



constructive solutions

Nitocote® AP35

Latex acrylic polymer based cementitious coating

Uses

Provides passivating protection matrix to reinforcing steel

Advantages

- **Anticorrosive** - protects from future corrosion
- **High adhesion** - excellent bonding to all types of steel substrate
- **Cement based** - compatible with concrete
- **User friendly** - can be easily applied by brush

Description

Nitocote AP35, a single component latex acrylic polymer based emulsion is used for protecting steel reinforcement from corrosion.

It only needs to be mixed with cement at site to produce an easily brushable coating.

Technical support

Fosroc offers a technical support service to specifiers, end users and contractors, as well as on-site technical assistance in locations all over the country.

Properties

Appearance	: Milky white liquid
Solid content	: Exceeds 35%
pH	: : 8 -9
Specific gravity	: 1.04 @ 27°C
Application temperature	: Not less than 10°C
Adhesion to steel	: Excellent
Bond strength with cement	: Excellent
Toxicity	: Non-toxic
Mix proportions	: 1 part Nitocote AP35 acrylic polymer : 1.25 part cement

Application instructions

Surface Preparation

Any corroded steel in the repair area and all loose scale and corrosion deposits should be fully exposed. Steel should be cleaned to a bright condition paying particular attention to the back of exposed steel bars. Grit-blasting is recommended for this process.

Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water immediately after grit-blasting to remove corrosion products from pits and imperfections within its surface.

Application

The application of Nitocote AP35 acrylic primer must take place as soon as possible to a dry steel surface after completion of the preparation work but always within 3 hours.

One full and unbroken coat of Nitocote AP35 acrylic primer shall be applied by suitable brush making sure the surfaces of the steel are properly coated. A small brush is generally suitable for this purpose. It shall be allowed to dry fully before continuing. If in doubt of having achieved an unbroken coating, a second application should be made as soon as the first coat is fully dry (generally between 45 minutes and one hour)

The application of concrete repair materials should proceed as soon as the Nitocote AP35 acrylic primer is fully dry (generally 45 mins. to 1 hour).

Minimum application temperature for Nitocote AP35 acrylic primer is 10°C.

Equipment cleaning

Immediately after use, all tools shall be washed with clean water.

Estimating

Packaging

Nitocote AP35 acrylic primer is supplied in 1, 5 and 20 litre plastic containers.

Coverage

Approximately 8 - 10 m²/ litre depending on substrate.

Nitocote® AP35

Storage

Shelf life

Nitocote AP35 acrylic primer has a shelf life of 6 months at 30°C. Nitocote AP35 acrylic primer should be protected from frost.

Precautions

Health & Safety instructions

Nitocote AP35 acrylic primer is non toxic. However it should never be ingested and if it comes into contact with eyes, it shall be washed immediately with plenty of water and medical advice shall be sought.

Nitocote AP35 acrylic primer is slightly alkaline. Skin contact should be avoided. Gloves and protective clothing should be worn during handling/application of the product.

Fire

Nitocote AP35 acrylic primer is non flammable.

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INDIA/0764/B



constructive solutions

Nitocote® EN901

(Formerly known as Nitocote EP901)

High chemical resistant protective lining

Uses

Nitocote EN901 is an Epoxy Novolac lining designed to provide protection to concrete and steel structures in aggressive chemical conditions. The material is particularly suitable in wastewater treatment plants, desalination plants, food processing plants, pump and paper mills, electric power plants, chemical manufacturing plants, fertiliser and insecticide plants and petroleum refineries.

Nitocote EN901 may be used with or without Fosroc Anti-slip grains as a heavy-duty floor coating in applications such as chemical processing and drum storage areas, loading docks and ramps. It may also be used in conjunction with glass fibre cloth to increase the thickness of the system or to reinforce structures subjected to aggressive chemicals.

Advantages

- 100% solids, no solvents
- Excellent chemical resistance in pH ranging from 1-14 at 25°C
- Excellent adhesion to properly prepared concrete, mild steel, and other substrates
- Excellent abrasion resistance

Description

Nitocote EN901 is a solvent free, highly crosslinked, high build epoxy-novolac-based coating. Nitocote EN901 is a two-part material and can be applied by brush, roller or airless spray. Nitocote EN901 is grey in colour. It is formulated to be applied in one or two coats to achieve a minimum total-dry-film thickness of 500 microns. Higher thickness can be specified.

Specification

Chemical and abrasion resistant lining

The chemical and abrasion resistant coating shall be Nitocote EN901, a high build, two-pack epoxy-novolac system specially designed to provide a tough and impermeable high chemical resistant film.

Properties

Solid content	: 100%
Finish	: Gloss
Colour	: Grey
Specific gravity	: 1.35
Pot life	: 45 min. @ 23°C 20 min. @ 35°C
Tack-free time	: 8-10 hours @ 23°C 4-6 hours @ 35°C
Overcoating time	: <16 hours @ 23°C <10 hours @ 35°C
Full cure	: 7 days @ 23°C 5 days @ 35°C
Tensile strength	: 30 N/mm ²
Elongation	: Approx. 3%
Flexural strength	: 45 N/mm ²
Compressive strength	: 95 N/mm ²
Hardness	: 85+5 Shore D
Abrasion resistance	: 0.10 mg/cycle
(1 kg, H-22 Wheels)	
Service temperature	: <60°C

Chemical resistance

The fully cured coating is resistant to the splash/spillage of the following chemicals

Acetic Acid 25%	Hydrochloric acid 35%
Ammonium Hydroxide *	Hydrofluoric acid 25%
Benzene	Jet fuel
Benzoyl chloride	Isopropanol
Benzyl alcohol	Ethylene glycol monoethyl ether
Bleach (Sodium hypochlorite)	Kerosene
Boric Acid *	Lactic acid 20%
Brake Fluid	Methyl isobutyl ketone
Brine 10%	Mineral spirit
Car oil	Nicotinic acid *
Carbon tetrachloride	Nitric acid 30%
Castor Oil	Phenol 50% in IPA
Deionised water	Phosphoric acid 85%
Diesel fuel	Potassium hydroxide *
Diethanolamine 88%	Propylene glycol
Ethylene glycol	Sea water
Hydrogen peroxide 20% sol	
Skydrol	Fatty acids
Sodium hydroxide *	Xylene
Formaldehyde 37%	Sulphuric acid 98% *
Gasoline	Sulfanalic acid 1%
Tartaric acid 50%	Hexamine 25%
Toulene	Hexane
Vegetable oils	Hydraoine 35%

* Any concentration in water

Nitocote® EN901

The local Fosroc office should be consulted for resistance to specific chemicals and conditions or when long term exposure is required.

Instructions for use

Preparation of concrete surfaces

All surfaces, which are to receive the lining, must be at least 28 days old and have a moisture content of less than 5%. These surfaces shall be dry, sound and free from debris and loose material. The substrate must be free from contamination such as oil, grease, wax, dirt or any other form of foreign matter which might affect adhesion.

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

Preparation of steel surfaces

All surfaces should be grit blasted to meet the requirements of BS4232, 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.

Priming

Nitocote EN901 is designed to be used without primer. However, if the condition of the concrete substrate requires priming, Nitoprime 25* can be used.

Mixing

It is imperative that the resin be thoroughly mixed with the hardener in the exact ratios to ensure optimum performance. Therefore, the entire contents of the hardener can should be added to the base container and mixed until a uniform colour and 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 slow speed electric drill.

