



# Nitocote EP415\*

Solvent free epoxy coating & lamination system

## Uses

As a protective coating for concrete or metal storage tanks in oil fields, refineries, the paper industry, water purifying plants, tunnels and reservoirs. The system can be used with or without a glass fibre reinforcement depending upon the need for increased build or mechanical properties.

## Advantages

- Solvent free & Excellent chemical & abrasion resistance
- Can be used on steel or concrete substrates
- Thixotropic for easy application on vertical surfaces
- Locally produced for Middle East conditions

## Specification

Epoxy coating and lamination system

The chemical & abrasion resistant coating shall be Nitocote EP415, a two-component solvent free epoxy suitable for application with glass fibre reinforcement to provide a tough, impermeable and chemically resistant system.

## Description

Nitocote EP415 is a two-component, solvent free, high build epoxy resin specially formulated to provide a thixotropic coating suitable for application to vertical surfaces. The cured coating is clear and light in colour so that the glass fibre reinforcement is visible. A special high-build version for increased protection is also available. It is supplied in pre-weighed packs ready for onsite mixing & use.

## Properties

<b>Solid content by weight</b>	: 100%	
<b>Specific gravity</b>	: 1.15	
<b>Pot life</b>	<b>Standard</b>	<b>Tropical</b>
@ 20°C	: 60 minutes	240 minutes
@ 35°C	: 15 minutes	90 minutes

The fully cured coating is resistant to:

<b>Ammonium hydroxide</b>	- Slight attack <sup>(1)</sup>
<b>Detergents, water &amp; seawater</b>	- No attack
<b>Fatty acid (higher)</b>	- Slight attack <sup>(1)</sup>
<b>Hydrochloric acid 30%</b>	- No attack
<b>Lactic acid 10% &amp; Nitric acid 10%</b>	- No attack
<b>Oil, mineral &amp; petrol</b>	- No attack
<b>Sodium hypochlorite 10%</b>	- Slight attack <sup>(1)</sup>
<b>Sulphuric acid 20%</b>	- No attack

**Note (1):** Indicates slight attack under continuous immersion, but Nitocote EP415 will withstand lengthy exposure to chemical splash and spray. Attack refers to any etching or swelling observed but ignores discoloration.

Consult local Fosroc office for resistance to specific chemicals.

## Design criteria

Nitocote EP415 is designed for application in 2 coats to achieve a minimum dry film thickness of 500 microns. To achieve the correct protective properties, it must be applied on to substrate at recommended coverage rates.

## Instructions for use

### Preparation

**Concrete surfaces:** All surfaces must be dry, smooth, sound and free from debris and loose material. Surfaces must be free from contamination such as dust, loose particles and organic growth. Oil & grease penetration should be removed by hot compressed air treatment. Concrete surfaces must be fully cured, laitance free and free from any traces of shuttering release oils and curing compounds. This is best achieved by sand/grit blasting. All blow holes & imperfections should be filled with Nitomortar FC. All surfaces should then be primed with Nitoprime 25IR (fast curing for low temperatures) or Nitoprime 31 (normal curing). Both primers are 2 component, solvent free, epoxy based primers, supplied in pre-weighed quantities ready for mixing. Complete packs should be mixed and applied in a thin, continuous film using a brush or short haired quality wool roller. The primer should be touch dry but allowed to cure for no more than 24 hours @ 20°C and 12 hours @ 35°C before the application of Nitocote EP415. The pot life of Nitoprime 25IR is 80 minutes @ 20°C, 30 minutes @ 35°C.

**Steel surfaces:** All surfaces should be grit blasted to meet the requirements of SA2½. The application work should be programmed so that newly cleaned steel is primed before the formation of rust or scale with Nitoprime 25IR. Nitoprime 25IR is a 2 component solvent based epoxy primer. Before application the 2 components should be thoroughly mixed for 2 minutes and applied by brush in a thin continuous film. Nitocote EP415 can be applied once the primer has become tack-free (5 hours @ 20°C or 1.5 hours @ 35°C).

### Mixing & application

The individual components of Nitocote EP415 should be thoroughly stirred before the two are mixed together. The entire contents of base container should be poured into hardener container and the 2 materials mixed thoroughly for at least 3 minutes. The use of a heavy duty slow speed drill fitted with Fosroc MR3 is desirable.

