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Low viscosity or thixotropic epoxy resin injection grout

Uses

Nitofill LV

A low viscosity system for the injection of cracks between 0.3mm and 9 mm wide in concrete and masonry, where both sides of the crack can be sealed to prevent resin drainage.

Nitofill TH

Developed for the injection of cracks between 0.5mm and 9 mm wide in concrete and masonry, and has been specially formulated to minimise the drainage of resin from cracks which are incompletely sealed.

Advantages

Nitofill LV

- Low viscosity: Permits maximum resin penetration

Nitofill TH

- Thixotropic: Permits injection of open-ended cracks

Nitofill LV and Nitofill TH

- Adhesion: Achieves high strength bond to dry or wet concrete
- Minimum creep: Material designed for low creep
- Non-shrink: No loss of bond or surface contact
- High strength: High compressive, tensile and flexural strengths
- Chemical resistance: Withstands most chemicals, acids and alkalis, also water and frost

Description

Nitofill LV

A two pack low viscosity epoxy resin product for the repair of cracked concrete and masonry by the injection process.

Nitofill TH

A two pack thixotropic epoxy resin product for the repair of cracked concrete and masonry by the injection process.

Nitokit Surface Sealant

This is a polyester resin compound which combines the dual function of sealing the surface of the crack and bonding on the injection points.

It is supplied as a liquid resin together with a powder hardener, which are mixed together to give a stiff paste.

Nitokit Surface Sealant has the added advantage that it can be rubbed down with suitable hand or power tools to give a smooth finish which readily blends with surrounding concrete, minimising the visual impact of the repaired crack.



Usable life at 20°C: 15 to 35 minutes dependent on mix ratio and quantities

Set time at 20°C: 1 to 2 hours dependent on mix ratio

| | |
|--|--|
|  0370 | |
| Fosroc Ltd Drayton Manor Business Park, Coleshill Road, Tamworth, B78 3XN, UK 09 DOP: 9-44 Nitofill LV DOP: 9-45 Nitofill TH 0370-CPR-0845 | |
| EN1504-5: Concrete Injection Nitofill LV: U(F2) W(3)(1/2/3)(5/30)(0) Nitofill TH: U(F2) W(5)(1/2/3)(5/30)(0) | |
| Determination of adhesion of injection products | $f_{ct} > 2.0 \text{ Nmm}^{-2}$ with and without cycles |
| Adhesion by slant shear | Monolithic failure |
| Non-volatile content | >95% |
| Determination of injectability Nitofill LV: | Moisture state wet or dry Crack width from 0.3mm: class P3 |
| Nitofill TH: | Crack width from 0.5mm: Class P5 |
| Glass transition temperature | >40°C |
| Corrosion behaviour | Deemed to have no corrosive effect |
| Dangerous substances | Complies with section 5.4 |
| Tensile strength development for polymers | >3 N/mm ² within 72 hours at 10°C, 20°C, 30°C |

Fosroc® Nitofill LV /TH

Specification Clauses

Low Viscosity Crack Injection

The crack(s) shall be structurally reinstated with Nitofill LV low viscosity epoxy injection resin that conforms to BS EN 1504 Part 5. It shall be injected in accordance with the manufacturer's written instructions using the recommended injection equipment and ancillaries.

Thixotropic Crack Injection

The crack(s) shall be structurally reinstated with Nitofill TH thixotropic epoxy injection resin that conforms to BS EN 1504 Part 5. It shall be injected in accordance with the manufacturer's written instructions using the recommended injection equipment and ancillaries.

Properties

The following properties were obtained for Nitofill LV and Nitofill TH at a temperature of 20°C:

| | Nitofill LV | Nitofill TH | |
|---|----------------|----------------|----------|
| Compressive strength EN ISO 12190:1999 (adapted): | 93MPa | 88 MPa | @ 7 days |
| Tensile strength EN ISO 527: | 47MPa | 29MPa | @7days |

Pot life

The time for which bulk mixed material remains fluid will vary with temperature. Typical values in minutes are:

| | 10°C | 20°C | 30°C |
|--------------|------------|------------|------------|
| Nitofill LV: | 40 minutes | 20 minutes | 10 minutes |
| Nitofill TH: | 40 minutes | 20 minutes | 10 minutes |

Chemical resistance

Nitofill LV and Nitofill TH are resistant to oil, grease, fats, most chemicals, mild acids and alkalis, fresh and sea water. Where constant contact with specific concentrated chemicals or solvent is anticipated the Fosroc Customer Services Department should be consulted for advice.