Application

Once mixed, Nitocote EN901 should be immediately applied to the prepared surface ensuring a continuous coating of uniform thickness is obtained.

Stiff nylon brush or short nap roller is recommended for such application. Faster rate of application is possible using airless spray equipment.

Re-coating

To re-coat, it is imperative that the second coat be applied within the specified over-coating time.

Use of glass fibre reinforcement

Nitocote EN901 may be used in conjunction with glass fibre cloth to increase the thickness of the system 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 split washer roller. A second coat should then be applied within the specified over-coating time.

Use of Fosroc Anti-slip grains

Nitocote EN901 can be used in conjunction with Fosroc Antislip Grains** to provide a heavy-duty slip-resistant flooring system.

The first coat will be applied as described above with a minimum film thickness of 200 microns. The base coat should now be dressed with the chosen Fosroc Antislip Grains.

The recommended procedure is to completely blind the base coat i.e. apply excess dressing aggregate to completely obliterate the base coat.

When the base coat has reached initial cure, the excess Antislip Grains should be vacuum-cleaned from the surface.

The top coat can then be applied. Care should be taken to ensure that a continuous film is achieved and the surface is completely sealed.

Cleaning

Nitocote EN901 should be removed from tools and equipment with Nitoflor Sol* immediately after use. Cured material can only be removed mechanically.



Nitocote® EN901

Limitations

- Substrate, ambient and product temperature must remain above 15°C during application and curing. Minimum material/container temperature for spray application is 20°C. Avoid moisture contamination.
- Nitoflor EN901 should not be applied on to surfaces known to, or likely to suffer from, rising dampness, potential osmosis problems or have a relative humidity greater than 75% as measured in accordance with BS 8203 Appendix A, or by a Thermo Hygrometer
- 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%.
- Nitocote EN901 may not be colour stable when in contact with some chemicals or direct sunlight. The colour change will not affect the performance of the protective system either on concrete or steel.

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

Nitocote EN901	:	4 litre packs
Nitoprime 25	:	1 & 4 litre packs
Nitoflor Sol	:	5 and 20 litre cans

Coverage

Nitocote EN901	:	0.5 litre /m² @ 500 microns
Nitoprime 25	:	5.5 - 6.5 m² per litre

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

Storage

Shelf Life

When stored in dry air conditioned stores at temperatures between 15-30°C, in the original, unopened containers Nitocote EN901 will have a shelf life of 12 months.

If stored at high temperatures the shelf life will be reduced. Air conditioned storage at high ambient temperatures is recommended.

Precautions

Health and safety

Nitocote EN901 and Nitoflor Sol should not come in contact with skin and eyes, or be swallowed. Ensure adequate ventilation and avoid inhalation of vapour. If working in confined areas, then suitable respiratory equipment must be worn. Some people are sensitive to resins and solvents. Wear suitable protective clothing, gloves and eye/face protection. Barrier creams provide additional skin protection. Should accidental skin contact occur, remove immediately with a resin-removing cream, followed by 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

Nitoflor Sol is 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

Nitoflor Sol	:	33°C
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For further information, refer to the Product Material Safety Data Sheet.



Nitocote® EN901

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.

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INDIA/0771/B



constructive solutions

Nitocote® EP140

Epoxy resin coating for steel and concrete

Uses

Nitocote EP140 is used as a hygienic and chemical resistant coating for steel tanks, concrete walls, concrete and metal columns, sluices and ducts.

Advantages

- **Excellent adhesion** - Compatible with all substrates. Can be applied directly on to mild steel and concrete
- **Hygienic & Aesthetic** – Forms a smooth, glossy and easy to clean surface on curing
- **Chemical resistant** – Proven against a wide range of industrial chemicals

Description

Nitocote EP140 coating is based on solvented epoxy resins specially formulated to provide a durable coating suitable for application to both vertical and horizontal surfaces. It cures to form a smooth hygienic film with good resistance to a wide range of mineral and organic acids, fats, alkalis and oils.

Technical support

Fosroc provides a technical advisory service supported by a team of specialists in the field.

Properties

	@ 20°C	@ 35°C
Pot life	4 hrs	1 ½ hrs
Time between coats	4- 6 hrs	3 - 5 hrs
Initial hardness	24 hrs	18 hrs
Full cure	7 days	7 days

Below 20°C the above times will be increased.

Volume solids (mixed material) : 45%

Colours : Silvery grey, sage green and clear

Chemical resistance

Nitocote EP140 has been tested for resistance to a comprehensive range of chemicals commonly encountered in individual locations. Tests were performed by constant immersion for 3 months at 20°C and 35°C in the selected chemical solution. Samples were visually inspected and tested in accordance with ASTM D2240 for Shore D hardness.

Acids

Hydrochloric 20%	R
Nitric 15%	R
Sulphuric 50%	R
Phosphoric 50%	R
Acetic 10%	R
Lactic 10%	R
Citric 10%	R

Alkali

Sodium Hydroxide 50%	R
Ammonia (0.880) 10%	R

Solvents

Petrol, Oil, Kerosene	R
Acetone	S
Butanol	R
Skydrol	S

Other solutions

Bleach	R
Saturated sugar	R
Urea	R
Sat. NaCl solution	R

Key: R - Resistant
S - Indicates slight attack under continuous immersion. 'At tack' refers to any etching or swelling observed but ignores discolouration.

Where chemicals at temperatures higher than ambient are involved, Fosroc shall be consulted.

Nitocote EP140 has been formulated especially to provide the highest chemical resistance. However, at elevated temperatures or where mixture of chemicals are involved then the effects may be different than those found in laboratory tests as described above. Fosroc local office shall be contacted for any clarifications.

Nitocote® EP140

Specification clauses

Protective surface coating

The protective surface coating shall be Nitocote EP140, a chemical resistant prepacked, two part solvented epoxy coating with a minimum of 45% solids. The total dry film thickness shall not be less than 90 microns and shall be resistant to a range of industrial chemicals. The cured film shall be hygienic and provide smooth surface. It shall be applied on to the dry concrete surface.

Application instructions

Where relevant, the application and preparation should conform to the British Standard Code practice CP 3003 : Part 5, 1966. The advice given below is a summary.

Preparation

Surface to be coated must be structurally sound, dry and free from loose material. All surface contamination must be removed. Grease and oil should be grit blasted or water jetted. Deeper penetration must be removed by mechanical means. Any laitance must be removed from concrete surface by etching with Reebaklens, then washed off and dried. New concrete should be allowed to cure for at least 28 days prior to priming. Steel surfaces should be shot blasted to a profile of 125 microns (0.005 inches).

It is essential that Nitocote EP140 is applied to sound clean, dry substrates in order to achieve maximum adhesion between the coating and substrate.

Priming

Steel surfaces should be primed with Nitozinc Primer, a two part zinc rich primer prior to applying Nitocote EP140.

Mixing

Before mixing, the contents of each can should be thoroughly stirred to disperse any settlement which might have taken place during storage.

The entire contents of the smaller hardener can should be poured into the base container and the materials thoroughly mixed for at least 3 minutes. Mechanical mixing using a slow speed (300 - 500 rpm) heavy duty or air driven drill fitted with a mixing paddle is recommended.

Coating

The mixed Nitocote EP 140 shall be applied to the dry, prepared substrate making sure a continuous film is achieved using a standard paint brush, good quality lambswool roller or spray equipment. The optimum dry film thickness of 100 micron is achieved in two coats.

Cleaning

Tools and equipment should be cleaned with Nitoflor Sol immediately after use.

