Nitocote® NT402

constructive solutions

Environmentally friendly epoxy resin coting

Uses

Provides chemical and abrasion resistance to prevent corrosion of concrete surfaces for applications such as :

- Seawater tanks, channels and intakes.
- Manhole linings.
- Sewage works and effluent plants.
- Chemical processing.
- Foundation waterproofing.
- Jetties, piers and docks.

Advantages

- Environment friendly - No VOC. Totally free of carinogenic materials like coal tar, pitch and aromatic hydrocarbons.
- Low cost service life - excellent chemical and abrasion resistance, does not support bacterial growth.
- Cost saving - primerless system.
- Added value system - acts as an impermeable waterproof coating and excellent resistance to underground environment.

Description

Nitocote NT402 is based on selected epoxy resins. It is supplied as a two pack material in pre-weighed quantities ready for on-site mixing and use.

Nitocote NT402 is applied as a two coat application. It is generally applied at a wet film thickness of 200 micron per coat, but can be applied at greater thicknesses to suit exposure conditions.

Nitocote NT402 is available in Light Grey, Dark Grey, Black, Brick Red and Sage Green.

Specification

The corrosion resistant coating shall be Nitocote NT402, a tar free, 100% solids epoxy resin coating. The coating shall posess a high-build capability, to facilitate varying application thickness. It shall further posess excellent bond to the concrete substrate. The coating shall be resistant to underground conditions, alkalis, salt solutions and dilute acidic solutions.

Properties

Solids content	:	100%
Mixed density	:	1.50 ± 0.05g/cc
Pot life(ASTM D2471) at 23°C at 35°C	:	 25 minutes 13 minutes
Tack free time (ASTM D1640)	:	2 to 3 hours @ 23°C 1-1.5 hrs @ 35°C
Overcoating time (ASTM D1640)	:	6-8 hours @ 23°C 3-4 hours @ 35°C
Full cure(ASTM D1640)	:	4 days at 35°C 2 days @ 35°C
Abrasion Resistance (ASTM D4060-CS17/1kg	:	0.22gm weight loss in 1000 cycles
Adhesion Strength (ASTM D4541)	:	2.0 N/mm²
Water Absorption (ASTM C642) after immersion @ 23°C after immersion & boiling	 : :	 Nil 0.1%
Resistance to Sulphate ion penetration(AASHTO T259)	:	Resistant
Resistance to CO_2 diffusion (AFTL inhouse method)	:	Resistant
Resistance to Bacterial growth (AWWA/APHA 20th Ed.98)	:	Resistant
Resistance to Fungal growth (ASTM D3273)	:	Resistant

Chemical resistance :

Tests were carried out in accordance with ASTM D1308. Test was conducted at room temperature of 23°C and specimens were soaked in the solution for a period of 7 days.

Acids (m/v)		
Hydrochloric acid 10%	:	Excellent
Sulphuric acid 10%	:	Very good
Nitric acid 10%	:	Very good
Phosphoric acid 10%	:	Very good
Acetic acid 5%	:	Very good
Alkalis (m/v)		

Ammonia 15%	:	Excellent
Sodium Hydroxide 25%	:	Excellent
Potassium Hydroxide 25%	:	Excellent
Salt solutions		
Sodium Chloride (Sat.)	:	Excellent
Potassium Chloride(Sat)	:	Excellent
Magnesium Chloride (Sat.)	:	Excellent
Aqueous solutions		
Water	:	Excellent
Sea water	:	Excellent
Raw sewage	:	Very good

Consult the local Fosroc office for specific recommendations to meet each operating condition.

Instructions for use

Preparation

All surfaces to be treated with Nitocote NT402 must be clean and free from dust or loose material.

Concrete surfaces

All laitance must be removed by grit blasting, or other suitable removal methods. The general standard of surface preparation should be in accordance with ACI 503R-89, Chapter 5, Paragraph 5.4.

Following the preparation of a concrete surface, care should be taken to ensure that any surface irregularities are filled with Nitomortar FC*† or Nitomortar FC(B)*†.

Metal surfaces

Any metal surfaces should be grit blasted to a bright finish, meeting the requirements of Swedish Standard SA 2½ or equal.

