Fosroc Nitoseal PU220PF

Formerly known as: Nitoseal 220PF / Nitoseal PU12

constructive solutions

Biodegradation resistant sealant

Uses

Provides a high quality seal which is resistant to severe conditions associated with the water and petrochem industries. The excellent abrasion resistance of Nitoseal PU 220PF also makes it appropriate for areas subject to tidal scour. Typical uses include

- Sludge digestion tanks
- Filtration and aeration tanks
- Culverts and raw water reservoirs
- Petrochem storage tanks
- Sea defence works

Advantages

- **Extremely durable** - resistant to bacteriological attack, hydrocarbon fuels and chemical spillages.
- **Rapid cure** - separate accelerator component available to accelerate initial cure, ideal for tidal applications.
- **Superior mechanical properties** - the cured sealant exhibits high degree of abrasion resistance, and maintains adhesion even under immersed conditions.
- **User friendly** - gunning characteristics make for easy application and finishing.
- **Pitch free** - formulated to be environmentally friendly as a part of continuing commitment to ISO14001 policies.

Standards compliance

Nitoseal PU220PF complies with the requirements for sealants, as detailed in BS 4254 : 1983 and USA Federal Specification TT-S-00227E.

Description

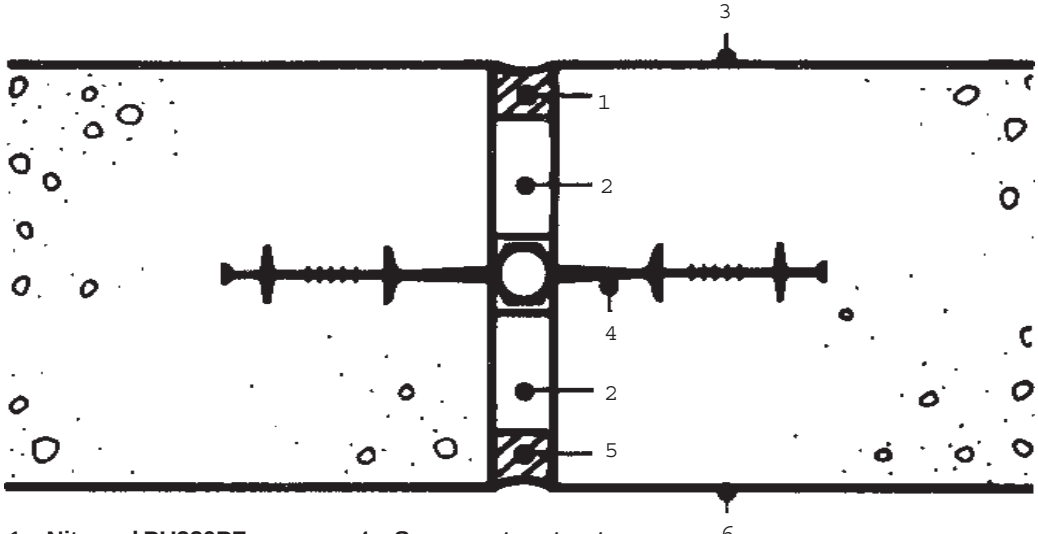
Nitoseal PU220PF is a two-part, elastomeric joint sealant, based upon pitch-free polyurethane technology . It is supplied in packs containing exact proportions of base compound and curing agent. When these two components are mixed in full, the sealant cures to form a tough, rubber-like material.

Nitoseal PU220PF exhibits excellent adhesion to most commonly used construction materials, provided the appropriate primer is utilised. Primer No 7E is recommended for porous surfaces; whereas Fosroc Primer 4 is for non-porous surfaces.

Nitoseal PU220PF can also be supplied with a special accelerator component to enhance the initial cure rate e.g. so that work can be completed between tides. At 25^{0}C the seal can be subjected to tidal immersion 45 minutes after application without any adverse effect on fully cured sealant properties.

Specification

Where shown on the contract documents, the biodegradation sealant shall be Nitoseal PU220PF supplied by Fosroc. It shall comply with BS4254:1983 and USA Federal Specification TT-S-00227E. as well as being resistant to aerobic and anaerobic bacteriological attack.



Left

Example of an expansion joint in a reservoir wall

1 **Nitoseal PU220PF**
2 **Hydrocell XL**
3 **Water face**
4 **Supercast waterstop**
5 **Thioflex 600**
6 **External face**

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Properties

Technical data - Nitoseal PU220PF

Form	:	Two-part compound Base - white paste Curing agent - dark grey paste Mixed - grey
Solids content	:	100%
Density	:	1.44 kg/litre
Curing mechanism	:	Chemical
Application temp	:	5 to 60 ^{0}C
Pot life	:	2 to 3 hours at 25^{0}C 20 min. at 25^{0}C with accelerator
Cure time	:	48 hours at 25^{0}C 24 hours at 25^{0}C with accelerator
Shore 'A' hardness	:	35 to 40 at 25^{0}C
Movement accommodation factor	:	20% on butt joints

Technical data - Nitoseal PU220PF accelerator

In a tidal situation, the sealant should incorporate the accelerator and the sealing operation should be completed at least 45 minutes prior to immersion (at 25^{0}C).

