



Specialist Construction Supplies for Repair, Maintenance, Building & Infrastructure

## Epicon Injection Resin - Low Viscosity - Data Sheet

### Specification notes

Product: **Epicon Injection Resin - Low Viscosity**

Supplier:

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**Epicon Injection Resin - Low Viscosity - Data Sheet**

## Epicon Crack Injection System

### Epoxide Resin Crack Injection System

#### Description


A solvent free epoxide crack injection resin available in either a low viscosity grade where maximum penetration is essential or a thixotropic grade for use where maximum flow is undesirable. Suitable for injecting cracks in concrete, masonry and brickwork to consolidate the structural element and eliminate water penetration. Epicon Crack Injection is designed to comply with the requirements of EN1504 Part 5.

#### Advantages

- Solvent free non-shrink system.
- Excellent bond strength with in-built flexibility.
- Suitable for use on damp structures.
- Available in two grades to cover most applications.
- Injection kit available to allow repairs to be completed quickly and simply.
- Will penetrate gaps of width 0.1mm and above.
- Excellent performance in harsh environments.
- Good chemical and water resistance.
- Thixotropic grade is suitable for vertical cracks and can be used in inverted situations, where access is limited.

#### Technical Information

|                      | Low viscosity Grade | Thixotropic Grade |
|----------------------|---------------------|-------------------|
| Viscosity 5°C        | 695 cps             | >10 000 cps       |
| Viscosity 10°C       | 450 cps             | >10 000 cps       |
| Viscosity 20°C       | 270 cps             | >10 000 cps       |
| Specific Gravity     | 1.06                | 1.10              |
| Workable Life        | 20-30 Minutes       | 30 Minutes        |
| Pot Life             | 30-60 Minutes       | 45 Minutes        |
| Cure Time            | 24 Hours            | 24 Hours          |
| Yield                | 0.945 Litre/kg      | 0.910 Litre/kg    |
| Compressive Strength | 70 MPa              | 70 MPa            |
| Tensile Strength     | 30 MPa              | 30 MPa            |
| Flexural strength    | 50 MPa              | 50 MPa            |

|   |                                    |
|---|------------------------------------|
| <br>0086   |                                    |
| Nufins, Kingston House,<br>3 Walton Road, Pattinson North, District 15,<br>Washington, Tyne & Wear. NE38 8QA<br>13  |                                    |
| 0086-CPD-594215<br>EN 1504-5<br>Concrete injection product<br>U (F1) W (1) (1/2) (5/35) (0)<br>Intended use<br>Allowed minimum thickness of crack<br>Moisture state of the crack<br>Minimum and maximum use temperature<br>Crack movement during cure |                                    |
| Adhesive by tensile bond strength   | >2 MPa                             |
| Adhesion by slant shear strength  | Monolithic failure                 |
| Glass transition temperature  | >40°C                              |
| Workability;<br>Crack width from<br>Moisture state of the crack   | 0.1mm<br>Dry and damp              |
| Durability  | Pass                               |
| Corrosive behaviour   | Deemed to have no corrosive effect |
| Dangerous substances  | Complies with 5.4                  |

#### Surface Preparation

All surfaces should be free from chemical contamination, oil, grease and debris. Oil and grease can be removed by using *Desolve*. Concrete should be scarified or acid etched using *Chemclean* to remove any laitance. All surfaces should be free from standing water.



## Technical Properties of Epicon Crack Injection Resin.

| Properties   | Standard    | Performance Requirement      | Declared Value Low Viscosity                      | Declared Value Thixotropic                                    |
|--|-------------|------------------------------|---|---|
| Appearance   |             |                              | Amber Liquid                                      | Pale Amber Paste  |
| Working time   | EN ISO 9514 |                              | 20-30 Minutes                                     | 30 Minutes  |
| Pot Life   | EN ISO 9514 |                              | 30-60 Minutes                                     | 45 Minutes  |
| Temperature for application  |             |                              | 5°C to 35°C                                       | 5°C to 35°C   |
| Viscosity  | EN ISO 3219 |                              | 695 cps @ 5°C<br>450 cps @ 10°C<br>270 cps @ 20°C | >10,000 cps @ 5°C<br>>10,000 cps @ 10°C<br>>10,000 cps @ 20°C |
| Injectability into dry medium;<br>Percentage of the crack filled<br>Splitting strength     | EN1771      | <4 minutes<br>>90%<br>>7 MPa | <4 minutes<br>>90%<br>>7 MPa                      | N/A   |
| Injectability into non dry medium;<br>Percentage of the crack filled<br>Splitting strength | EN1771      | <4 minutes<br>>90%<br>>7 MPa | <4 minutes<br>>90%<br>>7 MPa                      | N/A   |
| Glass Transition Temperature   | EN12614     | ≥ 40°C                       | ≥ 40°C  | ≥ 40°C  |
| Compressive Strength   | EN12190     |                              | 70 MPa @ 24 Hr                                    | 70 MPa @ 24 Hr  |
| Tensile strength development   | EN1543      | >3MPa @ 72Hr                 | >3MPa   | >3MPa   |
| Tensile Strength   | BS6319-7    |                              | 30 MPa  | 30 MPa  |
| Flexural Strength  | BS6319-3    |                              | 50 MPa  | 50 MPa  |
| Tensile Bond Strength to Concrete  | EN12618-2   | Substrate Failure            | >2MPa<br>Substrate Failure                        | >2MPa<br>Substrate Failure                                    |
| Slant Shear Adhesion - Concrete  | EN12615     | Substrate Monolithic Failure | Substrate Monolithic Failure                      | Substrate Monolithic Failure                                  |
| Adhesion after thermal and wet/dry cycling   | EN12618-2   | < 30% reduction in strength  | < 30% reduction in strength                       | < 30% reduction in strength                                   |

