



# Nitocote EP405

## Non toxic, epoxy resin, protective coating and waterproofing lining for concrete and metal

### Uses

Provides a non toxic coating to concrete and metal surfaces, which is both chemical and corrosion resistant. It is suitable for applications such as:

- Pipes and tanks
- Swimming pools, reservoirs and water treatment works
- Grain silos and dairies
- Meat and food processing environments

### Advantages

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

### Standards Compliance

- BS 6920 : WRc tests on Water Quality.
- ASTM D-570-98 : Water absorption at 23±2°C.
- UK WFBS listed (8710051):Approved for use in contact with potable water.

### Description

Nitocote EP405 high gloss, non toxic, coating is based on solvent free, epoxy resins which contain pigments and fine fillers. It is supplied as a two pack material, in pre-weighed quantities ready for on site mixing and use.

Nitocote EP405 is applied to dry, or damp, surfaces generally as a two coat application to give a final dry film thickness of 400 microns.

For details on spray application contact your local Fosroc office.

### 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.

### Properties

**Solids by weight @ 25°C** : 100 % (mixed)

#### Pot life

@ 25°C : +/- 90 min.  
@ 35°C : +/- 55 min.

Drying time	@20°C	@35°C
touch dry	6 hrs	3 hrs
recoatable	6-18 hrs	3-12 hrs
fully cured	7 days	5 days

**Bond strength (ASTM 4541-85)** : Substrate failure first at 2 N/mm<sup>2</sup>

**Water Absorption (weight)** : < 0.1%

#### Chemical resistance

(test results with some common chemicals)

#### Acids (m/v)

**Phosphoric acid<sup>1</sup> 10%** : Very good

**Lactic acid<sup>1</sup> 1%** : Very good

**Hydrochloric acid<sup>2</sup> 30%** : Good

#### Alkalis (m/v)

**Sodium Hydroxide 40%** : Excellent

#### Solvents & organics

**Kerosene** : Excellent

**Petrol<sup>1</sup>** : Very good

**Gas oil<sup>1</sup>** : Very good

**Nickel plating solution<sup>1</sup>** : Very good

#### Aqueous solutions

**Distilled water** : Excellent

**Chlorinated water** : Excellent

**Marsh water** : Excellent

**Sewage water** : Excellent

(1) Note - can cause some slight surface discolouration

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(2) Note - acceptable performance up to 7 days immersion

Contact Fosroc representative for specific recommendations to meet varying operating conditions.

## Instructions for use

### Preparation

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

#### Concrete surfaces

All surface laitance should be removed by grit blasting or water jetting, to provide a suitable key for Nitocote EP405. 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 exposed blow holes are filled with Nitomortar FC\*†.

#### Metal surfaces

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

### Priming

Priming is not required on properly prepared surfaces.

### Mixing

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

The entire contents of the hardener should be poured into the base container, and the two materials mixed thoroughly until both uniform colour and consistency are obtained.

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

### Application

Whilst Nitocote EP405 can be applied to damp surfaces; running water must be excluded from the work area

during both application and curing of the product. Where excessive seepage or leaking occurs, consult the local Fosroc office for recommendations.

#### 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 'over coating times' mentioned above. It is further recommended that a contrasting colour is chosen for the second coat, to ensure unbroken coverage.

#### Spray application

Faster rates of application are possible using airless spray equipment, but the local Fosroc office should be contacted prior to application for technical advice.

### Cleaning

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

### 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 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.

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## Use of glass fibre reinforcement

Nitocote EP405 may be used in conjunction with glass fibre reinforcement to increase coating thickness, or where it is necessary to bridge static cracks in the substrate.

The fabric should be laid directly onto the first coat whilst it is still wet, and should be pressed in and smoothed out with a split washer roller or suitable alternative.

Second and subsequent coats may then be applied in accordance with the 'overcoating times' mentioned above.

Open weave glass cloth in the range of 100 to 300 gm/m<sup>2</sup> is considered most suitable for this application.

## Repairing and 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 two 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 (see above).
- Nitocote EP405 is not colour stable when exposed to direct sunlight or other UV light sources, or when in contact with some chemicals. Dekguard PU\*<sup>†</sup> or Dekguard PU100\*<sup>†</sup> may be used to provide colour stability.

In high temperature conditions, of above 35°C, hot weather working practices should be adopted (see above).

## 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.

## Estimating

### Supply

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<b>Nitocote EP405</b>	: 5 litre packs
<b>Fosroc Solvent 102</b>	: 5 litre packs

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### Coverage

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 and wastage factors, the on-site figures may vary from those shown below.

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<b>Nitocote EP405</b>	: 5.0m <sup>2</sup> /litre @ 200 microns wft/coat
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### Storage

#### Shelf life

Nitocote EP405 has a shelf life of 12 months, when stored in warehouse conditions below 25°C.

### Precautions

#### Health and safety

Nitocote EP405 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.

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## Fire

Nitocote EP405 is non-flammable.

Fosroc Solvent 102 is flammable . Keep away from sources of ignition. No smoking. In the event of fire, extinguish with CO<sub>2</sub> or foam. Do not use a water jet.

## Flash point

**Fosroc Solvent 102** : 33°C

For further information, consult the Product Material Safety Data Sheet.

## 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.



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## 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 Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of 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 of information given by it.

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