Temperature limitations

Minimum application temperature : 15°C. At temperatures below 15°C and over 40°C, please contact your local Fosroc technical representative.

Estimating

Packaging

Nitocote EP140	4.5 Litre
Nitozinc Primer	1 & 5 Litre
Nitoflor Sol	5 & 20 Litre
Reebaklens	5 & 20 Litre

Coverage

Approximately 10 m²/Litre @ 100 microns wft. However, practical coverage depends on the nature and porosity of the substrate and application conditions.



Nitocote® EP140

Storage

Shelf life

12 months if stored in unopened container below 35°C.

Precautions

Health & Safety instructions

Some people are sensitive to epoxy resin systems and may develop dermatitis on skin contact. Gloves and barrier creams should be used when handling primers and Nitocote EP140. If contact with the skin occurs, wash with soap and plenty of water. Do not use solvent. Direct contact with the eyes will cause irritation and may cause serious damage if left untreated. Any eye contamination should be washed thoroughly with plenty of water and immediate medical treatment sought. The use of goggles when mixing is recommended. Smoking to be avoided.

Fire

Nitocote EP140 and Nitoflor Sol are flammable. Ensure adequate ventilation when using primers and solvents and do not use near a naked flame.

Flash point

Nitoflor Sol	33°C
Nitocote EP140	25°C

Additional information

Fosroc manufactures a wide range of products specifically designed for the repair and refurbishment of damaged reinforced concrete. This includes repair mortars, fluid micro-concretes, chemical resistant epoxy mortars in addition to comprehensive package of protective coatings. In addition, a wide range of complementary products are available. This includes joint sealants, waterproofing membranes, grouts and anchors and specialised flooring materials.

Separate datahsheets are available on these products.



Nitocote® EP140



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INDIA/0701/E



constructive solutions

Nitocote® EP405

Solvent free epoxy resin coating for potable water retaining structures

Uses

Nitocote EP405 is used for lining and waterproofing potable water retaining structures and surfaces subject to contact with food stuffs. The cured film is resistant to corrosion, chemical attack and abrasion and is suitable for application to reservoirs, tanks, silos, water treatment works, breweries, dairies, meat and food processing plants. The cured film is non-toxic and meets the requirements of IS : 9833 - 1981.

Advantages

- **Food grade & Hygienic** – CFTRI approved for suitability to potable water and food stuff storage.
- **Compatible with all substrates** – Can be applied directly on to mild steel and concrete
- **Aesthetic** – Forms a smooth, glossy and to easy clean surface on curing
- **Abrasion resistant** – Exceptional resistance to abrasion and to a wide range of chemicals
- **Corrosion resistant** – Does not contain any metallic particles
- **Chemical resistant** – Proven against a wide range of industrial chemicals
- **Solvent free & Non – toxic** - No odour during application and can be used in confined areas.

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 colours.

Technical support

Fosroc provides a technical advisory service supported by a team of specialists in the field.

Design criteria

Nitocote EP405 is designed to be applied in two coats to achieve a minimum total dry film thickness of 200 microns. To achieve the correct protective properties, Nitocote EP405 must be applied on to the substrate at the coverage rates recommended.

Properties

Volume of solids	100%	
Viscosity	Pourable, spreadable liquid	
Pot life	@ 20°C	@ 30°C
	60-80 min.	45 min.

The local Fosroc office should be consulted for resistance data 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 with the requirements of IS:9833 - 1981.

Application instructions

Preparation

Concrete surfaces

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

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

Steel surfaces

All surfaces should be grit blasted to obtain bright metal surface. 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 poured into 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,

Nitocote® EP405

using a mixer or a heavy duty, slow speed electric drill fitted with a paddle.

Application

Number of coats : 2

Theoretical application rate per coat : 0.1 litre per m²

Theoretical wet film thickness : 100 microns

Overcoating time (hours) : @ 20°C @30°C
24 18

Fully cured : 7 days @ 30°C

Minimum application temperature : 10°C

Any 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 100 microns. The first coat should be allowed to become tack free before applying the second coat.

The second coat should be applied exactly as above, again achieving a wet film thickness not less than 100 microns.

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

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 Nitoflor Sol, solvent 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 10°C and falling, nor when the prevailing relative humidity exceeds 90%.

Although Nitocote EP405 may be applied to damp concrete, there must be no standing or running water.

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 affect the performance of the coating.

Estimating

Packaging

Nitocote EP405 4 litre pack

Nitoflor Sol 5 and 20 litre cans

Coverage

Nitocote EP405 covers 10.0 m² per litre per coat at 100 micron thickness.

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

Storage

Shelf life

12 months if kept in dry store between 5°C and 30°C in the original, unopened containers.

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



Nitocote® EP405

Precautions

Health and Safety instructions

Nitocote EP405 and Nitoflor Sol solvent should not come into contact with skin and eyes or be swallowed. When using Nitoflor Sol, adequate ventilation shall be ensured and inhalation of vapours shall be avoided. Some people are sensitive to resins, hardeners and solvents. Hence suitable protective clothing, gloves and eye protection shall be worn. The use of barrier cream provides additional skin protection. In case of contact with the skin, it shall be rinsed with plenty of clean water, then cleansed with soap and water. Solvent should not be used. In case of contact with eyes, it shall be rinsed immediately with plenty of water and medical advice shall be sought immediately. If swallowed medical attention shall be sought immediately - Vomiting should not be induced.

Fire

Nitocote EP405 is non-flammable.

Nitoflor Sol is flammable. It should be kept away from sources of ignition. Smoking is prohibited during application / handling of the product. In the event of fire, it shall be extinguished with CO₂ or foam. Use of water jet is not recommended.

Flash points

Nitoflor Sol : 33°C

Additional information

Fosroc manufactures a wide range of products specifically designed for the repair and refurbishment of damaged reinforced concrete. This includes Renderoc 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.



Nitocote® EP405



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INDIA/0702/C



constructive solutions

Nitocote® EP410

Epoxy resin tank and surface lining material

Uses

A hygienic and chemical resistant coating for brick and concrete walls, concrete and metal tanks, sluices and ducts.

Advantages

- **Excellent adhesion** - Compatible with all substrates. Can be applied directly on to mild steel and concrete
- **Hygienic & Aesthetic** – Forms a smooth, glossy and easy to clean surface on curing
- **Abrasion resistant** – Exceptional resistance to abrasion and to a wide range of chemicals
- **Chemical resistant** – Proven against a wide range of industrial chemicals

Description

Nitocote EP410 high build surface protective coating is based on solvent free epoxy resins specially formulated to provide a thixotropic coating suitable for application to vertical surfaces. It cures to form a smooth hygienic film with good resistance to a wide range of mineral and organic acids, alkalis, fats and oils.

Colour : Green (Non-stable).

Technical support

The company provides a technical advisory service supported by a team of specialists in the field.

Properties

Pot life	: 30 mins at 27°C
Cure time	: Tack free after 6 hours @27°C
Initial hardness	: 24 hours at 27°C
Full cure	: 5 days at 27°C

Chemical resistance

The results with some common chemicals using Nitocote EP410 high build surface protective coating film totally immersed for 1 year at 30°C :

Ammonium hydroxide 30%	S
Causic soda 50%	R
Citric acid 50%	R
Detergents	R
Fatty acids (higher)	S
Hydrochloric acid 20%	R

Lactic acid 10%	R
Nitric acid 10%	R
Oil, Mineral acid	R
Petrol	R
Sodium Hypochlorite 10%	S
Sulphuric acid 20%	R
Water	R

Key :R : Resistant

S : Indicates slight attack under continuous immersion. 'Attack' refers to any etching or swelling observed but ignores discolouration.