Temperature limitations

During application: Injection can be carried out without special precautions at ambient temperatures from 5°C to 25°C. Where ambient temperatures exceed 20°C note the pot life will be reduced. Cure temperatures below 15°C will result in slower strength build up; at 5°C cure will stop until the material warms.

In service: The cured grout is completely resistant to frost and extreme sub-zero temperatures, and is suitable for continuous use up to 35°C.

Application instructions

Surface preparation

Nitokit Surface Sealant has to retain the injection system under pressure. Care must be taken to provide a bond surface which is dry and free from any contamination.

Mixing the surface sealant

Only mix enough sealant that can be applied within the usable pot-life. Pour a small quantity of the resin into the mixing bucket provided and slowly add the powder. Stir until a smooth thick cream consistency is obtained.

Application of the surface sealant

Immediately after mixing, apply a small amount of sealant to the back of each nipple ensuring that the valve will not be blocked, then place the nipple to ensure the valve (centre) is firmly over the crack. Nipples should be placed between 200 and 500 mm apart dependent on crack size. Additional sealant should be applied to the flange of the nipple to ensure a resin-tight seal to the substrate. Nitokit Surface Sealant should be knifed into the crack between nipples to ensure a resin-tight seal.

Where cracks can be sealed on one side only, nipples should be placed at centres which are 80% of the depth to which the resin is required to penetrate.

Application of the injection resin may commence as soon as the Nitokit Surface Sealant has fully hardened (at least 1 hour at 20°C or 2 hours at 10°C).

Mixing Nitofill

Pour all the contents of Hardener pack into Base container. Mix for 2 minutes or more until homogeneous. At extreme temperatures refer to gel time information to enable required handling procedures to be adopted.

NB: Mechanical mixing is preferable (i.e. Jiffy mixer in slow speed drill) ensuring that the sides and bottom of the container are repeatedly scraped.

Injection

The product may be pumped into place using a standard 'grease gun' technique. The size of the injection pump should be related to the job in hand. For small-scale jobs a Fosroc 'G' Gun may be used. Where greater rates of injection are required a hand pump may be used, or bulk supplies of Nitofill LV and Nitofill TH may be used with twin metering/mixing machines.

Connect the pump to the injection port using nylon reinforced PVC hose and Unex clips. Injection should commence at the widest part of the crack, or at the lower end if crack is uniform, closing that port and transferring injection to the next when the resin is seen to have reached it.

12 to 18 hours after injection, the injection tubes should be broken off and any damage made good using Nitokit Surface Sealant.



Fosroc® Nitofill LV /TH

Cleaning

Tools and application equipment should be cleaned using Fosroc Solvent 102 for Nitofill LV and Nitofill TH and Fosroc Solvent 105 for Nitokit Surface Sealant immediately after use. Cured material can only be removed mechanically. Spillages should be absorbed with sand or sawdust and disposed of in accordance with local regulations.

Estimating

Packaging

| | |
|--------------------------|---|
| Nitofill LV: | 3 litre pack (2 x 1.5 litre units each consisting of base & hardener) |
| Nitofill TH: | 1 litre pack |
| Nitokit Surface Sealant: | 5.5 litre pack |
| Fosroc Solvent 102: | 5 and 25 litre tins |
| Fosroc Solvent 105: | 5 litre tin |

Storage

Nitofill LV and Nitofill TH have a shelf life of 18 months, if stored in dry conditions at 20°C.

Nitokit Surface Sealant has a shelf life of 12 months if stored in dry conditions at 20°C.

Nitokit Surface Sealant should be stored in accordance with the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972.

Precautions

Health and safety

For further information refer to appropriate Product Safety Data Sheet.

Disposal

To eliminate risk of exotherm, this product should only be mixed when ready for use and then applied without delay. Any unused residue should be poured on to a disposable impervious surface to allow cure before disposal.

Fire

Nitofill LV and Nitofill TH are non-flammable.

Fosroc Solvent 102, Fosroc Solvent 105 and Nitokit Surface Sealant are flammable. Do Not use near naked flames. No Smoking during use.

In the event of fire, extinguish with CO₂ or foam.

Flash points

| | |
|--------------------------|------|
| Nitokit Surface Sealant: | 29°C |
| Fosroc Solvent 102: | 33°C |
| Fosroc Solvent 105: | 43°C |

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