

Pitch polyurethane elastomeric joint sealant

Uses

For sealing movement joints in building and civil engineering construction above or below ground. For subways, retaining walls, sea walls and sewage treatment plants. Suitable for areas subject to fuel and chemical spillage.

Advantages

- Excellent elastomeric and recovery properties
- Prolonged life due to high weathering resistance
- Resists bio-degradation in sewage treatment
- Good resistance to chemicals and hydrocarbon fuels
- Wide range of operating temperatures
- Choice of primers gives outstanding adhesion even to damp concrete
- Can be accelerated to allow use in tidal conditions

Standards compliance

Nitoseal 220 meets the performance requirements of US Federal Specification TT-S-00227E, Type 2 Class A and ISO 9047 MAF 25%.

Description

Nitoseal 220 two part polyurethane formulation is blended with high grade pitch which cures to form elastomeric, highly resilient seals with excellent recovery properties. It does not exhibit the characteristic disadvantages of conventional bituminous or tar based compounds such as embrittlement, thermoplasticity and cold flow tendencies. Cured Nitoseal 220 seals are watertight and highly resistant to weathering and ageing. Nitoseal 220 is supplied as a black, gun grade sealant suitable for both vertical and horizontal joints.

Design criteria

Joints should be designed so that total movement due to concrete shrinkage and thermal changes does not exceed the 20% movement accommodation factor related to the joint width.

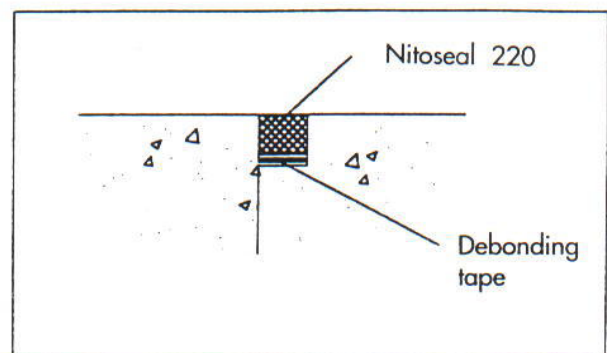
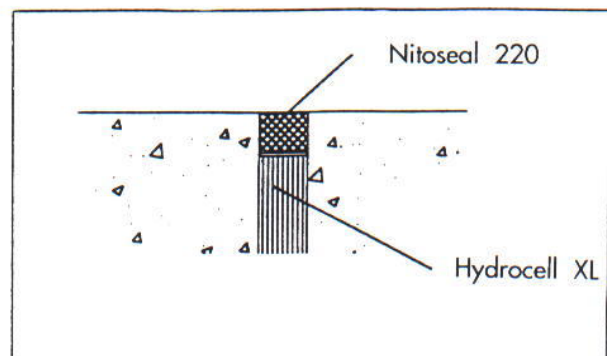
Joint Width (mm)	Sealant Depth (mm)
6-12 mm	Equal to width
12-25 mm	12-20 mm
25-50 mm	20-30 mm

The depth of the joint must never exceed the width. The minimum size of joint shall be five times the anticipated movement.

If the joint design has to be specified for particular conditions (e.g. hydrostatic pressure), consult Fosroc Technical department.

Nitoseal 220 can be applied vertically up to a joint width of 25mm without slumping. For joints greater than 25mm wide, multiple applications may be necessary.

Typical joint details



Fosroc Nitoseal 220

Properties

Movement accom. factor	: 25%		
Hardness shore 'A' (DIN 53505)			
7days @ 25°C	: 15-25		
	10°C	20°C	35°C
Pot life	: 2-3 hrs	1-2 hrs	30-60 mins
Tack-free time	: 72 hrs	24-48 hrs	16-24 hr
With accelerator	: (8 ml per 4 litre pack)		
Pot life	: 1-2 hrs	1 hr	not required
Tack-free time	: 48 hrs	24 hrs	not required

Chemical resistance

Good resistance to most common mineral acids, alkalis, petroleum based fuels and oils. For specific chemical resistance data, please contact our Technical department.

Instructions for use

Joint Preparation

The substrate to which Nitoseal 220 is bonded must be clean, dry and sound. Arris repairs should be effected using a Fosroc repair compound.

Remove all dirt, surface laitence, residual joint former or other contamination from joint faces by power wire brushing, grinding or grit-blasting. Blow all joints clean using dry, oil-free compressed air.

Any expansion joint filler must be checked to ensure it is tightly packed and no gaps or voids exist at the base of the sealing slot before positioning a bond breaker.