Where chemicals at temperatures higher than ambient are involved, it may please be referred to Fosroc.

Preparation

Surface to be coated must be structurally sound, dry and free from loose material. All surface contamination must be removed. Grease and oil should be grit-blasted or water jetted. Deeper penetration must be removed by mechanical means. Any laitance must be removed from concrete surface by etching with Reebaklens (see separate data sheet) then washed off and dried. New concrete should be allowed to cure for at least 28 days prior to coating. Steel surfaces should be shot blasted to a profile of 125 microns.

Priming

Concrete : All concrete surfaces should be primed using Nitoprime 25, a two pack epoxy resin primer supplied in preweighed quantities ready for mixing. It is mixed in the proportions supplied and brushed in a thin continuous film over the concrete surface. Unlike Nitocote EP410 high build surface protective coating, the primer may be applied to a damp surface. The primer should be allowed to be cured for 4- 6 hours at 30°C before applying Nitocote EP410 high build surface protective coating. The usage life after mixing is 30 minutes at 27°C.

Mixing

The small can of hardener is completely emptied into the large can of resin and the components thoroughly mixed until a uniform colour is achieved.

It is recommended that mechanical mixing is employed by using a stirrer in a heavy duty slow speed electric drill fitted with a mixing paddle.

Nitocote® EP410

Coating

Nitocote EP410 high build surface protective coating is applied to the primed substrate by nylon brush and finally smoothed out using a steel trowel. A continuous coating of uniform thickness should be obtained. Normally 2 coats of Nitocote EP410 high build surface protective coating should be applied @ 250 microns/coat.

Cleaning

Tools and equipment should be cleaned immediately after use with Nitoflor Sol.

Estimating

Packaging and coverage

	Pack size	Coverage*
Nitocote EP410	4 litres	16m ² @ 250 microns thickness/coat
Nitoprime 25	1 & 4 litres	5.5 - 6.5 m ² /litre
Nitoflor Sol	5 & 20 litres	
Reebaklens	5 & 20 litres	

* The practical coverage may vary depending on the application thickness and surface porosity of the substrate.

Storage

Shelf life

12 months when stored under normal warehouse conditions in unopened containers.

Precautions

Health & Safety instructions

Some people are sensitive to epoxy resin systems and may develop dermatitis on skin contact. Gloves and barrier creams should be used when handling primers and Nitocote EP410.

If contact with the skin occurs, wash with soap and plenty of water. Do not use solvent. Direct contact with the eyes will cause irritation and may cause serious damage if left untreated. Any eye contamination should be washed thoroughly with plenty of water and immediate medical treatment sought. The use of goggles when mixing is recommended. Smoking to be avoided.

Fire

Nitocote EP410 and Nitoflor Sol are flammable. Ensure adequate ventilation when using primers and solvents and do not use near a naked flame.

Flash point

Nitoflor Sol 33°C

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INDIA/0739/B





constructive solutions

Nitocote® EPW100

Water dispersed epoxy coating and sealer

Uses

Nitocote EPW100 coating provides a pigmented sealing coat onto cementitious and concrete surfaces providing dustproof, easily cleanable and resistant to penetration of oils and liquids. The cured film is resistant to corrosion, chemicals and abrasion. Suitable for application to reservoirs, tanks, ducts, silos, water treatment works, breweries, dairies, kitchens and food processing plants. The cured film forms a waterproof barrier and is non-toxic.

Also recommended as internal waterproof coating.

Advantages

- **Improves** the resistance of concrete to many industrial chemicals.
- **Hygienic** - easily cleaned due to impervious finish.
- **Odour free** - environmental friendly.
- **Water based** - all tools and equipment can be cleaned with water.
- **Economic** and easy to apply.
- **Attractive** - available in a range of colours.
- **Antifungal** - resistant to fungal attack.

Description

Nitocote EPW100 is a three component prepacked, water dispersed epoxy resin system supplied ready for onsite mixing and use.

The cured film forms a hard, flexible, matt seal to concrete and other substrates.

Technical support

Fosroc offers technical support service to specifiers, end users and contractors, as well as onsite technical assistance in locations all over the country.

Properties

	@20°C	@30°C
Usable life	2 hrs	1 hr
Time between coats	Within 24 hrs	Within 16 hrs
Initial hardness	30 hrs	24 hrs
Full cure	21 days	21 days

Note : After the usable life has expired, the material although not hardened, increases in viscosity and the characteristics of the product change. Excess material should be discarded after this point.

Chemical resistance

Samples of Nitocote EPW100 coating have been subjected to constant immersion at 30°C for 3 months in the following chemicals and have been found to be unaffected.

Dilute Sulphuric acid
Dilute Citric acid
Dilute Sodium Hydroxide
Ammonia 10% solution
Oil and grease
Petrol
Tap water

Good housekeeping is essential in areas where chemical spillage is likely to occur. It is especially important that such spillage should not be allowed to dry as higher concentrations of chemicals are involved.

Where chemicals at higher temperatures are involved, Fosroc shall be contacted.

Application instructions

Preparation

Surfaces to be treated should be clean and free from all contamination. Oil or grease should be removed by suitable means, followed by washing off with clean water. Excess laitence should be removed by etching with Reebaklens followed by washing off with clean water.

Mixing

The paste component of Nitocote EPW100 coating system shall be added to the hardener component and then stirred for a period of 3 minutes followed by addition of base. The resultant mix is further mixed for a period of 2 - 3 minutes. The use of a slow speed drill fitted with a paddle is recommended.

Coating

The mixed Nitocote EPW100 coating shall be applied to the prepared and cleaned surface, using a brush or lambswool roller. ensuring that the area is completely coated and that 'ponding' of the material does not occur as water may be trapped and the material will not cure completely.

Nitocote® EPW100

The second coat may be applied as soon as the first coat has initially dried. The time will be dependant on the type of surface and ambient conditions but will be in the range of 24 hours at 30°C.

Temperature limitations

Minimum application temperature is 20°C.

Estimating

Packaging and coverage

Nitocote EPW100 is supplied in 4 litre packs.

The coverage of Nitocote EPW100 coating depends to a large extent on the substrate and site conditions. For calculation purpose 20 - 22m² /pack /per coat @ 180 microns WFT (100 microns DFT) can be taken as the coverage.

Storage

Nitocote EPW100 coating should be stored under normal warehouse conditions, and must be protected from frost.

Shelf life

6 months in unopened containers.

Precautions

Health & Safety instructions

Since some people are sensitive to epoxy resins, gloves, goggles and barrier creams should be used when handling these products. If contact with skin occurs, it must be removed, before it hardens, with resin removing creams followed by washing with soap and water. Solvent should not be used. The use of goggles is recommended but should accidental eye contamination occur, washing thoroughly with plenty of water and seeking immediate medical treatment is suggested.

Fire

Nitocote EPW100 coating is non-flammable.

Additional information

Fosroc manufactures a wide range of products specifically designed for the repair and refurbishment of damaged reinforced concrete. This includes repair mortars, fluid micro concretes, chemical resistant epoxy mortars in addition to comprehensive package of protective coatings. In addition, a wide range of complementary products are available. This includes admixtures, joint sealants, waterproofing membranes, grouts and anchors specialised flooring materials and bonding agents.