<b>Number of coats</b>	: 2	
<b>Theoretical application rate</b>	: 0.25 litre/m <sup>2</sup> (per coat)	
<b>Theoretical wet film thick.</b>	: 250 microns (per coat)	
	<b>Standard</b>	<b>Tropical</b>
<b>Overcoating times @ 20°C</b>	: 3 - 18 hours	12 - 36 hours
<b>Overcoating times @ 35°C</b>	: 1 - 6 hours	3 - 18 hours
<b>Touch dry @ 20°C</b>	: 3 hours	6 hours
<b>Touch dry @ 35°C</b>	: 1 hour	3 hours
<b>Full cure @ 20°C</b>	: 7 days	10 days
<b>Full cure @ 35°C</b>	: 4 days	7 days

# Nitocote EP415\*

Mixed Nitocote EP415 should be applied by a nylon brush & finally smooth out with a steel trowel to achieve a uniform coating with a wet film thickness not less than 250 microns. Any movement joints in the structure should be expressed through the coating and sealed with an appropriate sealant. Second coat may be applied as soon as the first coat has initially dried within the time limits specified.

## Use of glass fibre reinforcement

Nitocote EP415 may be used in conjunction with glass fibre cloth to increase thickness or, where necessary, bridge fine cracks in the substrate. The cloth should be laid directly on the first coat whilst wet and should be pressed in and smoothed out with a stiff nylon brush or split washer roller. A second coat should then be applied, observing the correct recoating time & achieving 250 microns thickness. Suitable cloth is open weave 110 g/m<sup>2</sup> glass cloth.

## Repairing and overcoating

Areas which have previously been coated with Nitocote EP415 & subsequently damaged can be readily overcoated. The existing coated surface must be well abraded, using sand blasting or wet applied abrasive paper, to ensure a good bond. Overcoating may then be carried out as for new work.

## Cleaning

Remove Nitoprime 25IR & Nitocote EP415 from tools & equipment with Fosroc Solvent 102 immediately after use. Cured material can only be removed mechanically.

## Limitations

Although Nitocote EP415 may be applied at temperatures down to 7°C, the curing time increases significantly in the lower ranges. For cold weather working it is recommended that materials are stored in a heated building and only removed immediately before use. Nitocote EP415 should not be applied when relative humidity is greater than 85%. Accelerated heating must not be used.

## Storage

All products have a shelf life of 12 months if kept in a dry store between 5°C and 30°C in the original, unopened containers. Storage in dry conditions at temperatures between 5°C & 30°C in original, unopened containers. If stored at high temperatures, the shelf life will be reduced. Nitocote EP415 should be protected from frost.



### 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

## Estimating

### Supply

<b>Nitocote EP415</b>	: 4 litre packs
<b>Nitoprime 25IR</b>	: 1 & 3 kg packs
<b>Fosroc Solvent 102</b>	: 4 & 20 litre cans

### Coverage

<b>Nitocote EP415</b>	: 4.0 m <sup>2</sup> /litre @ 250 microns wft
<b>Nitoprime 25IR</b>	: 3.5 - 4.3 m <sup>2</sup> /kg

The coverage figures are theoretical. Due to wastage factors and the variety and nature of possible substrates, practical coverage figures may be substantially reduced.

## Precautions

### Health and safety

Nitocote EP415, Nitoprime 25IR & Fosroc Solvent 102 should not come in contact with skin & eyes, or be swallowed. When using these materials, ensure adequate ventilation & avoid inhalation of vapours. If working in confined areas, then suitable respiratory protective equipment must be worn. Some people are sensitive to resins, hardeners & solvents. Wear suitable protective clothing, gloves & eye protection. The use of barrier creams provides additional protection. In case of contact with skin, remove immediately with suitable resin removing cream, then cleanse with soap & water. Do not use solvent. In case of contact with eyes, rinse immediately with plenty of clean water & seek medical advice. If swallowed, seek medical attention immediately. Do not induce vomiting. For information, consult Product Material Safety Data Sheet.

### Fire

Nitocote EP415 is non-flammable. Nitoprime 25IR and Solvent 102 are 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 points

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

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