



# Nitocote NT402\*

## Environmentally friendly epoxy resin coating

### Uses

Provides chemical and abrasion resistance to prevent corrosion of concrete surfaces for applications such as: seawater tanks, channels & intakes, manhole & pipe linings, sewage works & effluent plants, chemical processing, foundation waterproofing, jetties, piers & docks.

### Advantages

- **Environment friendly** - No VOC. totally free of carcinogenic materials like coat tar, pitch & aromatic hydrocarbons
- **Low cost service life** - Excellent chemical & abrasion resistance, does not support bacterial growth
- **Cost saving** - Primerless system
- **Added value system** - Acts as an impermeable waterproof coating & excellent resistance to underground environment

### Specification

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

### Properties

<b>Solids content</b>	:100%
<b>Specific gravity (ASTM D1475)</b>	:1.35g/cm <sup>3</sup> @ 23°C
<b>Pot life (ASTM D2471):</b>	25 minutes @ 23°C & 13 minutes @ 35°C
<b>Tack free time (ASTM D1640)</b>	:2 - 3 hours @ 23°C :1 - 1.5 hours @ 35°C
<b>Overcoating time (ASTM D1640)</b>	:6 - 8 hours @ 23°C :3 - 4 hours @ 35°C
<b>Full cure (ASTM D1640):</b>	4 days @ 23°C & 2 days @ 35°C
<b>Adhesion resistance (ASTM D4060 – CS 17/1 kg)</b>	:0.22 gm weight loss in :1000 cycles
<b>Adhesion strength (ASTM D4541)</b>	:2.0 N/mm <sup>2</sup>
<b>Water absorption (ASTM C642)</b>	
<b>After immersion @ 23°C</b>	:Nil
<b>After immersion &amp; boiling</b>	:0.1%
<b>Resistance to chloride ion penetration (AASHTO T259 &amp; 260)</b>	:Resistant
<b>Resistance to sulphate ion penetration (AASHTO T259)</b>	:Resistant
<b>Resistance to CO<sub>2</sub> diffusion (AFTL in house method)</b>	:Resistant
<b>Resistance to bacterial growth (AWWA/APHA 20<sup>th</sup> Ed.: 98)</b>	:Resistant
<b>Resistance to Fungal growth (ASTM D3273):</b>	Resistant

## Chemical resistance

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

### Acids (m/v)

<b>Hydrochloric acid 10%</b>	: Excellent
<b>Sulphuric acid 10% &amp; Nitric acid 10% &amp; Phosphoric acid 15% &amp; Acetic acid 5%</b>	: Very good

### Alkalis (m/v)

<b>Ammonia 15% &amp; Sodium Hydroxide 25% &amp; Potassium Hydroxide 25%</b>	: Excellent
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### Salt Solutions

<b>Sodium Chloride (Sat.) &amp; Potassium Chloride (Sat.) &amp; Magnesium Chloride (Sat.)</b>	: Excellent
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### Aqueous solutions

<b>Water &amp; Sea water:</b>	Excellent	<b>Raw sewage :</b>	Very good
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Consult local Fosroc office for specific recommendations to meet each operating condition.

## Description

Nitocote NT402 is based on selected epoxy resins. It is supplied as a 2 pack material in pre-weighed quantities ready for on-site mixing & use. Nitocote NT402 is applied as a 2 coat application. It is generally applied at a wet film thickness of 200 micron/coat but can be applied at greater thicknesses to suit exposure conditions. It is available in light grey, dark grey, black, brick red & sage green.

## Instructions for use

All surfaces must be clean & free from dust/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 requirements of Swedish Standard SA2½ or equal.

## Priming & mixing

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

**Metal surfaces:** Coat all metal surfaces immediately after preparation. If this is not possible & to eliminate formation of rust, prime the metal surfaces using Nitoprime 25IR.

