

Low viscosity, dual cartridge, epoxy crack-injection system

Uses

Nitofill LV is designed for injecting cracks in concrete and masonry where there is a need to consolidate a structure or exclude water and air from contact with the reinforcement.

Nitofill LV is a high strength, low viscosity resin injection system and provides excellent bond to concrete and masonry.

The Nitofill LV system is ideal for small scale repairs on site and is suitable for insitu or precast concrete elements.

Advantages

- Suitable for structural crack repairs
- Low viscosity allows penetration into the finest cracks
- Non-shrink, adheres with no loss of bond
- System includes everything necessary to complete the crack injection
- Convenient to use, disposable cartridge pack contains both base and hardener
- Cost effective and efficient repair

Description

Nitofill LV crack injection system incorporates a two part epoxy base and hardener contained in a dual cartridge pack.

The Nitofill LV cartridge pack accessory items are available separately: cartridge gun, static mixer nozzle hoses, injection flanges, flange adaptors and flange removing tool.

Nitofill LV can be applied using either injection packers fixed into holes drilled directly into the crack or drilled diagonally from concrete adjacent to the crack or by the fixing of injection flanges bonded to the surface using Nitomortar AP.

Nitofill LV cartridge gun is used to inject the resin for surface mounted flanges.

Nitofill LV is also available in 15 litre 2 component kits which can be used in proportioning pumps and hand pumps.

Design criteria

Nitofill LV is suitable for injecting cracks in concrete and masonry down to 0.2 mm at the substrate surface and internal cracks tapering down to 0.1 mm.

The system should not be used for cracks where movement is expected to continue; flexible sealant should be considered.

Specification Clause

Low viscosity crack injection grouting system

The injection grouting material shall be a low-viscosity epoxy resin, with high bond strength to dry or damp (SSD) concrete, high compressive tensile and flexural strengths, and offering chemical and weathering resistance.

Specially formulated for injection of cracks down to 0.2 mm at the surface, tapering down to 0.1 mm internally.

Use in conjunction with a surface sealing two part epoxy resin and hardener material for setting and sealing around injection flanges and surface of cracks.

Properties

Usable life at	
10°C:	40 minutes
20°C:	20 minutes
30°C:	10 minutes
Viscosity at	
10°C:	250-450 cps
20°C:	150-200 cps
30°C:	50-100 cps
VOC content:	31g / litre
<i>The following results are typical for the hardened Nitofill LV epoxy resin</i>	
Compressive strength (BS 6319):	
1 day	57 MPa
3 days	66 MPa
7 days	83 MPa
Tensile strength (BS 6319):	>25 MPa
Adhesive strength to concrete:	>2.5 MPa
Flexural strength (BS 6319):	>50 MPa

Exotherm

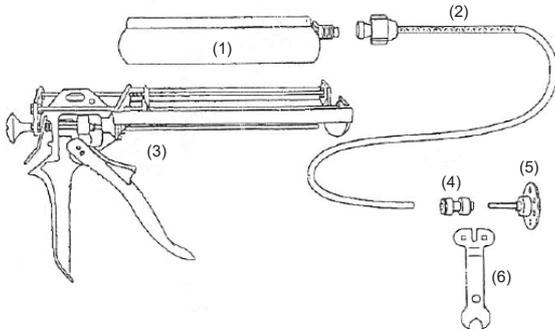
All epoxy systems will develop a temperature rise on mixing. Its extent will be a function of the volume to surface ratio, the ambient temperature, as well as the mass and thermal conductivity of the surrounding materials. Once mixed, place Nitofill LV immediately - do not hold in bulk or re-lid the container of mixed product.

Chemical resistance

The cured Nitofill LV epoxy is resistant to oil, grease, fats, most chemicals, mild acids and alkalis, fresh and sea water. Consult Fosroc when exposure to solvents or concentrated chemicals is anticipated.

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Nitofill LV components (Crack Injection System)



- (1) Nitofill LV 450ml pack
- (2) Nitofill LV static mixer / hose
- (3) Nitofill cartridge gun
- (4) Nitofill LV adaptor
- (5) Nitofill LV flange
- (6) Nitofill flange tool

Instructions For Use

Surface preparation

All contact surfaces must be free from oil, grease, free standing water or any loosely adherent material. A light grind of the surface adjacent to the crack will help remove any contamination and assist adhesion of the Nitomortar AP surface seal. All dust must be removed.

Ideally, the crack should be ground out to a depth of 5mm to accept the surface seal epoxy and assist in penetration of the Nitofill LV.

Crack surface seal

Nitomortar AP is generally used to bond the injection flanges to the substrate and to seal the face of the crack (see current Nitomortar AP Technical Data Sheet for additional application / mixing instructions).