Note: The use of a bond breaker is not required in expansion joints containing Hydrocell XL*† or Expandaf foam**† cellular polyethylene expansion joint fillers. For construction or contraction joints a bond breaker e.g. Expancell cord or debonding tape should be used. Where hydrostatic pressure exists, only bond breaking tapes must be used, not foamed back-up strips. Where a particularly neat finish is required, mask the face edges of the joint before priming and remove immediately after tooling is completed.

Priming

Nitoprime 25

The two components of Nitoprime 25* are supplied in the correct mixing proportions. Mix thoroughly together (pot life 1 hour @ 20°C or 40 minutes @ 35°C) and brush onto the substrate and leave to dry for at least 90 minutes (20°C) or 40 minutes (35°C) before applying Nitoseal 220. If joints are not sealed within 4 hours (20°C) or 2 hours (35°C), they must be reprimed before sealing.

Mixing

The two components of Nitoseal 220 are supplied in the correct mixing proportions. The entire contents of the base and hardener containers must be thoroughly mixed together for at least 2 minutes using a recommended Mixing Paddle fitted to a slow speed electric drill (400-500 rpm). The inside of the tin should then be scraped with a flat bladed tool to ensure that unmixed components do not remain around the sides. Mixing should then be continued for a further 3 minutes. Total mixing time is 5 minutes.

Application

After thorough mixing of the two components, place the single hole follower plate over the Nitoseal and fill directly into a Fosroc Barrel Gun. Gun Nitoseal 220 firmly into the joint to ensure complete wetting of the bonding surfaces. Compress and smooth the sealant with a joint shaping tool wetted with water and immediately strip off any masking tape.

Cleaning

Uncured Nitoseal 220 can be cleaned off with Fosroc Solvent 102*. Cured Nitoseal 220 can only be removed mechanically.

Limitations

Application should not commence if the temperature of the substrate is below 5°C.

The service temperature range of Nitoseal 220 is -30°C to +80°C.



Fosroc Nitoseal 220

Estimating

Supply

Nitoseal 220	:	4 litre packs (base and hardener)
Nitoprime 25	:	1 and 4 litre packs
Nitoseal Accelerator	:	100 g units
Fosroc Solvent 102	:	5 litre cans

Guide to sealant quantities

Number of litres required =

$$\frac{\text{Joint Width(mm)} \times \text{Sealant Depth(mm)} \times \text{Joint Length(m)}}{1000}$$

A further amount should be allowed for wastage.

Coverage

Typical coverage, depending upon substrate porosity and joint profile, is 100 meters of 10 mm joint depth per litre.

Storage

Shelf life

12 months if stored in the original unopened containers in a cool dry place.

Technical support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

Precautions

Health and safety

Nitoseal 220, Nitoprime 25, Nitoseal Accelerator* and Fosroc Solvent 102 should not come in contact with skin and eyes or be swallowed. Avoid inhalation of vapours and ensure adequate ventilation.

Some people are sensitive to resins, hardeners and solvents. Wear suitable protective clothing, gloves and eye/face protection. Barrier creams such as Kerodex Antisolvent or Rozalex Antipaint provide additional skin protection.

Should accidental skin contact occur, remove immediately with a resin removing cream such as Kerocleanse Standard Grade Skin Cleanser or Rozaklens Industrial Skin Cleanser, followed by washing with soap and water. Do not use solvent.

In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice.

If swallowed, seek medical attention immediately - do not induce vomiting.

Fire

Nitoprime 25 and Fosroc Solvent 102 contain flammable solvents. Do not use near open flames or smoke during use.

Flash points

Nitoprime 25	:	39°C
Fosroc Solvent 102	:	33°C

For further information, refer to the Product Material Safety Data Sheet.



Fosroc Nitoseal 220

Additional Information

Fosroc manufactures a wide range of complementary products which include :

- waterproofing membranes & waterstops
- joint sealants & filler boards
- cementitious & epoxy grouts
- specialised flooring materials

Fosroc additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete. Fosroc's 'Systematic Approach' to concrete repair features the following :

- hand-placed repair mortars
- spray grade repair mortars
- fluid micro-concretes
- chemically resistant epoxy mortars
- anti-carbonation/anti-chloride protective coatings
- chemical and abrasion resistant coatings

For further information on any of the above, please consult your local Fosroc office - as below.

* Denotes the trademark of Fosroc International Limited

† See separate data sheet



Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Service. **All Fosroc datasheets are updated on a regular basis. It is the user's responsibility to obtain the recent version.**

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