Technical data shown are statistical results and do not correspond to guaranteed minima.

Tolerances are those described in appropriate performance standards.

1 N/mm<sup>2</sup> = 1MPa

1 kN/mm<sup>2</sup> = 1 GPa



## Application Instructions

Epicon Crack Injection L.V. is typically poured into horizontal cracks, however when injecting vertical/inverted applications (with either version) the crack will require some preparation to install injection nozzles as well as sealing the face of the crack with *Formfil*.

## Instructions For Vertical & Inverted Injections

1. Mix the *Formfil* by placing a small amount of the resin paste onto a flat board, approximately the size of a golf ball. Squeeze out a strip of hardener approximately 25mm long and mix thoroughly with a putty knife until a smooth even colour paste is obtained.
2. Use the *Formfil* to bond on the injection nozzles using the locating pins to ensure the correct positioning and to seal the surface of the crack.
3. Ensure the nozzles do not become blocked with *Formfil*.
4. Nozzles should be bonded at between 200mm-500mm centres depending on the width and depth of the crack.
5. *Formfil* will harden in approximately 20 minutes after which time injection can commence.
6. Mix the Epicon Crack Injection Resin by adding the entire contents of the hardener tin to the base tin and slowly stir until the materials are thoroughly mixed. A pallet knife may be needed for the Thixotropic grade, to scrape the hardener out of its tin.
7. Place the mixed resin into the assembled cartridge onto which is fixed the plastic tubing and a tube clamp. Fit into the skeleton gun.
8. Fix plastic tubing to the first inject nozzle and release the tube clamp, gently injecting the resin.
9. When the resin appears at the second nozzle cease injecting and plug the first nozzle. Repeat the operation for the subsequent nozzles.
10. Clean all equipment with Nuwash.
11. After 24 hours remove the nozzles and make good any surface defects with *Formfil*.

## Storage

Epicon Injection Resin should be stored at room temperature. If stored in cold conditions the components should be warmed prior to use as this will greatly aid mixing and injection. Epicon Crack Injection resin should be stored away from foodstuffs and out of reach of children.

*Formfil* is inflammable (flash point is 31°C). Due precautions should be taken when handling and storing this material shelf life is 12 months when stored in a cool dry place.

## Packaging

Epicon Crack Injection resin is available in 0.25kg and 0.5kg units, yielding 0.23 litres and 0.46 litres respectively.

## Health and Safety

Epicon Crack Injection Resin is capable of irritating unprotected sensitive skin. We therefore recommend the use of a barrier cream and the wearing of goggles and gloves.

When using *Formfil* do not smoke or allow naked flames during use. When sanding *Formfil* a suitable mask should be worn. *Formfil* is capable of irritating unprotected sensitive skin. We therefore recommend the use of a barrier cream and the wearing of goggles and glove.

## Limitations

If injecting below 5°C contact Nufins technical department. As with all Epoxy products an exotherm will be generated, which is volume dependent.

## Technical Support

Through our technical department and laboratories we can offer a comprehensive service to specifiers and contractors. Technical representatives are available to provide additional information and arrange demonstrations.



## Epicon Crack injection resin Kit

### Description

A prepacked kit containing Epicon Crack Injection resin is available as either Low Viscosity or Thixotropic resin, together with all the ancillary equipment required to enable small scale crack injection to be carried out.

Kit Consists of:

| Item                      | Quantity  |
|---------------------------|-----------|
| 10" Skeleton Gun          | 1         |
| Empty Cartridges Complete | 4         |
| Injection nozzles         | 20        |
| Nozzle Plugs              | 20        |
| Nozzle locating Pins      | 20        |
| Plastic Tubing            | 1.0 meter |
| Injection Resin           | 4 x 250g  |
| Formfil                   | 750g      |
| Tube of Formfil Hardener  | 1         |
| Nuwash                    | 1 litre   |
| Plastic Scrappers         | 2         |
| Pairs of Plastic Gloves   | 2         |

