

Fosroc® Nitocote EPU

Protective coating, based on epoxy polyurethane resins

Uses

Provides chemical and abrasion resistance to prevent corrosion of concrete surfaces for applications such as:

- Wall and floor coating for concrete protection
- Manhole and pipe linings
- Secondary containments
- Lining for sewage and effluent plants
- Sea water tanks, channels and intakes
- Construction footings protection.
- Reservoirs, water treatment plants.

Advantages

- Cost saving - primer less system, easy brush roller or spray application
- Impermeable.
- Coating and excellent resistance to underground environment
- Excellent chemical resistance.

Description

Fosroc Nitocote EPU is based on hybrid combination of epoxy polyurethane resins. It is supplied as a two pack material in pre-weighed quantities ready for on-site mixing and use. Fosroc Nitocote EPU is applied as a two coat applica-tion. It is generally applied at a wet film thickness of 200 mi-crons per coat. Fosroc Nitocote EPU is available in a stand-ard Grey color, other colors are available subject to minimum order quantities.

Specification

Fosroc Nitocote EPU, an impermeable epoxy-polyurethane protective coating. It shall possess excellent bond to the concrete substrate. The coating shall be resistant to under-ground conditions, alkalis, salt solutions and acidic solutions.

Technical support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

Properties

Specific gravity (ASTM D1495)	: ~1.50—1.52g/cm ³ at 24°C	
Pot life (ASTM D2471)	: ~2 hours	@ 24°C
Tack free time (ASTM D1640)	: 6 hours 3 hours 1-2 hours	@ 23°C @ 35°C @ 45°C
Min. Over-coating time (ASTM D1640)	: 8 hours 4 hours 2 hours	@ 23°C @ 35°C @ 45°C
Full cure (ASTM D1640)	: 7 hours 4 hours	@ 23°C @ 35°C
Adhesion Strength* (ASTM D4541)	: 1.5—2.5 N/mm ²	
Water Absorption (ASTM C570)	: <0.02%	
Tensile Strength (BS2782)	: >13 N/mm ²	
Elongation at break (BS2782)	: ~ 21%	

* Depending on the type of concrete substrate

** Depending on atmosphere and thickness.

Chemical resistance

Tests were carried out in accordance with ASTM D1308, at room temperature of 23°C and specimens were soaked in the solution for a period of 7 days.

Acids

Hydrochloric acid 10%	Resistant
Sulphuric acid 25%	Resistant
Nitric acid 10%	Resistant
Phosphoric acid 15%	Resistant

Aqueous solutions

Tap water	Resistant
Sea water	Resistant
Ground water	Resistant
Sewage	Resistant

Consult the local Fosroc office for specific recommendations to meet each operating condition.

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Instructions for use

Preparation

All surfaces to be treated with Fosroc Nitocote EPU must be clean and free from dust or loose material.

Concrete surfaces

All laitance must be removed by grit blasting, or other suitable removal methods. Following the preparation of a concrete surface, care should be taken to ensure that any surface irregularities are filled with Nitomortar FC or Nitomortar TC2000.

Priming

Concrete surfaces

Priming is not normally required provided the substrate is sound, untreated (no curing compound) and good quality non porous concrete. However, if concrete surface is porous, or w/c ratio is >0.5 it is recommended to use Nitoprime 31.

Mixing

The contents of the resin should be thoroughly stirred to disperse any possible settlement. The entire contents of both the hardener and resin cans should be poured into a suitable sized mixing vessel.

It is mandatory that the two components are mixed together mechanically using a slow speed electric drill fitted with a Fosroc Mixing Paddle (MR3) or Jiffy Mixing Paddle. Mixing should be carried out continuously for 3 to 5 minutes, until a uniform consistency is achieved.

Application

A minimum 2 coat application is generally recommended to ensure a full, unbroken coating is achieved.

Brush/Roller application

Once mixed, the material should be immediately applied, ensuring that a continuous coating is obtained. The first coat is applied to achieve a uniform coating with a wet film thickness not less than 200 microns, and should be allowed to dry for at least 6 hours at 28°C before the application of the second coat.

The second coat should be applied after 6 hours (at 28°C) from the application of the first coat. The second coat should be applied as above again achieving a wet film thickness not less than 200 microns.

Spray application

Where large areas are to be coated, it is advisable to consider spray application. Consult the local Fosroc office for further details and recommendations.

