Fosroc®
Nitofill® PU150

constructive solutions

Multi-purpose hydrophilic flexible polyurethane grout

Uses

Nitofill PU150 is a multi-purpose injection resin designed to seal leaking cracks, voids or fractures in concrete structures. The single component system reacts with water to form foam that expands filling the void and forming a tight, impermeable elastomeric seal, stopping the water flow.

The resulting appearance of the polyurethane is dependent on the amount of water encountered. This hydrophilic formulation contains no TDI or solvents. The system benefits include high elongation, flexibility and easy installation. The liquid may be pumped as a single component directly into a leaking crack, fracture or joint or injected with water. Typical applications include:

- Sealing against water ingress
- Sealing against leaking cracks and joints
- Sealing against water in masonry and brickwork
- Void filling
- Back grouting

Description

Nitofill PU150 is a multi-purpose hydrophilic polyurethane injection resin which reacts with available water to initiate expansion in the product to seal leaking cracks and joints in concrete and fill voids in generally inaccessible locations.

Standards compliance

Nitofill PU150 complies with AS 4020-2018; AWQC Report 350774.

Copies of the report are available on the Fosroc website.

Advantages

- High tensile adhesion
- Expands up to 25 times initial volume
- Solvent free, environmentally safe
- Excellent adhesion to most surfaces including concrete, brick and mortar
- Resistant to most organic solvents, mild acids and alkalis
- Rapidly forms a highly resilient flexible seal that allows movement to the crack, fracture or joint
- Reacts even with sea water or mineral water
- Complies to AS/NZS 4020:2018 - suitable for use in drinking water applications

Properties

Specific Gravity:	1.07 (ASTM D-1475)
Viscosity:	650 cps (ASTM D-1638)
Colour:	Pale yellow resin
Tensile Strength:	1.17 MPa (ASTM D-638)
Elongation:	400% (ASTM D-638)

Design Criteria

When Nitofill PU150 is mixed with equal parts water (w:w) it forms a cream within 29 seconds and a gel in 3 min 5 sec @ 25^{o}C.

Reaction Data Using Nitofill PU150

This information should be used as a guide only. As each job will have varying conditions, customer should perform their own trials to find the optimum amount of Accelerator for each job.

Temperature ^{o}C	Mixing ratio Nitofill PU 150 water (w/w)	Cream time (seconds)	Gel Time (minutes:seconds)	Rise time (minutes:seconds)	Tack free time (minutes:seconds)
10	1:1	110	5:10	9:20	9:50
20	1:1	55	3:45	6:38	7:30
25	1:1	29	3:05	6:40	7:18
30	1:1	26	2:44	4:30	4:30
25	1:2	59	2:42	5:00	5:40
25	1:3	61	2:13	4:30	5:10
25	1:4	77	2:05	4:30	3:20

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Application Instructions

Nitofill PU150 can be injected by two methods:

1. Single Component Pump that is equipped for high pressure. The resin will react with the water in the structure and foam.
2. Twin Piston Pump water / resin ratio can be varied to form different density foams as shown in below table.

High pressure packers and couplers should be used for the injection of Nitofill PU150. Nitofill Steel Packer 10mm x 95mm or Nitofill Steel Packer 13mm x 100mm connected to Nitofill Coupler 4 Jaw will produce a reliable application. The grease nipple valve allows pumping hose to connect/disconnect quickly with positive shut-off.

Application

Drill appropriate size holes at a 45° angle to intersect the crack or joint approximately half way through the thickness of the concrete (300mm wall, drill to intersect at 150mm depth).

The injection packers inserted into pre-drilled holes shall be fixed at intervals along the length of each crack.

The distance between each packer will depend upon the width and depth of the crack. Spacing shall be close enough to ensure that the resin will penetrate along the crack to the next point of injection.

It is recommended that the material be conditioned to appropriate temperatures for at least 12 hours prior to application.

Pump Nitofill PU 150 slowly until resin appears on face of crack. Start at lowest point and work upwards.

Reaction with water results in the formation of a flexible polyurethane foam which is hydrophilic and chemically resistant.

Dry cracks that are not actively leaking at the time of injection and are subjected to periodic water leaks, need to be flushed out with water. This is only required if the crack is dry and there is no moisture available for the reaction of polyurethane resin.

The resin can be pumped by means of a single component in injection pump that is equipped for high pressure.

Following the injection, the pump must be thoroughly cleaned with Fosroc Solvent 10.

Important: Keep containers sealed whilst not being used. Moisture may be absorbed into the Nitofill PU150 from the atmosphere causing it to react. Careful consideration should be given to applications below 10°C on a falling thermometer to avoid possible crystallization.

Cleaning

Nitofill PU150 should be removed from tools, equipment and mixers with Fosroc Solvent 10 immediately after use. Cured material can only be removed mechanically.

Supply

Nitofill PU150 20kg:	FC300900-20KG
Fosroc Solvent 10 4 litre:	FC600800-4L
Nitofill Steel Packer 10mm x 95mm (MOQ pack of 100):	FC344228-UNIT
Nitofill Steel Packer 13mm x 100mm (MOQ pack of 100):	FC344227-UNIT
Nitofill Coupler 4 Jaw (MOQ pack of 5):	FC344226-UNIT

Storage

Nitofill PU150 has a shelf life of 12 months from date of manufacture if kept in a dry store in the original, unopened packaging.

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