Nitocote EP403

constructive solutions

Damp-tolerant, solvent free epoxy resin coating

Uses

As a protective coating for concrete and mild steel. The cured film is corrosion, chemical and abrasion resistant and is suitable for application to sewage works, marine environments, basements and tunnels. It is particularly useful where concrete surfaces are damp and cannot be dried out.

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.

Description

Nitocote EP403 is a two packs, 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, tough and resistant finish. It is available in light grey.

Technical support

Fosroc offers a comprehensive range of high performance, high quality products suitable for use within all aspects of the concrete repair and protection 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 EP403 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 EP403 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
@ 35°C:	10 - 15 minutes
The fully cured film is resistant to:	Distilled water Petrol Xylene 50% sulphuric acid Saturated sodium chloride 50% sodium hydroxide

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

Specification clauses

Corrosion, chemical and abrasion resistant lining

The chemical and abrasion resistant coating shall be Nitocote EP403, a solvent free epoxy, specifically designed for application to damp surfaces and to provide a tough, impermeable and resistant film.

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 open up all blow-holes, and provide a suitable key for Nitocote EP403.

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

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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
Over-coating time	
@ 5°C:	18 - 38 hours
@ 20°C:	6 - 18 hours
@ 35°C:	2 - 6 hours
Fully cured	
@ 5°C:	14 days
@ 20°C:	7 days
@ 35°C:	5 days

The minimum application temperature is 5°C.

All surfaces should be treated with two coats of Nitocote EP403.

The thoroughly mixed material should be applied with a suitable 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.

For cold weather working, it is recommended that Nitocote EP403 be stored in a heated building and removed immediately before use, as workability deteriorates and curing times increase at lower temperatures.

A tropical grade version of Nitocote EP403 is available for working at elevated temperatures.

Cleaning

Nitocote EP403 should be removed from tools and equipment with Fosroc Solvent 102 immediately after use. Cured material can only be removed mechanically.

Limitations

Nitocote EP403 is formulated for application to clean, sound concrete and steel.

Nitocote EP403 should not be applied over existing coatings.

Nitocote EP403 is not suitable for use in marine environments that are subject to heavy fouling.

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 EP403 may be applied to damp concrete, there must be no standing or running water.

Nitocote EP403 is not colour stable when exposed to direct sunlight nor when in contact with some chemicals.

On curing Nitocote EP403, 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

Supply

Nitocote EP403:	4 L
Fosroc Solvent 102:	4 litre cans

Coverage

Nitocote EP403:	3 m^2 per kg per coat (5 m^2 per litre @ 200 micron)

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

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 requirement, must be packed in UN approved receptacles.

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When a known sea crossing is involved, whether locally or for export, Fosroc will supply in the correct UN packaging. Where Fosroc are 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 affect the selling price of products. Please consult the local Fosroc Area Manage or office.

Storage

Shelf life

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 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. Air conditioned storage at high ambient temperatures is recommended

Precautions

Health and safety

In common with most two part epoxy resin systems, Nitocote EP403 will react exothermically when mixed and left in bulk. The heat generated may be excessive and can lead to vapour emission and splash damage to adjacent surfaces. To eliminate risk of exothermic, this product should only be mixed when ready for use and then applied without delay. Any unused residue should be poured on to a disposable impervious surface to allow cure before disposal.

Nitocote EP403 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 resins, hardeners and solvent. Wear suitable protective clothing, gloves and eye protection. The use of barrier creams 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 EP403 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.
For further information about products, contact the local Fosroc office.

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