



constructive solutions

Nitocote EP403*

Damp-tolerant, solvent free epoxy resin coating

Uses

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

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

Specification

Corrosion, chemical & 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.

Properties

Volume solids	: 100%
Pot life	: 30 - 40 minutes @ 20°C : 10 - 15 minutes @ 35°C
Water permeability resistance	: No water penetration
Bond strength (BS 1881, Part 207)	: > 2.00 N/mm ²
Dynamic crack bridging capability	: Passed : In accordance with specification for Protective Coating, published by Civil Eng. Dept. Hong Kong
Salt spray resistance	: Passed (BS 1881: Part 4:1988)
Sea water immersion resistance	: Passed : (BS 1881, Part 124:1988)
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.

Description

Nitocote EP403 is a twp 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, tough & resistant finish. It is available in light grey.

Design criteria

It is designed to be applied in 2 coats to achieve minimum total dry film thickness of 400 microns. To achieve the correct protective properties, it EP403 must be applied on to the substrate at the coverage rates recommended.

Instructions for use

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 shutter release oils and curing compounds. All surfaces should then be grit blasted to remove any foreign matter, and provide a suitable key for Nitocote EP403. All blow holes & imperfections should be filled with Nitomortar FC*† or Nitomortar FC(B)*†. Consult local data sheet for pot life & overcoating time.

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

Priming & mixing

Priming is not normally required provided the substrate is sound, untreated and good quality non porous concrete. If any doubts exist of the quality of the concrete, or if it is porous it should be primed with Nitoprime SP*. Contact the local Fosroc office for advice. Nitoprime SP should be mixed in the proportions supplied. Add the entire contents of the hardener can into the base can. When thoroughly mixed, preferably using a slow speed drill and paddle, the primer should be applied in a thin continuous film, using rollers or stiff brushes. Work the primer well into the surface of the concrete taking care to avoid ponding or over application. The primer should be left to achieve a tack-free condition before applying the top coat. A second coat of primer may be required if the substrate is excessively porous. The contents of the base can should be stirred thoroughly to disperse any settlement. Entire contents of the hardener can should be added to base container & 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 Fosroc mixing paddle MR3 on a heavy duty, slow speed electric drill.

Application

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 or roller. 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.

Nitocote EP403*

Number coats	: 2
Theoretical application rate/coat	: 0.2 litres per m ²
Theoretical wet film thickness/coat	: 200 microns
Overcoating times	
@ 5°C	: 18 - 48 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 first coat should be allowed to dry for not less than 2 hours and not more than 16 hours at 35°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.

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

- It should not be applied over existing coatings
- It is not suitable for use in marine environments that are subject to adherent organic growth
- 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 or when in contact with some chemicals. Dekguard PU*† may be used to provide colour stability
- 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



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

Nitocote EP403	: 4 litre packs
Nitoprime SP	: 4 litre packs
Fosroc Solvent 102	: 4 & 20 litre cans

Coverage

Nitocote EP403	: 5.0 m ² /litre @ 200 microns wft per coat
Nitoprime SP	: 8 m ² /litre

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

Storage

All products have a shelf life of 12 months if kept in a dry, air conditioned store between 5°C and 30°C in the original, unopened containers. If stored at high temperatures the shelf life will be reduced. Air conditioned storage at high ambient temperatures is recommended.

Precautions

Health & safety & fire

Nitocote EP403, Nitoprime SP and Fosroc Solvent 102 should not come in contact with skin and eyes, or be swallowed. When using Fosroc Solvent 102 ensure adequate ventilation & avoid inhalation of vapour. Some people are sensitive to resins, hardeners & solvent. Wear suitable protective clothing, gloves & 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 & 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. For further information, refer to Product Material Safety Data Sheet. Nitocote EP403 is non-flammable. Nitoprime SP & Fosroc Solvent 102 are flammable. Keep away from sources of ignition. No smoking. In the event of fire, extinguish with CO₂ or foam. Do not use a water jet.

Flash points

Fosroc Solvent 102	: 33°C
Nitoprime SP	: 57°C

* Denotes the trademark of Fosroc International Ltd.

† See separate data sheet