The contents of resin can should be thoroughly stirred to disperse any possible settlement. The entire contents of both hardener & resin cans should be poured into a suitable sized mixing vessel. It is recommended that the 2 components are mixed together mechanically using a slow speed electric drill fitted with Fosroc Mixing Paddle (MR3). Mixing should be carried out continuously for 3-5 minutes until a uniform consistency is achieved. Although this product is non-solvent, it is still recommended that mixing should take place in an open, well ventilated area.

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## Application

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

**Brush/Roller application:** Once mixed, 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 more than 200 microns, & should be allowed to dry for at least 3 hours @ 35°C before application of second coat. Second coat should be applied between 4 hours & 2 days (@ 35°C) after application of first coat. Second coat should be applied as above again achieving a wet film thickness more 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.

## Repairing & overcoating

Any applications of Nitocote NT402 which have become damaged can be readily overcoated. The existing surface should well abraded, using a stiff wire brush/similar to ensure that a good mechanical bond will be achieved between 2 layers. Remove any loose material. Overcoating works can then proceed as for new work, always ensuring that the prepared substrate is free from any moisture.

## Cleaning & Storage

Nitocote NT402 supplied in 10 litre packs has 12 months shelf life whereas 500 kg bulk packs have 3 months shelf life, when stored in warehouse conditions below 35°C. Clean tools & equipment by Fosroc Solvent 102\* 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. So for above 35°C below guidelines are adopted as a prudent working regime:

- Store unmixed materials in a cool environment (preferably temp. controlled), avoiding exposure to direct sunlight
- Keep mixing & 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
- Try to eliminate application in the middle of the day, and certainly avoid application in direct sunlight
- In hand apply, ensure there are sufficient operatives available to finish application within material's pot life
- Have a ready supply of Fosroc Solvent 102 available for immediate cleaning of tools after use

## Limitations

Nitocote NT402 is formulated for application to clean sound steel/concrete substrates & where it can be protected from contact with water for first 24 hours after application as discolouration could occur. Do not apply it over other existing coatings, but can be applied on top of itself (see above). For cold weather working (down to 5°C), it is recommended that materials are stored in heated building & only removed immediately before use. Accelerated heating methods are not to be utilized under any circumstances.

## Estimating

### Supply

<b>Nitocote NT402</b>	: 10 litre packs/500 kg pack
<b>Nitoprime 25IR</b>	: 1 & 3 kg packs
<b>Fosroc Solvent 102</b>	: 4 & 20 litre cans

### Coverage

<b>Nitocote NT402</b>	: 5.0 m <sup>2</sup> /litre @ 200 microns wft per coat
<b>Nitoprime 25IR</b>	: 3.5 - 4.3 m <sup>2</sup> /kg

**Note:** Coverage figures quoted are theoretical & based upon application to a properly prepared substrate of nominal C30 conc.

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.

## Precautions

### Health & safety & fire

Nitocote NT402, Nitoprime 25IR & Fosroc Solvent 102 should not come in contact with skin/eyes or be swallowed. Avoid inhalation of vapours & ensure adequate ventilation. Some people are sensitive to resins, hardeners & solvents. Wear suitable protective clothing, gloves, eye/face protection. Barrier creams such as Kerodex Antisolvent/Rozalex Antipaint provide additional skin protection. If contacted with skin, remove immediately with resin removing cream such as Kerocleanse Standard Grade Skin Cleanser/Rozaklens Industrial Skin Cleanser, followed by washing with soap & water, do not use solvent. If contacts with eyes, rinse immediately with plenty of water & seek medical advice. If swallowed seek medical attention immediately - do not induce vomiting. For information see MSDS of Nitocote NT402. Nitocote NT402 & Nitomortar FC are non-flammable. Nitoprime 25IR & Fosroc Solvent 102 are flammable. Do not use near a naked flame.

### Flash points

<b>Nitoprime 25IR</b>	: 55°C
<b>Fosroc Solvent 102</b>	: 33°C

\* Denotes the trademark of Fosroc International Ltd.

↑ 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.

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