

Nitofill PU 1F

Single Component, Rapid Foaming and Setting Hydrophobic Polyurethane

Uses

Stops the flow of water when injected into cracks in concrete in the presence of dripping water. Nitofill PU 1F provides an effective system for crack sealing in wet conditions.

Areas of application include :

- Defective concrete (cracked or honeycombed)
- Concrete joints, Limestone, Brick construction
- Pipe intrusions, Waste water tanks
- Tunnels, Dams, Subway (Metro), Sewers, Manholes, Utility boxes, etc.
- Soil stabilization

Advantages

- Negative side application possible
- Deep penetration into very small cracks
- Foam increases in volume to fill cavities and voids
- Excellent bond to surfaces
- Good adhesive strength, tolerant of movement
- Inert after curing, constant volume, no shrinkage
- Does not create new cracks

Description

Nitofill PU 1F is a hydrophobic grout based polyurethane. Upon contact with water, it reacts to closed cell rubber-like foam while expanding its volume up to 27 times. The cured material is of a constant volume. Since water is not a component of the foam structure, the cured material is essentially not affected by water or dryness. The reacted material does not shrink or swell. Depending on the pressure of injection, Nitofill PU 1F reacts to a very dense material or foam.

Technical Support

The company provides a technical advisory service supported by a team of specialists in the field.

Properties

Form	Liquid Type
Colour	Dark Brown
Solubility in Water	Hydrophobic
Density (g/ml)	1.21
Viscosity (Mpa-S) (KSF 4923)	100-200
Max. Expansion (25°C)	2700% (Ratio 10:1 Resin:Water)
Induction Time (25°C)	15 sec (Ratio 2:1 Resin : Water)
Gel Time (25°C)	110 sec (Ratio 2:1 Resin : Water)
Tensile shear strength (25°C)	4 N/mm ²
Appearance	Light yellow Polyurethane Foam
Corrosiveness	Non-Corrosive
Chemical Resistance	Resistant to more organic Solvent, Mild Acids & Alkali
Storage Condition	Store in a dry cool place
Packaging	10 kg/pail

Specification clause

Rapid foaming and setting hydrophobic polyurethane.

Water-stopping crack injection resin foam shall be Nitofill PU 1F, a single component foaming liquid polyurethane. When injected into cracks in concrete, the resin shall react with dripping water to form a foam water-stopping barrier. The water-stopping injection resin shall have the following properties; specific gravity of 1.12; Induction Time (25°C) of 15 sec (Ratio 2:1 Resin : Water) and gel time (25°C) of 110 sec (Ratio 2:1 Resin : Water).

Application instructions

Surface Preparation

Clean the area of concrete so that cracks are identifiable.

It is recommended to use the packers especially when injecting against dripping or slow running water. Other techniques may be used but are application specific. Drill holes to suit the specific dimensions of the packers and should be spaced between 150 to 500mm intervals depending upon the crack width, depth and pressure of water. Angle should be at approximately 45° and bisect the crack in the centre of the concrete where possible. If rebar is struck, stop drilling and move drilling point to adjacent area.

Wherever possible, stagger the injection points on either side of the crack and insert packers to ensure they are tight to the concrete. If necessary, they may be sealed with Nitomortar PE or Renderoc Plug as well.

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Mixing and Application

- Stir the container containing Nitofill PU 1F thoroughly for 5 minutes before use, taking care to exclude moisture as much as possible. Place it in an enclosed container after opening. There may be a skin formation on the surface but the liquid underneath will be satisfactory for use during the stated pot-life of the product.
- Nitofill PU 1F requires the presence of water to react and harden. If there is no water ingress at the time of injection, cracks should be pre-injected with water.
- Nitofill PU 1F is suitable for use with all common 1 component application equipment, typically an electric pump will yield the best results when injecting against hydrostatic water pressure.
- Inject Nitofill PU 1F along the line of the crack methodically, ensuring that the material is working its way along to the next point. If injecting vertical cracks, it is generally advised to begin at the bottom of the crack and work upwards.
- Take care not to over pressurise injection as this may lead to further cracking of the concrete or displacement of packers.
- If material is flowing without resistance, stop and allow material to gel. If material is still flowing, consider increasing the amount of accelerator or changing the spacing of injection.

Finishing

Once the injection process is finished, remove injection packers and fill with Nitomortar PE and Renderoc Plug or any other appropriate Renderoc material. Scrape off any foam residue from the cracks and dispose of appropriately.

Cleaning

Use Nitoflor Sol for cleaning all tools and equipments.

Storage

Shelf life

12 months if stored in the original unopened sachets in a cool dry place with temperature at 15 - 20°C. Do not store in direct sunlight.

Packaging

- Nitofill PU 1F : 10kg/pail
- Nitomortar PE : 5 litre packs
- Nitoflor Sol : 5 & 20 litre packs
- Renderoc Plug : 5 kg packs

Precautions

Health and safety

Gloves and a barrier cream should be used when handling Nitofill PU 1F. Should accidental skin contact occur, it must be removed, before it hardens, with a resin removing cream. Follow by washing with soap and water. Do not use solvent. The use of goggles is recommended.

Should accidental eye contamination occur, wash thoroughly with plenty of water and seek medical treatment immediately. Ensure good ventilation and do not smoke during use. For further information, refer the Safety Data sheet available for this product.

Fire

Nitomortar PE and Nitoflor Sol are flammable.

Renderoc Plug is non-flammable.

Additional Information

Nitofill PU 1F is a part to wide range of adhesive, grouts, repair mortar and sealing compounds, specifically designed and manufactured by Fosroc for the construction industry. For further information on any of the above, please consult your local Fosroc office - as below.

Note :

The success of water stopping injection is largely dependent upon the skill of the applicator. Fosroc therefore recommends that an experienced applicator is selected to undertake these works to the required standard. Exact spacing of injection ports, amount of accelerator, pump type and even injection technique will vary depending upon a number of factors, including crack width, concrete depth and water pressure. These parameters may change even within the same project. Excess material should be safely reacted with water to produce and inert Polyurethane foam and disposed off appropriately.

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