Nitocote EP405

FOSROC constructive solutions

Solvent-free epoxy resin coating for potable water retaining structures

Uses

For lining and waterproofing potable water retaining structures and surfaces subject to contact with foodstuffs. The cured film is corrosion, chemical and abrasion resistant and is suitable for application to reservoirs, tanks, silos, water treatment works, breweries, dairies and meat and food processing plants. The cured film is non toxic and meets the requirements of BS 6920 and is listed by the United Kingdom Water Fittings Byelaws Scheme.

Advantages

- High build application
- Suitable for use in confined areas
- Can be applied directly to mild steel and concrete
- Smooth, glossy, easy to clean surface
- Corrosion, chemical and abrasion resistant
- Can be applied to damp surfaces
- Water Byelaws Scheme - approved product

Standard compliments

Nitocote EP405 meets the requirements of BS 6920, the United Kingdom Water Byelaws Scheme, tests of effect on water quality.

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.

Technical support

Fosroc offers a comprehensive range of high performance, high quality products suitable for use within all aspects of the water industry. In addition, the company offers a technical support package to specifiers, end users and contractors, as well as on-site technical assistance all over the world.

Design criteria

Nitocote EP405 is designed to be applied in two coats to achieve a minimum total dry film thickness of 400 microns. To achieve the correct protective properties, Nitocote EP405 must be applied on to the substrate at the coverage rates recommended.

Properties

Volume solids:	100%
Viscosity:	Pourable, spreadable liquid
Pot life-	
@ 20°C:	30-40 minutes
@ 8 35°C:	10-15 minutes

The local Fosroc office should be consulted for resistance 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 in all respects with the requirements of the United Kingdom Water Fittings Byelaws Scheme as set out in BS 6920.

Application instructions

Preparation

Concrete surfaces

All surfaces must be smooth, sound and free from debris, loose or flaking 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 provide a suitable key for Nitocote EP405.

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All blow holes and imperfections should be filled with Nitomortar FC. Consult the local data sheet for pot life and overcoating time.

Steel surfaces

All surfaces should be grit blasted to meet the requirements of BS 4232, First Quality. The lining work should be programmed so that newly cleaned steel is coated as soon as possible before the formation of rust or scale.

Mixing

The contents of the base can should be stirred thoroughly to disperse any settlement. The entire contents of the hardener can should be added to 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 Jiffy mixer on a heavy duty, slow speed electric drill.

Application

Number of coats:	2
Theoretical application rate per coat:	0.2 litres per m^2
Theoretical wet film thickness per coat:	200 microns
Overcoating times	
@ 5°C:	18-48 hours
@ 20°C:	6-18 hours
@ 30°C:	3-9 hours
Fully cured -	
@ 5°C:	14 days
@ 20°C:	7 days
@ 30°C:	7 days

The minimum application temperature is 5°C.
All 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 200 microns. The first coat should be allowed to dry for not less than 6 hours and not more than 18 hours at 20°C.

The second coat should be applied exactly as above, again achieving a wet film thickness not less than 200 microns.

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

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 Fosroc Solvent 102 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 below 5°C, or is 5°C and falling, nor when the prevailing relative humidity exceeds 90%.

Although Nitocote EP405 may be applied to damp concrete, there must be not standing or running water.

Nitocote EP405 is not colour stable when exposed to direct sunlight nor when in contact with some chemicals.

On curing 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 effect the performance of the coating.

Estimating

Supply	
Nitocote EP405:	2.5 kg packs (1.5 litres)
Fosroc Solvent 102:	5 litre cans
Coverage	
Nitocote EP405:	3 m^2 per kg per coat (5 m^2 per litre)

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

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UN packaging regulations

To comply with current regulations, all products of a hazardous nature, which are subjected to a sea crossing as part of their delivery requirements, must be packed in UN approved receptacles.

When a known sea crossing is involved, whether locally or for export, Fosroc will supply in the correct UN packaging. Where Fosroc is requested to deliver within a mainland boundary, but the Purchaser intends to onward ship, it is incumbent upon the Purchaser to specify that UN packaging is required at the time of placing the order. Otherwise, once received, responsibility rests with the Purchaser. The use of UN packaging may effect the selling price of products. Please consult the local Fosroc Area Manager or office.

Storage

Shelf life

All products have a shelf life or 12 months if kept in a dry store between 5°C and 30°C in the original, unopened containers.

Storage conditions

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

Precautions

Health and safety

Nitocote EP405 and Fosroc Solvent 102 should not come in contact with the skin and eyes, or be swallowed. When using Fosroc Solvent 102 ensure adequate ventilation and avoid inhalation of vapour. Some people are sensitive to resins, hardeners and solvent. Wear suitable protective clothing, gloves and eye protection. The use of barrier cream provides additional skin protection. In case of contact with the skin, rinse with plenty of clean water, then cleanse with soap and water. Do not use solvent. In case of contact with eyes. rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately - do not induce vomiting.

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_2 or foam. Do not use a water jet.

Flash point

Fosroc Solvent 102:33°C

For further information, refer to the Product Material Safety Data Sheet.

Additional information

Fosroc manufactures a wide range of products specifically designed for the repair and refurbishment of damaged reinforced concrete. This includes hand-placed and spray grade 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.

Fosroc has produced several educational training videos which provide more detail about the mechanisms which cause corrosion within reinforced concrete structures and the solutions which are available to arrest or retard the destructive mechanisms.

Further information is available from the publication 'Concrete Repair and Protection - The Systematic Approach', available in seven language formats.

For further information about products, training videos or publications, contact the local Fosroc office.

Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification or 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 or information given by it.

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