Priming

Concrete surfaces

Priming is not required on properly prepared concrete surfaces - see Preparation section.

Metal surfaces

All metal surfaces should be coated immediately after preparation. If this is not possible and to eliminate formation of rust, prime the metal surfaces using Nitoprime 25*.

Mixing

The contents of the resin can should be thoroughly stirred to disperse any possible settlement.

The entire contents of both the hardener and resin cans should be poured into a suitable sized mixing vessel.

It is recommended that the two components are mixed together mechanically using a slow speed electric drill fitted with a Mixing Paddle(MR3). Mixing should be carried out continuously for 3 to 5 minutes, until a uniform consistency is achieved.

Although Nitocote NT402 is a non-solvented product, it is still recommended that mixing should take place in an open, well ventilated area.

Application

A minimum 2 coat application is generally recommended to ensure a full, unbroken coating is achieved.

Brush/Roller application

Once mixed, the material should be immediately applied, ensuring that a continuous coating is obtained. The first coat is applied to achieve a uniform coating with a wet film thickness not less than 200 microns, and should be allowed to dry for at least 3 hours at 35°C before the application of the second coat.

The second coat should be applied between 4 hours and 2 days (at 35°C) after the application of the first coat. The second coat should be applied as above again achieving a wet film thickness not less than 200 microns.

Spray application

Where large areas are to be coated, it is advisable to consider spray application. Consult the local Fosroc office for further details and recommendations.

Cleaning

Tools and equipment should be cleaned with Fosroc Colvent 102* immediately after use.

Hot weather working practices

Whilst the performance properties of Nitocote NT402 at elevated temperatures are assured, application under such conditions can sometimes be difficult. It is therefore suggested that, for temperatures above 35°C, the following guidelines are adopted as a prudent working regime:

i Store unmixed materials in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight.

ii Keep mixing and placing equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.

iii Try to eliminate application in the middle of the day, and certainly avoid application in direct sunlight.

iv For hand application, ensure that there are sufficient operatives available to complete application within the pot life of the material.

v Have a ready supply of Fosroc Solvent 102 available for immediate cleaning of tools after use.

Repairing and overcoating

Any applications of Nitocote NT402 which have become damaged can be readily overcoated.

The existing surface should be well abraded, using a stiff wire brush, or similar, to ensure that a good mechanical bond will be achieved between the two layers.

Any loose material should be removed.

Overcoating works can then proceed as for new work, always ensuring that the prepared substrate is free from any moisture.

Limitations

- Nitocote NT402 is formulated for application to clean sound substrates of steel or concrete; and where it can be protected from contact with water for the first 24 hours after application as discolouration should occur.
- For cold weather working (down to 5°C), it is recommended that materials are stored in a heated building and only removed immediately before use. Accelerated heating methods are not to be utilised under any circumstances.

Estimating

Supply

Nitocote NT402	: 10 litre packs / 500kg pack
Nitoprime 25	: 1 and 4 litre packs
Fosroc Solvent 102	: 5 litre packs

Coverage

Nitocote NT402	: 5.0 m^2/litre @ 200 microns WFT (per coat)
Nitoprime 25	: 5.0 m^2/litre

Note: Coverage figures quoted are theoretical, and based upon application to a properly prepared substrate of nominal MC30 concrete.

Since application conditions vary greatly; due to substrate porosity, quality of surface preparation, application thickness and wastage factors, the on-site figures may vary from those shown above.

Storage

Nitocote NT402 supplied in 10 litre packs have has a shelf life of 12 months whereas the bulk packs of 500 kg have a shelf life of 3 months, when stored in warehouse conditions below 35°C.

Precautions

Health and safety

Nitocote NT402, Nitoprime 25 and Fosroc Solvent 102 should not come in contact with skin or eyes, nor should they 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 water and seek medical advice.

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

For further information, please consult the Material Safety Data Sheet for Nitocote NT402.

Fire

Nitocote NT402 and Nitomortar FC are non-flammable.

Nitoprime 25 and Fosroc Solvent 102 are flammable. Do not use near a naked flame.

Flash points

Nitoprime 25	: 55°C
Fosroc Solvent 102	: 33°C

Nitocote® NT402

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.

Important note :
Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products whether or not in accordance with any advice, specification, recommendation or information given by it.

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