Fosroc® Nitofill LV /TH

constructive solutions

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.

The usable life of the product is 20 to 25 minutes at 20°C.

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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 Nmm^{-2} with and without cycles
Adhesion by slant shear	Monolithic failure
Non-volatile content	>95%
Determination of injectability Nitofill LV: Nitofill TH:	Moisture state wet or dry Crack width from 0.3mm: class P3 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

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:

Fosroc® Nitofill LV /TH

	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

Preparation

Ensure all contact surfaces are free from oil or grease contamination.

Bond injection ports over the crack with Nitokit Surface Sealant, at 150 - 400mm centres. (If crack is obstructed at the surface, access may first be gained by vacuum flush drilling.) The crack should then be sealed between ports with Nitokit Surface Sealant.

Mixing Nitokit Surface Sealant

Mix only the quantity of sealant that can be applied within the usable life, approximately 20 minutes @ 20°C.Pour a small quantity of the resin into a suitable bucket and slowly add the powder. Stir until a smooth thick cream consistency is obtained. Mix further quantities as required.

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.

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
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.

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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 CO_2 or foam.

Flash points

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

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