

Epoxy Plus Injection Resins

Low viscosity, thixotropic and wet
crack resin and hardener systems

for injection of cracked concrete,
masonry and brickwork

ep. Injection Resins

About this product

Three grades of Epoxy Plus Injection Resin are available to provide systems to cover most applications. The Low Viscosity (L.V.) epoxy resin is specially developed for the structural repair of fine cracks in concrete structures. It is designed to fill the finest cracks down to 0.2mm where both sides of the crack can be sealed prior to injection. It can be mixed by hand, stirring with a palette knife or similar until a uniform colour is achieved. Alternatively it can be mixed using special metering and mixing injection resin machines.

The Thixotropic (T) grade is a moisture tolerant gel-like epoxy resin which will repel water from damp cracks and was developed for applications where it is not possible to seal the cracks completely or where wider cracks are involved. This grade is also suitable for consolidating inner and outer cavity walls and for grouting-in horizontal starter bars, bolts etc. The resin can be applied to cracks from 0.5 mm to 5 mm wide. Short cracks between 5 mm and 10 mm can also be filled with the thixotropic resin but for bulk filling of wider cracks, it is suggested that Epoxy Plus Thixotropic Anchor Grout (EPTAG) is used instead.

The Wet Crack (W.C.) grade is similar to the low viscosity system but is more suitable where the crack is wet. This grade is not for use where water leakage is under pressure. Consult for preferred system.

Where to use Epoxy Plus Injection Resin

Resin injection is particularly useful as a method of carrying out structural repairs of concrete and masonry. It forms a bond between the broken sections stronger than the material itself and seals the crack against ingress of water and aggressive agents which may have a deleterious effect on reinforcement.

It is generally accepted that cracks in reinforced concrete narrower than 0.2mm need not be injected and some form of surface sealing is normally sufficient. Before deciding to inject cracks it is most important to establish the cause of the cracks and ensure that they are not still moving by using suitable tell-tale devices. If movement is occurring, the crack should be treated as a normal movement joint.

Where major structural defects are suspected, a specialist concrete repair company should be consulted.

In cracks wider than 10 mm, the Epoxy Plus Thixotropic Injection Resin may develop significant temperature rises due to heat of reaction and this could lead to some shrinkage. Tests have shown that below 10 mm there is sufficient thermal capacity not only within the thixotropic filler but also in the parent concrete either side of the crack to prevent heat build-up.

How to use Epoxy Plus Injection Resin

First, the crack and surrounding surface must be thoroughly clean, dry and all loose debris removed. Crack sealer then used to seal the surface and bond on the injection nipples. Once the crack sealer has hardened, which normally takes about an hour, the injection resin is mixed and placed in the assembled cartridge.

It is then simply a matter of pushing the plastic tube over the nipple, clipping firmly in place with the clip provided, opening the restrictor clamp and gently pumping in the resin using the hand operated skeleton gun. Starting at the bottom so the air is displaced upwards, each nipple is plugged as it becomes filled. The following day the nipples may be broken off and depressions filled with more crack sealer. For a smooth matching finish the crack surface should be ground off using a mechanical grinder or smaller tool.

Most of the components are disposable, so cleaning is minimised but any spillages and mixing tools should be cleaned with suitable solvent before the resin sets.

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Typical properties

Epoxy Plus Injection Resin	L.V.	T	W.C.
Specific gravity	1.09	1.20	1.13
Mix			
Mix ratio (by volume)	4	4.5	2.5
Resin	1	1	1
Hardener			
Viscosity (Brookfield)	250 cP	-	800 cP
Spindle 3 Speed 20, 20°C	-	2800 cP	-
Spindle 5 Speed 100, 25°C	20	22	19
Tensile strength (N/mm ²)			
BS6319: Part 7 at 20°C	75	65	75
Compressive strength (N/mm ²)			
BS6319: Part 2 at 20°C - 7days Bulked out with 8/16 sand	55	45	30
Flexural strength (N/mm ²)	Concrete failure in all cases		
BS6319 Part 3 at 20°C			
Tensile bond strength (N/mm ²)			
Dry concrete at 20°C	4500	4500	4500
Wet concrete at 20°C	40-60min	50-80min	20-30min

Health and safety

The chemical selected for use in Epoxy Plus Injection Resin systems minimise the hazards usually associated with epoxy resin systems, but it is recommended that protective clothing and skin barrier creams are used when mixing and applying. In the event of contamination, the product should be removed with soap and water or proprietary cleansing creams. Working areas should be well ventilated. The hardeners are alkaline and if they enter the eye, wash thoroughly with copious amounts of water. If discomfort continues, seek medical advice.

For further information please refer to Material Safe Handling Guide.

Quality assurance

A Policy of strict quality control has always been followed and the requirement of all relevant test standards are strictly adhered.

Technical service

We can provide technical service at the specification stage and/or during application through our Technical Department or Laboratory. Detail specification or further information can be provided for specific projects or more general works. Site visits and on-site demonstrations can be arranged on request.

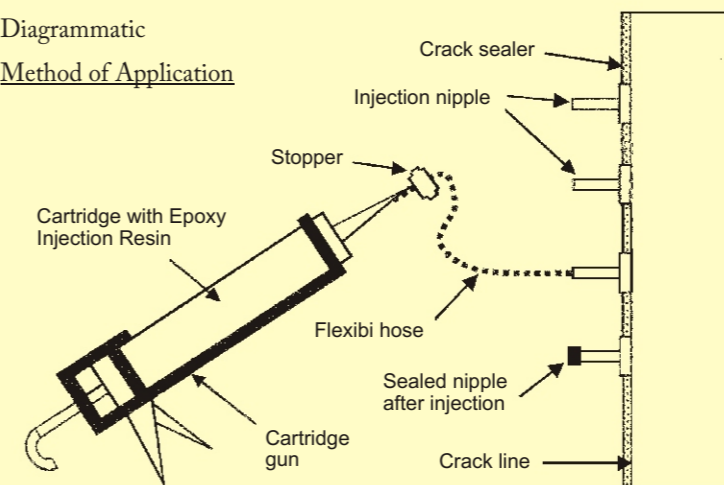
Packaging and supply

Epoxy Plus Injection Resin L.V. and W.C. are available in 1, 5 and 25 litre packs. Epoxy Plus Injection Resin T is available in 5 litre packs which are capable of being split into separate mixes where small quantities only are needed.

Please contact our Sales Office for details of Injection Equipment and Crack Sealer. Special injection resin systems for use with special two-component metering mixing and pumping equipment are available in bulk packs. Details are available on request.

Diagrammatic

Method of Application



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To the best of our knowledge and belief, the information contained in this leaflet is true and accurate, but as conditions of use and any labour involved are beyond our control, the end user must satisfy himself by prior testing that the product is suitable for his specific application, and no responsibility can be accepted, or any warranty given by our Representatives, Agents or Distributors. Test results shown reflect typical figures based on laboratory testing under

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