Cleaning

Tools and equipment should be cleaned with Fosroc Solvent 102* immediately after use.

Hot weather working practices

Whilst the performance properties of Fosroc Nitocote EPU at elevated temperatures are assured, application under such conditions can sometimes be difficult. It is therefore suggested that, for temperatures above 35°C, the following guidelines are adopted as a prudent working regime:

- i. Store unmixed materials in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight.
- ii. Keep mixing and placing equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.
- iii. Try to eliminate application in the middle of the day, and certainly avoid application in direct sunlight.
- iv. For hand application, ensure that there are sufficient operatives available to complete application within the pot life of the material.
- v. Have a ready supply of Fosroc Solvent 102 available for immediate cleaning of tools after use.

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Repairing and over-coating

Any applications of Fosroc Nitocote EPU which have be-come damaged can be readily over-coated.

The existing surface should be well abraded, using a stiff wire brush, or similar, to ensure that a good mechanical bond will be achieved between the two layers.

Any loose material should be removed.

Over-coating works can then proceed as for new work, always ensuring that the prepared substrate is free from any moisture.

Limitations

- Fosroc Nitocote EPU is formulated for application to clean sound substrates of concrete; and where it can be protected from contact with water for the first 24 hours after application as discolouration could occur
- For cold weather working (down to 5°C), it is recommended that materials are stored in a heated building and only removed immediately before use. Accelerated heating methods are not to be utilized under any circumstances
- Fosroc Nitocote EPU shall never be applied on concrete substrates with moisture content exceeding 5% and relative humidity more than 85%. For substrates with mois-ture content more than 5% we recommend to apply Fosroc moisture barrier Nitoflor DPM CEM.
- Change in colour might occur in the exposure of U.V.

Estimating

Supply

Fosroc Nitocote EPU	: 10 Liter Packs
Nitoprime 31	: 1, 5 and 15kg Packs
Fosroc Solvent 102:	: 4 & 25 liter Packs

Coverage

Fosroc Nitocote EPU	: 5.0 m2 /litre @ 200 microns WFT (per coat)
Nitoprime 31	: 1, 5 and 15kg Packs

Note: Coverage figures quoted are theoretical, and based upon application to a properly prepared substrate of nominal C30 concrete.
Since application conditions vary greatly due to substrate porosity, quality of surface preparation, application thickness and wastage factors, the on-site figures may vary from those shown above.

Storage

Fosroc Nitocote EPU supplied in 10 liter packs have a shelf life of 12 months, when stored in warehouse conditions below 25°C.

Precautions

Health and safety

Fosroc Nitocote EPU, Nitoprime 31 and Fosroc Solvent 102 should not come in contact with skin or eyes, nor should they be swallowed. Avoid inhalation of vapours and ensure ade-quate ventilation. Some people are sensitive to resins, hard-eners and solvents.

Wear suitable protective clothing, gloves and eye/face protection. Barrier creams such as Kerodex Antisolvent or Rozalex Antipaint provide additional skin protection. Should accidental skin contact occur, remove immediately with a resin removing cream such as Kerocleanse Standard Grade Skin Cleanser or Rozaklens Industrial Skin Cleanser, followed by washing with soap and water - do not use solvent. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

If swallowed seek medical attention immediately - do not induce vomiting.

For further information, please consult the Material Safety Data Sheet for Fosroc Nitocote EPU.

Fire

Fosroc Nitocote EPU, Nitoprime 31, Nitomortar FC and Nito-mortar TC2000 are non-flammable.

Fosroc Solvent 102 is flammable. Do not use near a naked flame.

Flash points

Nitoprime 31	: 55°C
Fosroc Solvent 102:	: 33°C

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Additional Information

Fosroc manufactures a wide range of complementary products which include:

- Waterproofing membranes & waterstops
- Joint sealants & filler boards
- Cementitious & epoxy grouts
- Specialized flooring materials

Fosroc additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete. Fosroc's 'Systematic Approach' to concrete repair features the following:

- Hand-placed repair mortars
- Spray grade repair mortars
- Fluid micro-concretes
- Chemically resistant epoxy mortars
- Anti-carbonation/anti-chloride protective coatings
- Chemical and abrasion resistant coatings

For further information on any of the above, please consult your local Fosroc office - as below.



Important note

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

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