Installing of the injection flanges

Flanges should be placed between 200 mm and 500 mm apart dependent on crack size, along the length of the crack. Drill 10mm x 30mm deep holes at the crack where flanges are to be located. This assists in keeping the injection point clear. Remove any residual drilling dust in the hole and along the crack with vacuum (do not use compressed air).

Immediately after mixing, apply a small amount of the Nitomortar AP product to the underside of each flange, making sure that the valve will not be blocked and place the flange centrally over pre-drilled hole in the crack.

Application of the surface seal

Additional Nitomortar AP should be applied around each flange edge and to the remainder of the crack between the flanges to ensure a resin tight surface seal to the crack.

Application of the Nitofill LV injection resin can commence as soon as the Nitomortar AP has sufficiently hardened (typically over-night). If faster curing surface seal is necessary, contact Fosroc for further advice.

Injection of the Nitofill LV epoxy resin

Ensure that the crack being injected is dry or SSD damp only. Any free water in the crack will need to be removed or allowed to dry out before resin can be injected.

The Nitofill LV static mixer/hose should be screwed onto the cartridge. The cartridge is then placed into the gun and the outlet end of the hose pushed onto the lowest flange using the adaptor. Ensure the hose and adaptor are pushed on to the flange firmly which opens the valve in the flange so resin can flow in.

To ensure the product is mixed properly through the static mixer, always gun out a small amount of Nitofill LV resin prior to attaching the outlet end to the flange.

The contents of the cartridge is then slowly injected into the crack until the resin flows from an adjacent flange, or until firm and sustained hand pressure on the gun trigger signifies that no further resin will be accepted. The gun pressure should be released by pressing on the thumb release plate at the rear of the gun. Then stop the flow of resin from the flange and remove the adaptor. To do this, push the clear base of the flange towards the substrate whilst pulling back about 3mm the black stem of the flange, away from the substrate. The flange should now be in the closed position. Remove the adaptor by pushing the blue ring on the adaptor, connected to the flange, away from the substrate. The operator can use either their fingers or a flange removing tool to push the blue ring on the adaptor.

The injection hose can then be refixed to an adjacent flange, and more Nitofill LV resin injected. Repeat the process until the entire length of crack has been injected.

In the case of cracks which go all the way through a wall or slab, the resin should be injected through alternate flanges on both sides where access is possible. In the case of slabs, injection from the underside takes precedence to top injection.

Pump application

Nitofill LV can also be applied using various mechanical and hand operated pumps. In these application, Nitofill LV is typically supplied in 15 litre kits (10 litre base & 5 litre hardener) and either mixed first in the correct proportions (2 parts base:1 part hardener by volume) then poured into "grease gun" type pumps or via calibrated proportioning pumps.

When mixing the base and hardener, use a spiral type mixer and mix for 3 minutes. Pot life of the mixed product will be significantly reduced if held in bulk volume. Use the mixed product immediately after mixing.

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Cleaning

All tools and equipment should be cleaned immediately after use with Fosroc Solvent 10.

Making good

After the Nitofill LV injection resin has set, remove the flanges. These can be knocked off with a hammer and chisel. Make good any holes or voids with Nitomortar AP.

The existing surface seal can then be removed by surface grinding until the original substrate profile is restored.

Limitations

All epoxy systems will develop a temperature rise on mixing. Once mixed, place Nitofill LV immediately - do not hold in bulk or re-lid the container of mixed product.

The Nitofill LV resin injection system should not be used for cracks where movement is expected to continue. Other measures should be taken to accommodate such movement, ie cutting and forming a movement joint then filling with a flexible joint sealant.

Nitofill LV must not be injected into voids which contain free water. Nitofill LV should only be used in dry or saturated surface dry (SSD) concrete or masonry.

Contact Fosroc for further information.

Supply

Nitofill LV (450ml twin cartridge):	FC344220-450ML
Nitofill LV Base 10 litre:	FC344214-10L
Nitofill LV Hardener 5 litre:	FC344216-5L
Nitomortar AP (3 litre pack):	FC320460-3L
Fosroc Solvent 10 (4 litre can):	FC600800-4L

Nitofill LV system accessory items

Nitofill LV Gun:	FC344221-UNIT
Nitofill LV Flange:	FC344222-UNIT
Nitofill LV Adaptor:	FC344223-UNIT
Nitofill LV Static mixer/hose:	FC344224-UNIT
Nitofill LV Flange tool:	FC344225-UNIT

Storage

Nitofill LV has a shelf life of 5 years (3 years for 450ml cartridge pack) if kept in a cool, dry conditions in the original, unopened packs. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

Nitomortar AP has a shelf life of 6 months from date of manufacture if kept in a dry store in the original, unopened packs. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

Important notice

A Safety Data Sheet (SDS) is available from the Fosroc website. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.



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NZBN 9429033691282