Separate data sheets are available on these products

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INDIA/0652/D





constructive solutions

Nitocote® ET140

Epoxy tar based coating for steel and concrete surfaces

Uses

Provides protection to concrete and metal structures against corrosion from aggressive environments. Suitable for tanks above ground or in totally submerged conditions such as pipelines. Particularly useful in sewage works, effluent plants and dock and harbour installations.

Advantages

- Excellent resistance to all types of water
- Easily applied by brush or spray
- Provides long term corrosion protection
- No priming necessary in most cases
- Chemical and abrasion resistant
- Economic and versatile product

Description

Nitocote ET140 coating is based on solvented coal tar epoxy resins specially formulated to provide a durable coating suitable for application to both vertical and horizontal surfaces.

Supplied as a two - component system comprising a special blend of pitch epoxy resins and amine hardeners.

Technical support

Fosroc provides technical advisory service on request, supported by a team of specialists in the field.

Properties

Nitocote ET140	20°C	35°C
Potlife	2 hrs	1 ½ hrs
Time between coats	4 hrs	2 hrs
Initial hardness	24 hrs	16 hrs
Full cure	7 days	5 days
Below 20°C these times will be increased.		
Specific gravity (mixed material) : 1.20		

Chemical resistance

Nitocote ET140 has been tested for resistance to a comprehensive range of various chemicals and types of water, commonly encountered in individual locations. Tests were performed by constant immersion for 3 months at 30°C in the selected chemical solution. The fully cured coat is resistant to the attack of :

Water	Sea water
Effluent water	Ground water
Sewage water	Distilled water
Atmosphere conditions	Exhaust and sewage gases
Salt solutions	Many organic solvents
Diluted mineral acids & alkalis	
Vegetable and mineral oils & fats	
Barnacles and organic growths	

However at elevated temperatures or where mixtures of chemicals are involved then the effects may be different than those found in laboratory tests described above. Fosroc local office shall be contacted for any clarifications.

Specification clauses

Protective surface coating

The protective coating shall be Nitocote ET140, a chemically resistant prepacked, two part solvented, coal tar epoxy coating with a minimum of 45% volume solids. The total dry film thickness shall not be less than 100 microns and shall be capable of resistant to a range of industrial chemicals and all types of water. The cured film shall be tough and abrasion resistant. It shall be applied on the dry concrete or steel surfaces.

Application instructions

Preparation

Surface to be coated must be structurally sound, dry and free from loose material. All surface contamination must be removed. Grease and oil should be grit blasted or water jetted. Deeper penetration must be removed by mechanical means. Any laitence must be removed from concrete surface by etching with Reebaklens then washed off and dried. New concrete should be allowed to cure for atleast 28 days prior to priming. Steel surfaces should be shot blasted to a profile of 125 microns.

Nitocote® ET140

It is essential that Nitocote ET140 is applied to sound clean, dry substrates in order to achieve maximum adhesion between the coating and substrate.

Mixing

Before mixing, the contents of each can should be thoroughly stirred to disperse any settlement which may have taken place during storage.

The entire contents of the smaller hardener can should be poured into the base container and the materials thoroughly mixed for atleast 3 minutes. Mechanical mixing using a slow speed (300 - 500 rpm) flame proof or air driven drill fitted with a mixing paddle is recommended.

Coating

The mixed Nitocote ET140 shall be applied to the dry, prepared substrate making sure a continuous film is achieved using a standard paint brush, good quality lambswool roller or spray equipment. The optimum dry film thickness of 100 microns is achieved in two coats.

Cleaning

Tools and equipment should be cleaned with Nitoflor Sol immediately after use.

Temperature limitations

Minimum application temperature : 15°C

At temperatures below 15°C and above 40°C, please contact your local Fosroc representative.

Estimating

Packaging

Nitocote ET140	4 Litres
Nitoflor Sol	1 & 5 Litres
Reebaklens	5 & 20 Litres

Coverage

Nitocote ET140, 4 Litre pack covers approx. 35 m² per coat at a WFT of 100 microns. However, practical coverage depends on the nature and porosity of the substrate and application conditions.

Storage

Shelf Life

6 months shelf life if stored in unopened containers below 35 deg.C.

Precautions

Health and Safety

Some people are sensitive to epoxy resin and coal tar products and may develop dermatitis on skin contact. Gloves and barrier creams should be used when handling cleaning SOLs and Nitocote ET140. If contact with the skin occurs, wash with soap and copious amounts of water. Solvent shall not be used. Direct contact with the eyes will cause irritation and may cause serious damage if left untreated. Any eye contamination should be washed thoroughly with plenty of water and immediate medical treatment sought. The use of goggles when mixing is recommended. Smoking to be avoided.



Nitocote® ET140

Fire

Nitocote ET140 and Nitoflor Sol are flammable. Adequate ventilation to be ensured when using primers and solvents and do not use near a naked flame.

Flash Point

Nitoflor Sol	33°C
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Nitocote ET140	25°C
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Additional information

Fosroc manufactures a wide range of products specifically designed for repair and refurbishment of damaged reinforced concrete. This includes hand-placed and spray grade repair 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, water proofing membranes, grouting, anchoring and specialised flooring materials.

Fosroc have also 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 these destructive mechanisms. Further information is available from the publication : "Concrete Repair and Protection - The Systematic Approach'.

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



Nitocote® ET140

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INDIA/0713/C



constructive solutions

Nitocote ET402*

Coal tar extended epoxy resin coating

Uses

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

- Seawater tanks, channels and intakes.
- Manhole linings.
- Sewage works and effluent plants.
- Chemical processing.
- Foundation waterproofing.
- Jetties, piers and docks.

Advantages

- **Low cost service life** - excellent chemical and abrasion resistance, does not support bacterial growth.
- **Cost saving** - primerless system.
- **Added value system** - acts as an impermeable waterproof coating.
- **Versatile usage** - can be applied to green concrete by brush, roller or spray.

Description

Nitocote ET402 is based on solvent-free epoxy resins, modified with coal tar. It is supplied as a two pack material in pre-weighed quantities ready for on-site mixing and use.

Nitocote ET402 is applied as a two coat application. It is generally applied at a wet film thickness of 200 micron per coat, but can be applied at greater thicknesses to suit exposure conditions.

Specification

The corrosion resistant coating shall be Nitocote ET402, a coal tar extended, 100% solids, epoxy resin coating. The coating shall possess a high-build capability, to facilitate varying application thicknesses. It shall further possess excellent bond and chemical resistance properties and shall comply to BS 7542 & ASTM C309 curing efficiency standards.

Properties

Colour	: Black/Brown
Solids by weight @ 25°C	: 100%
Specific gravity	: 1.54 at 20°C
Pot life	:
at 25°C	75 minutes
at 40°C	40 minutes
Tack free time	: 2 to 3 hours at 35°C
Overcoating time	: 6 hours at 35°C 3 hours at 45°C
Full cure	: 4 days at 35°C
Curing Efficiency (BS 7542)	: 93%
Water Absorption (ASTM D570)	: <0.01%
Impact Resistance (BS 3900 Pt E3)	: Passed
Bond Strength (BS 1881 Pt 207)	: Min 1N/mm ²
Water Permeability (Long Term)	: Nil @ 2 bar pressure over 3 months
Salt Spray Test (BS 1881 Pt. 124 :1988)	: Nil @ 200 microns tested over 1000 hours

Chemical resistance :

Tests were carried out in accordance with ASTM D543. Test was conducted at room temperature of 23°C and specimens were soaked in the solution for a period of 7 days.

