

Nitoseal 12

constructive solutions

Biodegradation resistant sealant

Uses

Nitoseal 12 is a two-part sealant designed to meet many of the requirements of the water industry in water retaining structures, sewage treatment and sea defence works. It is resistant to the bacteriological conditions associated with sewage treatment and silt accumulations in water storage. The abrasion resistance of Nitoseal 12 makes it also appropriate for use for sealing movement joints in concrete sea walls subject to tidal scour.

The principal applications for Nitoseal 12 are:

- Sludge digestion tanks
- Filtration and aeration tanks
- Culverts
- Raw water reservoirs
- Sea walls

Advantages

- Resistant to aerobic and anaerobic bacteriological attack
- Excellent adhesion under immersed conditions
- Abrasion resistant
- Separate component for accelerating the initial cure

Description

Nitoseal 12 is a two-part, elastomeric joint sealant based on polyurethane technology. It is supplied in packs containing base compound and curing agent in the correct proportions which, when mixed, cure to form a tough rubber-like material. Adhesion to most commonly used construction materials is excellent.

The use of appropriate primers is essential to ensure proper adhesion. Fosroc Primer 7 is for use on porous surfaces and Fosroc Primer 4 is for use on non-porous surfaces.

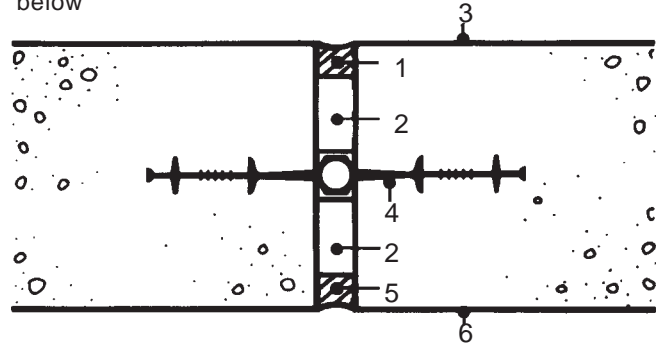
In special circumstances, such as sealing sea defence works in tidal areas, a special Nitoseal 12 accelerator component is available, to be added when mixing to enhance the initial cure rate, so that work can be completed between tides. At 10°C the seal can be subjected to tidal immersion approximately 60 minutes after application, without adverse effect.

Specification clauses

Joints shall be sealed, where designated, using Nitoseal 12, two-part biodegradation resistant sealant manufactured and supplied by Fosroc. The sealant shall be mixed and applied strictly in accordance with the manufacturer's printed instructions.

Design criteria

Example of an expansion joint in a reservoir wall is shown below



- | | |
|-----------------|------------------------|
| 1 Nitoseal 12 | 4 Supercast Hydrofoil* |
| 2 Hydrocell XL* | 5 Thioflex 600* |
| 3 Water face | 6 External face |

* Also available from Fosroc

Properties

Technical data — Nitoseal 12

Form:	Two-part compound Base: White paste Curing agent: Dark-grey paste
Storage life:	12 months in original containers in cool, dry conditions
Solids content:	100%
Density:	1.44 kg/litre
Colour:	Grey
Physical/chemical change:	Chemical cure
Application temperature:	5°C to 50°C
Pot life:	2 to 3 hours at 25°C With accelerator 20 minutes at 25°C
Cure rate:	48 hours at 25°C With accelerator 24 hours at 25°C
Cure time:	48 hours at 25°C 96 hours at 10°C Permanent immersion in water should not occur until full cure has taken place

Note: The above times will be reduced by approximately 50% if the accelerator is used.

In a tidal situation, the sealant should incorporate the accelerator and the sealing operation should be completed at least 1 hour at 10°C prior to immersion.

Hardness shore

'A' at 25°C: 35° to 40°

Nitoseal 12

Flammability:	Burns but does not readily support combustion
Biological: resistance	Good resistance to both aerobic and anaerobic conditions normally occurring in sewage treatment works
Movement accommodation factor:	20% in butt joints

Technical data — Nitoseal 12 accelerator

Flashpoint:	Over 65°C
Storage life:	12 months in original containers in cool, dry conditions
Pack size:	50 ml

Application instructions

Joint preparation

Joints to be sealed must be accurately formed. They must be dry, clean and frost free. Dust, dirt, weak laitance, old failed sealant and other foreign substances must be removed.

Ensure that expansion joint fillers are tightly packed and that no voids are left at the base of the sealing slot.

Insert a self-adhesive polyethylene bond breaking tape at the base of the joint. (Soft foam back-up material should not be used.)

Priming

Prime the sides of the sealing slot using the appropriate surface conditioner. Apply by brush, working well in, ensuring complete coverage.

Porous surfaces: Fosroc Primer 7.

Non-porous surfaces: Fosroc Primer 4.

NB: Avoid using too much primer resulting in pools in the base of the joint.

Allow the primer to dry. The sealant may be applied within the time period 30 minutes to 3 hours. That is after the primer solvent has evaporated but before the film has fully reacted. Any primed surfaces left longer than 3 hours must be re-primed before applying the sealant.

Mixing

Add the curing agent to the base component tin. Slit the end of the curing agent sachet, place it on the top edge of the tin and press with the lid to squeeze all the contents into the tin.

Note: If Nitoseal 12 accelerator is used it should be stirred well before adding to the base with the curing agent prior to mixing.

Mix using a slow speed drill (300 to 500 rpm) fitted with a Fosroc Sealant Mixing Paddle for not less than 4 minutes until a uniform colour is achieved with no streakiness.

Application

Load the mixed Nitoseal 12 into a Fosroc 'G' gun using a Follower Plate. Compact the Nitoseal into the primed joint. Tool off leaving a smooth finish.

Finishing

Nitoseal 12 can be finished by tooling-off smooth using a metal or wooden spatula. A minimum amount of detergent may be used to ease this operation. Remove all masking tapes immediately after tooling. Excessive tooling can cause surface drag, this should be avoided.

Cleaning

Clean equipment immediately after use with Fosroc Equipment Cleaner.

Estimating

Packaging

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

Guide to Nitoseal 12 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

Guide to primer quantities

1 litre of Fosroc Primer 7 to 30 litres of Nitoseal 12.

1 litre of Fosroc Primer 4 to 150 litres of Nitoseal 12.

Storage

Fosroc Primer 4 and Fosroc Primer 7 must be stored in accordance with the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972.

Nitoseal 12

Precautions

Health and safety

Nitoseal 12, Nitoseal 12 accelerator, Fosroc Primer 7, Fosroc Primer 4, Fosroc Equipment Cleaner:

For further information refer to appropriate Product Safety Data Sheet.

Fire

Nitoseal 12 and Nitseal 12 accelerator are non-flammable.

Fosroc Primer 4, Primer 7 and Fosroc Equipment Cleaner are highly flammable. See below for more details.

	Fosroc Primer 4	Fosroc Primer 7
Flashpoint:	14°C	23°C
Coverage:	60 m ² /litre	12 to 15 m ² /litre
Application temperature:	5°C to 50°C	5°C to 50°C
Drying time:	2 to 15 minutes	20 to 60 minutes
Pack size:	250 ml	500 ml 5 litres

	Fosroc Equipment Cleaner
Flashpoint:	44°C
Storage life:	Indefinite
Pack size:	5 litres



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Important note

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