Technical data - ancillary materials

		Fosroc Primer 4*	Primer No 7E*
Drying time	:	2 to 15 minutes	1hour @ 25°C 30mins @ 35°C
Application temp.	:	5 to 60^{0}C	5 to 60^{0}C

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.

Instructions for use

Joint preparation

Joints to be sealed must be accurately formed. They must be dry, clean and free from dust, laitance, old sealant and foreign substances.

Ensure that Hydrocell XL*† expansion joint filler is tightly packed and that no voids are left at the base of the sealing slot. The use of additional bond breaking tape is **not** required.

For construction joints, or where Hydrocell XL is not used, a self-adhesive, bond breaking tape or polyethylene backer rod must be inserted at the base of the joint.

Priming

Prime the sides of the sealing slot using the appropriate primer recommended by Fosroc - Primer No 7E for porous surfaces and Fosroc Primer 4 for non-porous surfaces.

Avoid using too much primer, such that 'pools' are formed at the bottom of the joint.

Allow the primer to dry before applying the sealant. However, note that any surfaces left for more than 3 hours must be re-primed.

Mixing

Add the total contents of the curing agent cartridge into the base component tin.

Mix using a slow speed drill (300 to 500 rpm) fitted with a Fosroc Sealant Paddle*, for not less than 4 minutes until a uniform colour is achieved without streakiness.

Note : If Nitoseal PU220PF accelerator is used, it should be stirred well before adding to the base with curing agent prior to the commencement of mixing.

Application

Apply the mixed sealant into the primed slot by means of a Fosroc GX Gun. Compact the sealant into the joint and tool-off leaving a smooth finish.

Cleaning

Clean equipment immediately after use with Fosroc Solvent 102*.

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Estimating

Supply

Nitoseal PU220PF	:	2 litre packs
Fosroc Primer 4	:	250 ml tins
Primer No 7E	:	500 ml tins

Nitoseal PU220PF accelerator is supplied in a small, lever lid tins in packs of 12. One tin of accelerator is required for each 2 litre pack of Nitoseal PU220PF.

Coverage

Fosroc Primer 4	:	30 m^2/litre
Primer No 7E	:	8-10m^2/litre

Guide to Nitoseal PU220PF quantities

Joint size in mm (w x d)	Litres per metre run	Metre run per 2 litre
5 x 5	0.025	80.0
10 x 5	0.050	40.0
20 x 10	0.200	10.0
25 x 15	0.375	5.3
30 x 15	0.450	4.4
40 x 20	0.800	2.5
50 x 25	1.300	1.6

Storage

All products should be stored in their original, unopened containers, in temperature controlled, warehouse conditions of not more than 25^{0}C.

Shelf life

Fosroc Primer 4 has a shelf life of 6 months, all other products have a shelf life of 12 months, provided they are stored in proper warehouse conditions.

Precautions

Health and safety

Nitoseal PU220PF: Harmful in contact with skin - can cause burns - and if swallowed. Avoid contact with skin and eyes by wearing suitable protective clothing, including gloves and eye/face protection. Barrier creams provide additional skin protection. Should accidental skin contact occur, remove immediately with a resin removing cream, followed by soap and water - do **not** use solvent. In case of contact with eyes, rinse immediately with plenty of clean water and seek urgent medical advice. If swallowed seek medical attention immediately - do **not** induce vomiting.

Nitoseal PU220PF accelerator : Irritating to eyes and skin. Wear suitable protective clothing, gloves and eye/face protection are recommended.

Fosroc Primer 4 : Wear suitable protective clothing - gloves and eye/face protection. Use only in well ventilated areas.

Primer No 7E : Avoid contact with skin and eyes or inhalation of vapours. Wear suitable protective clothing - gloves and eye/face protection. Use only in well ventilated areas.

Fire

Nitoseal PU220PF will not support combustion.

Fosroc Primer 4 and 7E and Fosroc Solvent 102 are all highly flammable. **No smoking**, keep away from sources of ignition.

Flash point

Fosroc Primer 4	:	14°C
Primer No 7E	:	23°C
Fosroc Solvent 102	:	33°C

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Joint Geometry

The topic of joint geometry, and in particular the calculation of joint widths, is one which requires careful consideration. To be accurate, it also requires in-depth knowledge of the likely structural movements of any given building or structure, and should therefore involve a suitably qualified Engineer. Only when all the necessary information has been assimilated can any calculations begin.

Joint widths

The width of a joint should take into account both the MAF of the chosen sealant, and the actual movement expected at the joint in question. However, neither of these factors can take into account thermal expansion/contraction of the structural elements, at the actual time of sealing.

Therefore, the accepted norm (based upon CIRIA Special Publication No. 80) in calculating joint widths is as follows :

$$W_t = \frac{M \times 100}{MAF} + M$$

where, W_t = Required sealant width
M = Total expected movement (of the joint in question)
MAF = Movement accom. of the sealant

Joint depths

Having first calculated the joint width, joint depths should then be based upon the width : depth ratio recommended for the individual sealant.

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 latest version.**

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ISO 9001 / ISO 14001 OHSAS 18001 BUREAU VERITAS Certification

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