Acids (m/v)

Hydrochloric acid 10%	: Excellent
Sulphuric acid 10%	: Very good
Nitric acid 10%	: Very good
Phosphoric acid 10%	: Very good

Alkalis (m/v)

Ammonia 15%	: Excellent
Sodium Hydroxide 25%	: Good

Solvents & organics

Oils, vegetable and minerals:	Excellent
Ferric Chloride 15%	: Very good

Aqueous solutions

Water	: Excellent
Sea water	: Excellent
Raw sewage	: Very good

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

Nitocote ET402*

Instructions for use

Preparation

All surfaces to be treated with Nitocote ET402 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. The general standard of surface preparation should be in accordance with ACI 503R-89, Chapter 5, Paragraph 5.4.

Following the preparation of a concrete surface, care should be taken to ensure that any surface irregularities are filled with Nitomortar FC** or Nitomortar FC(B)*.

Metal surfaces

Any metal surfaces should be grit blasted to a bright finish, meeting the requirements of Swedish Standard SA 2½ or equal.

Priming

Concrete surfaces

Priming is not required on properly prepared concrete surfaces - see Preparation section.

Metal surfaces

All metal surfaces should be coated immediately after preparation. If this is not possible and to eliminate formation of rust, prime the metal surfaces using Nitoprime 25*.

Mixing

The contents of the resin can 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 recommended that the two components are mixed together mechanically using a slow speed electric drill fitted with a Fosroc Mixing Paddle (MR3). Mixing should be carried out continuously for 3 to 5 minutes, until a uniform consistency is achieved.

Although Nitocote ET402 is a non-solvented product, it is still recommended that mixing should take place in an open, well ventilated area.

Application

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

Brush 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 35°C before the application of the second coat.

The second coat should be applied between 6 hours and 4 days (at 35°C) after the application of the first coat, at 45°C this will be reduced to 3 hours. 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 Nitocote ET402 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.



Nitocote ET402*

Repairing and overcoating

Any applications of Nitocote ET402 which have become damaged can be readily overcoated.

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

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

Limitations

- Nitocote ET402 should not be applied over other existing coatings, but can be applied on top of itself (see above).
- 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 utilised under **any** circumstances.
- In contact with moisture/high humidity during cure, the colour of the coatings will change to brown/red.

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

Nitocote ET402	:	10 litre packs
Nitoprime 25	:	1 and 4 litre packs
Fosroc Solvent 102	:	5 litre packs

Coverage

Nitocote ET402	:	5.0 m ² /litre @ 200 microns wft (per coat)
Nitoprime 25	:	5.0 m ² /litre

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

Nitocote ET402 has a shelf life of 12 months, when stored in warehouse conditions below 35°C.

Precautions

Health and safety

Nitocote ET402, 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.

For further information, please consult the Material Safety Data Sheet for Nitocote ET402.

Fire

Nitocote ET402 and Nitomortar FC are non-flammable.

Nitoprime 25 and Fosroc Solvent 102 are flammable. Do not use near a naked flame.

Flash points

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



Nitocote ET402*

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

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UAE/0183/03/J



constructive solutions

Nitocote® ET550

Epoxy tar based high performance resin coating

Uses

Nitocote ET550 provides protection to concrete and metal structures against corrosion from aggressive environments. Suitable for tanks above ground or in totally submerged conditions such as pipelinings. Particularly useful in sewage works, effluent plants and dock and harbour installations.

Advantages

- High film build in single application
- Easily applied by brush or spray
- Provides long term corrosion protection
- No priming necessary in most cases
- Chemical and abrasion resistant
- Economic and versatile product

Description

Thixotropic pitch extended epoxy amine adduct formulation containing reinforcing inert fillers and special blend of solvents.

The product is supplied as a two-component system comprising a special blend of epoxy resins and a separate low viscosity amine hardener.

Technical support

Fosroc offers technical support service to specifiers, end-users and contractors, as well as on-site technical assistance in locations all over the country.

Design Criteria

Nitocote ET550 is designed to be applied in two coats to achieve a minimum total dry film thickness of 350 microns. To achieve the correct protective properties, Nitocote ET550 must be applied at the coverage rates given overleaf

Properties

Specific gravity	1.38 - 1.40
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Volume Solids	Mixed 66% (approx)
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Recommended thickness

Dry film thickness (DFT)	350 microns
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Wet film thickness(WFT)	530 microns
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Note : In very hot or very cold conditions lower application thickness is advised to avoid solvent entrapment. Recommended dft can be obtained in one coat by airless spray. Other methods will give lower film build.

Number of coats	1 - 3 depending on application conditions and method.
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Pot life	at 20°C	35°C
	4 hours	1 hour 30 min

Drying Time

Touch dry	4 hours	2 hours
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Fully dry	7 days	4 days
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Recoat able	24 hours	18 hours
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Application temperature	20°C - 40°C. Outside this temperature - consult Fosroc for guidance.
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Chemical resistance: The fully cured coat is resistant to :

Water
Sea water
Effluent water
Ground water
Sewage water
Distilled water
Atmospheric conditions
Exhaust and sewage gases
Dilute mineral acids and alkalis
Many organic solvents
Barnacles and organic growths

Nitocote® ET550

Specification clauses

Corrosion, chemical and abrasion resistant lining

The chemical and abrasion resistant coating shall be Nitocote ET550, a high build, pitch extended epoxy amine adduct, two pack system, specifically designed to provide a tough, impermeable and corrosion resistant film.

Application instructions

Surface preparation

Concrete

Surface should be clean, dry, free from laitance, loose particles and previous coatings. This should be achieved by blast cleaning, water jetting, wire brushing or grinding. Blow holes, if any, should be filled with a suitable putty like Nitomortar FC.

Steel

Any rust, millscale and other impurities should be removed from the substrate by blast cleaning to SA 2 1/2.

Hot dip galvanised steel

Galvanised steel should be lightly blast cleaned or cold phosphated. When the galvanised process includes quenching in an aqueous chromate solution, Nitocote ET550 can be applied directly to the substrate, provided it is clean and dry.

Mixing

Mix both components until a homogenous mixture is obtained. It is important that both components are intermixed thoroughly and that no traces of the components remain unmixed. If necessary adjust the viscosity by adding up to 5% Nitoflor Sol to the base component before mixing with hardener.

Application

Nitocote ET550 may be applied by brush or spray to give uniform finish. Faster rates of application are possible using airless spray equipment. A minimum nozzle pressure of 140 bar with an orifice size of 0.65 - 0.79mm has been found suitable. Upto 5% by volume Nitoflor Sol may be added to ease spray application.

Cleaning

Tools should be cleaned with Nitoflor Sol immediately after use.

Estimating

Packaging

Nitocote ET550 is supplied in 18L packs.

Nitoflor Sol - 5 and 20 litre jerry cans.

Coverage

Theoretical coverage : 1.80 - 1.90 m²/ litre for 350 microns DFT.

Practical coverage : Practical coverage may vary depending on substrate condition and application method.

Storage

Shelf life

6 months if stored at 30°C. Store in a cool dry place in unopened tins.



Nitocote® ET550

Precautions

Health and safety instructions

Some people are sensitive to epoxy resins, so gloves and a barrier cream should be used when handling these products. If contact with the resin occurs, it must be removed, before it hardens, with a resin removing cream followed by washing with soap and water. Solvent should not be used.

