



constructive solutions

# Nitocote EP405\*

Non toxic, epoxy resin, protective coating for concrete & metal

## Uses

Provides a non toxic coating to concrete & metal surfaces, which is both chemical & corrosion resistant. It is suitable for: pipes & tanks, reservoirs & water treatment works, grain silos & dairies, meat & food processing environments.

## Advantages

- Multi-purpose coating, due to non toxicity
- Low cost service life - resistant to mould growth, chemical attack and abrasion
- Easy to apply, solvent free, formulation makes it suitable for use in confined spaces
- Easy cleaning smooth gloss finish with high build capability

## Standards Compliance

- BS 6920: WRC tests on Water Quality
- ASTM D-570-81 Water absorption @ 70°C
- ASTM D-638-77a: Tensile strength
- UK WFBS listed (8710051): Approved for use in contact with potable water

## Specification

The non toxic, epoxy resin coating shall be Nitocote EP405, a 100% solids, solvent free, protective coating. The coating shall be moisture tolerant and, when cured, shall be suitable for use in contact with potable water. It shall further possess excellent bond and chemical resistance properties.

## Description

Nitocote EP405 high gloss, non toxic, coating is based on solvent free, epoxy resins which contain pigments & fine fillers. It is supplied as a 2 pack material, in pre-weighed quantities ready for on site mixing & use. It is applied to dry, or damp, surfaces generally as a 2 coat application to give a final dft of 400 microns. It is available in blue & white to enable simple, visual checking for full coat application. For details on spray application contact your local Fosroc office.

## Properties

<b>Specific gravity</b>	: Approx 1.64 (mixed)	
<b>Solids by weight</b>	: 100% (mixed) @ 25°C	
<b>Pot life (per minutes)</b>	: 30 - 40 @ 20°C & 15 - 20 @ 35°C	
<b>Drying time</b>	<b>@ 20°C</b>	<b>@35°C</b>
<b>Touch dry</b>	: 6 hours	3 hours
<b>Recoat able</b>	: 6 - 18 hours	3 - 12 hours
<b>Fully cured</b>	: 7 days	5 days
<b>Bond strength:</b> (ASTM 4541-85) Substrate failure first @ 2 N/mm <sup>2</sup>		

Chemical resistance (Test results with some common chemicals)

### Acids (m/v)

<b>Phosphoric acid<sup>(1)</sup> 10%</b>	: Very good
<b>Lactic acid<sup>(1)</sup> 10%</b>	: Very good
<b>Hydrochloric acid<sup>(2)</sup> 30%</b>	: Good

### Alkalis (m/v)

<b>Sodium hydroxide 40%</b>	: Excellent
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### Solvents & organics

<b>Kerosene</b>	: Excellent
<b>Petrol<sup>(1)</sup> &amp; Gas oil<sup>(1)</sup></b>	: Very good
<b>Nickel plating solution<sup>(1)</sup></b>	: Very good

### Aqueous solutions

<b>Distilled water, Chlorinated water, Marsh water &amp; Sewage water</b>	: Excellent
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**Note (1):** Can cause some slight surface discolouration

**Note (2):** Acceptable performance up to 7 days immersion

Consult Fosroc Customer Services Dept. for specific recommendations to meet varying operating conditions.

## Instructions for use

All surfaces should be clean, dry & free from dust. Wet substrates should be sponge-dried to remove all free surface water. Treat oil/grease contamination with Fosroc Chem. Degreaser\* followed by water or steam washing.

**Concrete surfaces:** Remove all surface laitance should be by grit-blasting or water jetting, to provide a suitable key for Nitocote EP405. 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 exposed blow holes are filled with Nitomortar FC\*†.

**Metal surfaces:** Any metal surfaces should be blasted to a bright finish, meeting requirements of Swedish Standard SA2½ or equal.

## Priming & mixing & application

Priming is not required on properly prepared surfaces. Contents of resin base tin should be thoroughly stirred to disperse any possible settlement. Entire contents of hardener should be poured into base container and the 2 materials mixed thoroughly until both uniform colour & consistency are obtained. It is recommended that the 2 components are mixed together mechanically; using slow speed electric drill, fitted with Fosroc Mixing Paddle Mixing should be carried out continuously for 3 - 5 minutes. Whilst Nitocote EP405 can be applied to damp surfaces; running water must be excluded from work area during both application & product curing. If excessive seepage/leaking occurs, consult Fosroc office for recommendations.

**Spray application:** Faster rates of application are possible using airless spray equipment, but local Fosroc office should be contacted prior to application for tech. advice.

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**Hand application:** This can be suitably achieved by brush or roller. The first coat should be firmly applied and scrubbed well into the surface, ensuring that a continuous film results of uniform thickness. The second coat will cover more readily than the first, and should be applied within the 'overcoating times' mentioned above. It is further recommended that a contrasting colour is chosen for the second coat, to ensure unbroken coverage.

**Use of glass fibre reinforcement:** Nitocote EP405 may be used in conjunction with glass fibre reinforcement to increase coating thickness, or where it necessary to bridge static cracks in substrate. Fabric should be laid directly onto the first coat whilst it still wet, and should be pressed in and smoothed out with split washer roller or suitable alternative. Second & subsequent coats may then be applied accordance with 'overcoating times' mentioned above. Open weave glass cloth in range of 100 - 300 gm/m<sup>2</sup> considered most suitable for this application.

**Repairing & overcoating:** Any applications of Nitocote EP405 which have become damaged can be readily overcoated. The existing surface should well abraded, using a stiff wire brush, or similar, to ensure that a good mechanical bond will be achieved between the 2 layers. Overcoating works can then proceed as for new work.

## Limitations

A minimum application temperature of 5°C should be observed at all times. Nitocote EP405 should not be applied on top of existing coatings, but can be applied on top of itself. For above 35°C, hot weather working practices should be adopted.

## Hot weather working practices

Whilst the performance properties of Nitocote EP405 at elevated temperatures are assured, application under such conditions can sometimes be difficult. It is therefore suggested that, 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 application ensure there are sufficient operatives available to complete application within material pot life
- Have a ready supply of Fosroc Solvent 102 available for immediate cleaning of tools after use



### 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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Cert No. THR2004006

## Cleaning & storage

Clean tools & equipment with Solvent 102\*† immediately after use. Nitocote EP405 has a shelf life of 12 months, when stored in warehouse conditions below 25°C.

## Estimating

### Supply

**Nitocote EP405** : 4 litre packs

**Fosroc Solvent 102** : 4 & 20 litre cans

### Coverage

**Nitocote EP405** : 5.0 m<sup>2</sup>/litre @ 250 microns wft/coat

Coverage figures quoted for Nitocote EP405 are theoretical, and based upon plain application (without glass fibre) to a properly prepared substrate of nominal C30 concrete. Since application conditions vary greatly; due to substrate porosity, quality of surface preparation, application thickness & wastage factors, the on-site figures may vary from those shown below.

## Precautions

### Health & safety & fire

Nitocote EP405 & Fosroc Solvent 102 should not come in contact with skin or eyes, nor should they 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 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/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 & seek medical advice. If swallowed seek medical attention immediately - do not induce vomiting. For information, consult Product MSDS Nitocote EP405 is non-flammable. Fosroc Solvent 102 is flammable. Keep away from sources of ignition. No smoking. In event of fire, extinguish with CO<sub>2</sub> or foam. Do not use a water jet.

### Flash point

**Fosroc Solvent 102** : 33°C

\* Denotes the trademark of Fosroc International Ltd.

† See separate data sheet