity (Ohm.cm) | $1.23 \times 10^{11}$ |
| VOC (g/l) - ASTM D3960 | 6 |

## CHARACTERISTICS

- 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.

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| | |
|---|---|
| **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:<br><br>**Capillary Action**<br>Methylated Spirits or Acetone is applied to the crack followed by brush coating of mixed<br>Megapoxy HX. As the solvent dries out, the resin is drawn into the crack.<br><br>**Low Pressure Injection**<br>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 HX 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 HX 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.<br>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.<br><br>**Pressure Injection**<br>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.<br>Nuts should be placed 200 to 400 mm apart, depending on the depth of the crack.<br>The deeper the crack, the closer the nut. Megapoxy HX can be injected by grease gun or pressure pot. A nipple is screwed into the bottom-most nut and Megapoxy HX injected until it exudes from the adjacent nut. Remove the nipple and plug with fitting bolt.<br>The nipple is then screwed into the next nut and the procedure repeated until the crack is full.<br>In some cases it may be necessary to seal concrete on the opposite side with Megapoxy PM.<br>The following day the nuts can be removed with a chisel leaving a minimum of grinding to achieve a clean appearance. |
| **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. |
| **CLEANING** | To keep mixing implements and working tools clean, use Megapoxy Thinners.<br>Use disposable rubber gloves to protect hands and maintain proper industrial hygiene.<br>For further details refer to the Megapoxy HX Safety Data Sheet. |
| **PACKAGING** | Megapoxy HX is available in 4lt & 20lt kits.<br>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. |