The use of goggles is recommended but should accidental eye contamination occur, it shall be washed thoroughly with plenty of water and medical treatment shall be sought immediately.

Ensure good ventilation and do not smoke during use.

Fire

Nitocote ET550 and Nitoflor Sol are flammable. Do not smoke or use near naked flame.

Flash points

Nitocote ET550	Base	36°C
Nitocote ET550	Hardener	26°C
Nitoflor Sol		33°C

Additional information

Dekguard S was formerly known as Nitocote Dekguard S. Fosroc manufactures a wide range of products specifically designed for repair and refurbishment of damaged reinforced concrete. This includes hand-placed and spray grade repair 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, water proofing membranes, grouting, anchoring and specialised flooring materials.

Fosroc have also 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 these destructive mechanisms. Further information is available from the publication : " Concrete Repair and Protection - The Systematic Approach'.

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



Nitocote® ET550



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INDIA/0704/C

Nitocote® HR260



constructive solutions

Heat resistant silicone acrylic protective coating

Uses

Used in a wide range of industrial environments like oil refineries, chemical plants, power stations etc., where temperature resistance is required upto 260°C.

Advantages

- Simple application by brush or roller
- Good resistance to dry heat upto 260°C and UV light.
- Anticorrosive

Description

Nitocote HR260 is a single component silicone acrylic coating with thermally stable pigments.

Technical support

Fosroc offers technical support service to specifiers, end users and contractors, as well as onsite technical assistance in locations all over the country.

Properties

Colour	Grey
Density	1.1 kg / litre
Volume solids	39 - 40%
Drying time at 30°C	20 min.
Overcoating time	2 hours
DFT per coat	40 microns

Application instructions

Preparation

All surfaces to be coated should be clean, dry and free from contamination. Oil or grease should be removed thoroughly by solvent cleaning. Any surface defects due to sand blasting should be filled in appropriate manner.

Application

Nitocote HR260 can be applied on approved anticorrosive primers. Apply two coats of the material for optimum performance using a brush or roller.

Estimating

Packaging

Supplied in 5 and 20 litre packs.

Coverage

10 m² per litre per coat @ 40 microns DFT. The above coverage may vary depending on the substrate and application procedure.

Storage

Under normal ware house conditions in unopened containers below 30°C.

Shelf life

12 months.

Precautions

Health & Safety

Gloves should be used when handling. If contact with skin occurs, it must be washed with detergent and water. Solvent should not be used. The use of goggles is recommended. Direct contact with eyes will cause irritation and may cause serious damage if left untreated. Any eye contamination should be washed thoroughly with plenty of water and immediate medical treatment sought.

Fire

Nitocote HR260 is flammable. Adequate ventilation should be ensured during application. Smoking, presence of a naked flame is strictly prohibited.

Flash point : 24°C.

Nitocote® HR260

Additional information

The Fosroc range of associated products includes high strength cementitious grouts, epoxy grout, polyester resin based mortar for rapid presetting of steel shims to level or for direct bedding of small base plates; Resin anchoring systems for same day anchoring of bolts in drilled holes in concrete or rock. Also available a range of products for use in construction; viz, admixtures, curing compounds, release agents, flooring systems and repair mortars.

Separate data sheets are available on these products

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INDIA/0732/A



constructive solutions

Nitocote® HT120

Solvent free, novel resin coating, resistant to temperatures up to 120°C

Uses

Protective coating for concrete and steel used for high temperature service conditions up to 120°C. It is particularly useful to resist boiling water under continuous or partial service conditions in areas like:

- Power stations
- Water treatment plants
- Desalination plants
- Boiling water tanks

Advantages

- Resistant to boiling water under continuous service conditions
- Resistant to thermal shocks and freeze-thaw cycles
- Abrasion and corrosion resistant
- Resistant to sea water
- Can be applied directly on prepared substrate without using a primer
- High build application
- Smooth, glossy, easy to clean surface
- Low cost service life - resistant to mould growth
- Easy to apply, solvent free formulation makes it suitable for use in confined spaces

Description

Nitocote HT120 is a two pack, solvent free, 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 dark grey colour.

Design criteria

Nitocote HT120 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 HT120 must be applied on to the substrate at the coverage rates recommended.

Properties

Solids by weight	:	100%
Specific gravity	:	approx. 1.55 (mixed)
Pot life	:	180 mins @ 23°C
	:	90 mins @ 35°C
	:	40 mins @ 45°C
Drying time	@ 23°C	@ 35°C
Touch dry	:	6-8 hours 3 hours
Recoat able	:	8-20 hours 4-14 hours
Full cure	:	7 days 4 days
Bond strength after 600 hours water boil		
ASTM D4541	:	4.5 N/mm ² concrete failure
Physical effects after 600 hours water boil	:	No cracking, chalking, softening, blistering or debonding
Chemical resistance	:	
Alkalis	:	
Sodium hydroxide (sat.)	:	Excellent
Aqueous solutions		
Chlorinated water	:	Excellent
Tap water	:	Excellent
Distilled water	:	Excellent
Sea water	:	Excellent
Sugar solution (sat.)	:	Excellent
Glucose syrup (80%)	:	Excellent
Salt solution (sat.)	:	Excellent
Starch solution	:	Excellent
Others		
Sewage water	:	Excellent
Marsh water	:	Excellent

Please consult your local Fosroc office for details on various chemicals and operating conditions.

Nitocote® HT120

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 and organic growth. Concrete surfaces must be fully cured, laitance free and free from any traces of shutter release oils and curing compounds.

To achieve the above it is recommended that the substrate should be grit blasted which will also provide a suitable key for Nitocote HT120.

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 mixing paddle on a heavy duty, slow speed electric drill. Mixing should be carried out continuously for a minimum of 3 minutes.

Application

The minimum application temperature is 5°C.

All surfaces should be treated with two coats of Nitocote HT120.

The thoroughly mixed material should be applied with a suitable brush, roller or spray.

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 3 hours and not more than 14 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 HT120 be stored in a heated building and removed immediately before use, as workability deteriorates and curing times increase at lower temperatures.

Cleaning

Nitocote HT120 should be removed from tools and equipment with Nitoflor Sol immediately after use. Cured material can only be removed mechanically.

Limitations

- Nitocote HT120 is formulated for application to clean, sound concrete and steel.
- Nitocote HT120 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 3°C above dew point.
- Although Nitocote HT120 may be applied to damp concrete, there must be no standing or running water.
- Nitocote HT120 is not colour stable when exposed to direct sunlight or when in contact with some chemicals such as acids and oxidising agents.



Nitocote® HT120

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

Nitocote HT120	:	4 litre packs
Nitoflor Sol	:	5 litre cans

Coverage

Nitocote HT120	:	5.00 m ² /litre @ 200 microns wft per coat
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Note: The coverage figure is theoretical – due to wastage factors and the variety and nature of 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, air conditioned 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 will be reduced. Air conditioned storage at high ambient temperatures is recommended.

Precautions

Health and safety

Nitocote HT120 and Nitoflor Sol should not come in contact with the skin and eyes, or be swallowed. When using Nitoflor Sol 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 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 HT120 is non-flammable.

Nitoflor Sol is 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 point

Nitoflor Sol	:	33°C
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For further information, refer to the Product Material Safety Data Sheet.

Nitocote® HT120

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.

