Fosroc Nitocote EP410

constructive solutions

Highly chemical resistant two pack epoxy system

Uses

To provide protection to concrete and steel structures in aggressive chemical immersion conditions. The material is particularly suitable for applications in process plants and sewage works.

Advantages

- Excellent chemical resistance
- Excellent adhesion to concrete and steel
- Excellent abrasion resistance

Description

Nitocote EP410 is a high build, solvent free, two pack epoxy formulation. It is supplied in pre-measured quantities ready for site mixing and use. It is used in conjunction with solvent containing primers for concrete and steel.

Design criteria

Nitocote EP410 is designed to be applied in one coat to achieve a minimum total dry film thickness of 250 microns. When used in conjunction with glass fibre reinforcement to bridge fine cracks, it is applied in two coats to achieve a minimum total dry film thickness of 500 microns. Nitocote EP410 is designed to be used with Nitoprime 25 on concrete surfaces . It is green in colour.

Properties

Volume solids	:	100%
Pot life		
@ 20°C	:	3½ hours
@ 35°C	:	1½ - 2 hours

Chemical resistance:

Acids (m/v)		
Citric acid 30%	:	Excellent
Hydrochloric acid 18%	:	Excellent
Lactic acid 10%	:	Excellent
Acetic acid 5%	:	Excellent
Sulphuric acid 50%	:	Excellent
Alkalis (m/v)		
Sodium hydroxide 50%	:	Excellent

The local Fosroc office should be consulted in respect of other chemicals.

Specification

Chemical and abrasion resistant lining

The chemical and abrasion resistant lining shall be Nitocote EP410, a high build, two pack epoxy system specifically designed to provide a tough and impermeable film.

Instructions for use

Preparation

Concrete surfaces

All surfaces must be dry, smooth, sound and free from debris and loose material. 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 prepared to remove all foreign matter, open up blow holes and provide a suitable key for Nitocote EP410.

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

All surfaces should then be primed with Nitoprime 25. It is mixed in the proportions supplied and applied in a thin, continuous film. The primer should be touch dry but allowed to cure for no more than 24 hours at 20°C or no more than 16 hours at 35°C before the application of Nitocote EP410. The pot life of Nitoprime 25 is 80 minutes at 20°C, 30 minutes at 35°C.

Steel surfaces

All surfaces should be grit blasted to meet the requirements of BS 7079, Sa3. The lining work should be programmed so that newly cleaned steel is primed before the formation of rust or scale.

All surfaces should then be primed with Nitoprime 25. It is mixed in the proportions supplied and applied as a thin continuous film. The primer should be touch dry but allowed to cure for no more than 24 hours at 20°C or 16 hours at 35°C before the application of Nitocote EP410. The pot life of Nitoprime 25 is 80 minutes at 20°C, 30 minutes at 35°C.

Mixing

The contents of the base can should be stirred thoroughly to disperse any settlement. The entire contents of the hardener can should be stirred and added to the base container and mixed thoroughly until a uniform colour and consistency are 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 fitted with a Fosroc Mixing Paddle (MR3).

In cold weather, materials should be stored between 15°C to 20°C for 24 hours before use.

Application

Number of coats	:	1
Theoretical application rate per coat	:	0.25 litres per m^2
Theoretical wet film thickness per coat	:	250 microns
Overcoating times		
@ 5°C	:	16-72 hours
@20°C	:	16-36 hours
@35°C	:	6-18 hours
Fully cured		
@5°C	:	14 days
@20°C	:	7 days
@35°C	:	6 days

The minimum application temperature is 5°C.

All primed surfaces should be treated with one coat of Nitocote EP410. The mixed material should be applied by a nylon brush or roller to achieve a uniform coating with a wet film thickness not less than 250 microns. Any movement joints in the structure should be expressed through the coating and sealed with an appropriate sealant.

Use of glass fibre reinforcement

Nitocote EP410 may be used in conjunction with glass fibre cloth to increase thickness or, where necessary, bridge fine cracks in the substrate. The cloth should be laid directly on the first coat whilst wet and should be pressed in and smoothed out with a stiff nylon brush or split washer roller. A second coat should then be applied, allowing no more than 24 hours at 20°C and no more than 18 hours at 35°C between coats, and again achieving a wet film thickness not less than 250 microns.

Suitable cloth is open weave 110 g/m^2 glass cloth.

Cleaning

Nitoprime 25 and Nitocote EP410 should be removed from tools and equipment with Fosroc Solvent 102 immediately after use. Cured material can only be removed mechanically.

Limitations

- Nitoprime 25 and Nitocote EP410 are formulated for application to clean, sound concrete and steel. They 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.
- In conditions of high relative humidity i.e. 85-90% good ventilation conditions are essential. Substrate temperature should be at least 3ºC above dew point.
- Nitocote EP410 is not colour stable when exposed to direct sunlight, nor when in contact with some chemicals.

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.

Estimating

Supply

Nitoprime 25	:	1 and 4 litre packs
Nitocote EP410	:	4 litre packs
Fosroc Solvent 102	:	5 litre cans

Coverage

Nitoprime 25	:	4.0 - 5.0 m^2/litre
Nitocote EP410	:	4.0 m^2/ litre @ 250 microns wft

The coverage figures are theoretical – due to wastage factors and the variety and nature of possible substrates, practical coverage figures may be substantially reduced.

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. If stored at high temperatures, the shelf life will be reduced.

Precautions

Health and safety

Nitocote EP410, Nitoprime 25 and Fosroc Solvent 102 should not come in contact with skin or eyes, nor should they be swallowed. Avoid inhalation of vapours and ensure adequate ventilation.

Some people are sensitive to resins, hardeners 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.

Nitocote EP410 contains 4, 4' – Diaminodiphenylmethane. May cause cancer. Danger of serious damage to health by prolonged exposure in contact with skin. Avoid contact with skin and eyes, ingestion and inhalation of vapour. Ensure adequate ventilation. If working in confined areas, then suitable respiratory, protective equipment must be worn. Wear suitable protective clothing, gloves and eye/face protection.

Fire

Nitocote EP410 is non-flammable.

Nitoprime 25 and Fosroc Solvent 102 are 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 points

Nitoprime 25	**:**	55°C
Fosroc Solvent 102	**:**	33°C

For further information, consult the Product Material Safety Data Sheet.

Fosroc Nitocote EP410

Additional Information

Fosroc manufactures a wide range of complementary products which include :

- waterproofing membranes & waterstops
- joint sealants & filler boards
- cementitious & epoxy grouts
- specialised 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.

*** Denotes the trademark of Fosroc International Limited**

† **See separate data sheet**

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. **All Fosroc datasheets are updated on a regular basis. It is the user's responsibility to obtain the latest version.**

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