

Nitocote® EP405

Solvent free epoxy resin coating for potable water retaining structures

Uses

Nitocote EP405 is used for lining and waterproofing potable water retaining structures and surfaces subject to contact with food stuffs. The cured film is resistant to corrosion, chemical attack and abrasion and is suitable for application to reservoirs, tanks, silos, water treatment works, breweries, dairies, meat and food processing plants. The cured film is non-toxic and meets the requirements of IS : 9833 - 1981.

Advantages

- Food grade & Hygienic – Suitability to potable water and food stuff storage.
- Compatible with all substrates – Can be applied directly on to mild steel and concrete
- Aesthetic – Forms a smooth, glossy and to easy clean surface on curing
- Abrasion resistant – Exceptional resistance to abrasion and to a wide range of chemicals
- Corrosion resistant – Does not contain any metallic particles
- Chemical resistant – Proven against a wide range of industrial chemicals
- Solvent free & Non – toxic - No odour during application and can be used in confined areas.

Description

Nitocote EP405 is a two pack, solvent free, epoxy resin material. It is supplied in pre-measured quantities ready for site mixing and use. The material cures to provide a smooth, hygienic and tough finish which is suitable for contact with potable water and foodstuffs. It is available in blue and white colours.

Technical support

Fosroc provides a technical advisory service supported by a team of specialists in the field.

Design criteria

Nitocote EP405 is designed to be applied in two coats to achieve a minimum total dry film thickness of 200 microns. To achieve the correct protective properties, Nitocote EP405 must be applied on to the substrate at the coverage rates recommended.



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Properties

Volume of solids	: 100%	
Specific gravity/Mixed density	: 1.85 g/cc	
Viscosity	Pourable, spreadable liquid	
Pot life	@ 20°C 60-80 min.	@ 30°C 45 min.
Adhesive bond strength	: > 1 N/mm ² with concrete (ASTM D4541)	
Permeability @ 5 bar for 72 hrs. Depth of Penetration (mm) (EN 12390 (Part 8) 2008	: Max 25.0 mm	

The local Fosroc office should be consulted for resistance data to specific chemicals.

Specification clauses

Potable water / waterproofing lining

The tank/reservoir lining shall be Nitocote EP405, a two pack epoxy coating specifically designed for contact with potable water. The cured film shall comply with the requirements of IS:9833 - 1981.

Application instructions

Preparation

Concrete surfaces

All surfaces must be smooth, sound and free from debris, loose or flaky material and areas of standing water. Surfaces must be free from contamination such as oil, grease, dust, loose particles and organic growth. Concrete surfaces must be fully cured, laitance free and free from any traces of shuttering, release oils and curing compounds.

All surfaces should then be grit blasted to remove all foreign matter and open up blow-holes, and provide a suitable key for Nitocote EP405.

All blow holes and imperfections should be filled with Nitocote VF / Nitomortar FC.

Steel surfaces

All surfaces should be grit blasted to obtain bright metal surface. The lining work should be programmed so that newly cleaned steel is coated as soon as possible before the formation of rust or scale.

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Mixing

The contents of the base can should be stirred thoroughly to disperse any settlement. The entire contents of the hardener can should be poured into the base container and mixed thoroughly until a uniform consistency is obtained, taking particular care to scrape the sides and bottom of the container. It is recommended that mechanical mixing be employed, using a mixer or a heavy duty, slow speed electric drill fitted with a paddle.

Application

Number of coats	:	2
Theoretical application rate per coat	:	0.1 litre per m ²
Theoretical wet film thickness/coat	:	100 microns
Dry film thickness/coat	:	100 microns
Overcoating time (hours)	:	@ 20°C @30°C 24 18
Fully cured	:	7 days @ 30°C
Minimum application temperature	:	10°C

Any surfaces should be treated with two coats of Nitocote EP405.

The thoroughly mixed material should be applied with a suitable stiff nylon type brush.

The first coat must be firmly applied and be well scrubbed into the surface, ensuring a uniform coating with a wet film thickness not less than 100 microns. The first coat should be allowed to become tack free before applying the second coat.

The second coat should be applied exactly as above, again achieving a wet film thickness not less than 100 microns.

For ease of overcoating, it is recommended that the first coat be white and the second coat be blue, or vice - versa.

For cold weather working, it is recommended that Nitocote EP405 be stored in a heated building and removed immediately before use, as workability deteriorates and curing times increase at lower temperatures.

Cleaning

Nitocote EP405 should be removed from tools and equipment with Nitoflor Sol, solvent immediately after use. Cured material can only be removed mechanically.

Limitations

Nitocote EP405 is formulated for application to clean sound concrete and steel.

Nitocote EP405 should not be applied over existing coatings. Application should not be undertaken if the temperature is 10°C and falling, nor when the prevailing relative humidity exceeds 90%.

Although Nitocote EP405 may be applied to damp concrete, there must be no standing or running water.

Nitocote EP405, the final colour can vary with curing conditions, and in adverse conditions such as low temperature and/or high humidity, a white bloom may appear on the surface. However, this does not affect the performance of the coating.

Estimating

Packaging

Nitocote EP405	4 litre pack
Nitoflor Sol	5 and 20 litre cans

Coverage

Nitocote EP405 covers 10.0 m² per litre per coat at 100 micron thickness.

The coverage figure is theoretical - due to wastage factors and the variety and nature of substrates, practical coverage figures may be substantially reduced.

Storage

Shelf life

12 months if kept in dry store between 5°C and 30°C in the original, unopened containers.

Storing in dry conditions at temperatures between 5°C and 30°C in the original unopened containers is recommended. If stored at high temperatures the shelf life may be reduced.

Precautions

Health and Safety instructions

Nitocote EP405 and Nitoflor Sol solvent should not come into contact with skin and eyes or be swallowed. When using Nitoflor Sol, adequate ventilation shall be ensured and inhalation of vapours shall be avoided. Some people are sensitive to resins, hardeners and solvents. Hence suitable protective clothing, gloves and eye protection shall be worn. The use of barrier cream provides additional skin protection. In case of contact with the skin, it shall be rinsed with plenty

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of clean water, then cleansed with soap and water. Solvent should not be used. In case of contact with eyes, it shall be rinsed immediately with plenty of water and medical advice shall be sought immediately. If swallowed medical attention shall be sought immediately - Vomiting should not be induced.

Fire

Nitocote EP405 is non-flammable.

Nitoflor Sol is flammable. It should be kept away from sources of ignition. Smoking is prohibited during application / handling of the product. In the event of fire, it shall be extinguished with CO₂ or foam. Use of water jet is not recommended.

Flash points

Nitoflor Sol : 33°C

Additional information

Fosroc manufactures a wide range of products specifically designed for the repair and refurbishment of damaged reinforced concrete. This includes Renderoc mortars, fluid micro- concretes, chemical resistant epoxy mortars and a comprehensive package of protective coatings. In addition, a wide range of complementary products is available. This includes joint sealants, waterproofing membranes, grouting, anchoring and specialised flooring materials.



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