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

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INDIA/0780/A



constructive solutions

Nitocote® PE135

Eco friendly, waterproofing cum protective coating based on hydrophobic polyester resin

Uses

Provides a highly effective waterproofing cum protective coating, with chemical and abrasion resistance to prevent corrosion in reinforced concrete members and exhibits cost and labour saving supplementary benefits. It can be used in a wide range of applications :

- Suitable for underground protection, foundations etc.
- Dual purpose waterproofing cum protective coating on damp concrete/ masonry.

Advantages

- Can be applied on damp concrete which is one day old.
- Cost saving, material which can be used as a protective coating and waterproofing agent in a single application.
- Single pack - no component mixing, no wastage, multiple applications from single pack
- Labour saving, single component material which is also water based, and therefore non-toxic.
- UV stable - will not fade or deteriorate in strong sunlight.
- Environmentally friendly, solvent, pitch and asbestos free and can be used in confined spaces.
- Excellent service life - resistant to chloride and sulphate ions plus a wide range of chemicals.
- Durable finish - offers good abrasion resistance.

Standards compliance

Nitocote PE135 also complies with the concrete curing requirements of ASTM C309, when applied at the rate of 5m² per litre.

Description

Nitocote PE135 is a single component, high performance, grey colour viscous liquid coating based on hydrophobic polyester resin. It is totally free from hazardous materials/ carcinogens such as coal tar pitch, hydrocarbon based solvents, aromatic amines etc.

Specification

Where shown on the contract documents, below ground surfaces shall be protected with Nitocote PE135, a hydrophobic polyester emulsion coating at a rate of 400 microns wet film thickness.

Properties

Specific gravity (20°C)	: 1.28
Solids content by weight	: 53.8%
Solids content by volume (ASTM D2697)	: 43%
Surface drying time (ASTM D1640)	: 35 - 40 min @ 20°C 10 - 15 min @ 35°C 04 - 06 min @ 45°C
Overcoating time (ASTM D1640)	: 6 - 7 hours @ 20°C 3 - 4 hours @ 35°C 2 - 3 hours @ 45°C
Complete cure	: 7 days @ 25°C
Water absorption (BS 1881 Pt. 122)	: 0.2%
Reduction in water absorption (BS 1881 Pt. 122)	: 90.7%
Water permeability (DIN 1048: Pt. 5)	: Nil
Adhesion strength (ASTM D4541)	: 1.5 N/mm ²
Curing efficiency (applied on 24 hrs cured mortar) (ASTM C309)	: moisture loss 0.17 kg/m ²

Chemical resistance

Acids (m/v)

Lactic acid 20%	: Excellent
Acetic acid 20%	: Excellent
Nitric acid 5%	: Excellent

Solvents & organics

Ethylene glycol 40%	: Excellent
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Aqueous solutions

Copper Sulphate 25%	: Excellent
Zinc Sulphate 25%	: Excellent
Magnesium Sulphate 25%	: Excellent
Tap water	: Excellent
Sea water	: Excellent
Ground water	: Excellent
High sulphate water	: Excellent
Distilled water	: Excellent

For resistance to other chemical, consult the local Fosroc representative.

Nitocote® PE135

Instructions for use

Surface preparation

All surfaces must be clean and free from laitence, dirt, dust, oil and grease. In case of porous substrates, spray liberal quantity of water on the substrate, prior to commencement of application.

Application

Nitocote PE135 should be applied by roller to prepared surfaces. Stir well before use, replace lid when not in use. Soak up any spillage with water and wash down immediately.

Apply Nitocote PE135 at the rate of 2.5m² per litre, in two coats to give a minimum wet film thickness of 400 microns.

Vertical applications can be achieved by single coat application upto a maximum wft of 600 microns per coat. For multiple coat application, the second coat should be applied at right angles to the first within the stated overcoating times. All applications should be continued up verticals to the existing damp proof course. Ensure that the coating is not damaged during subsequent applications.

Repairs

Any damaged areas can be readily overcoated to restore the membrane continuity. The surface is to be properly prepared using emery cloth to rub down the surface to provide a key and is to be made dust free, prior to product application.

Cleaning

Nitocote PE135 can be removed using only clean water, whilst still damp. If left to dry, then use a scourer.

Limitations

- Application should not commence below 10°C or above 50°C.
- Do not apply on running or standing water or when there are chances of rain.

Estimating

Supply

Nitocote PE135	:	4 litre packs
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Theoretical coverage

General use	:	2.5m ² per litre @ 400 micron wft/coat (2 coat application recommended) (actual coverage rates will depend upon substrate porosity)
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Curing compound	:	5m ² per litre per coat to give 200 micron wft
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Storage

Nitocote PE135 will have a minimum shelf life of 12 months if stored in normal warehouse conditions at less than 25°C.

Health and safety

Some people are sensitive to resins and solvents, so gloves and barrier creams (e.g. Kerodex Antisolvent) should be used when handling these products. Remove any contamination from the skin with soap and water, or resin removing creams (e.g. Kerocleanse Standard Grade Skin Cleaner) followed by washing with soap and water. Do **not** use solvent.

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INDIA/0773/A





constructive solutions

Nitocote® SN522

Colourless silicone water repellent

Uses

Nitocote SN522, is used to provide water repellent surface with improved self cleaning properties on exterior building - brick work, concrete, cement rendering, natural or cast stone. Helps in reducing efflorescence due to soluble salts in brickwork.

Advantages

- **Ready to use** : Brush or spray applied direct from container.
- **Versatile**: Equally effective on old or new surfaces.
- **Self-cleaning** : Unaffected by salt-laden atmosphere, reduces unsightly staining.
- **Protects brickwork**: Risk of efflorescence is reduced.
- **Protects concrete**: Reduces causes of cracking and crazing in in-situ or precast concrete
- **Colourless**: Preserves natural colour and texture of created material. Allows surface to breathe.

Standards compliance

Nitocote SN522 complies with BS 6744-92 Class A and Class B as silicone - based water repellent.

For application on brickwork, concrete, cement rendering, nature or cast stone of predominantly siliceous nature, it complies with BS6744-92 Class A.

For application on sand stone, lime stone, calcium silicate, brickwork, natural or cast stone of predominantly calcareous nature, complies with BS6744-92 Class B.

Description

Nitocote SN522 is supplied as a colourless, ready to use, silicone resin solution which can be sprayed or brush applied onto the surface.

Technical Support

Fosroc offers a comprehensive range of high performance, high quality concrete repair and construction products. In addition, Fosroc offers technical support service to specifiers, end users and contractors, as well as on site technical assistance in locations all over the country.

Properties

Water resistance

Repels rain water and inhibits ingress of surface water provided there is no hydrostatic pressure.

Permeability

Permeability is low to water, salt solution, dust and soot particles. Leaching of soluble salts from brick work, which causes efflorescence, absorption of deicing salts by concrete which causes degradation and absorption of atmospheric dirt by brickwork, concrete and stone are all minimised.

Water vapour release

Nitocote SN522 allows building surfaces to breathe naturally.

Application instructions

Preparation

Surfaces should be dry, although slight dampness is not detrimental. Surface to be treated should be free from oil, grease, loose particles, decayed matter and moss or algae growth. For this, cleaning with Reebaklens is recommended. Joints in brickwork should be sound. If not, should be raked and redone with cement/sand mortar using Conplast X4211C waterproofing compound.

Coating

Apply Nitocote SN522 evenly by spraying or brushing. Ensure an even coat over the entire surface. Porous surface should be well saturated with a two coat application.

Decorating

Decorative coatings can be applied to surfaces previously treated with Nitocote SN522. Water based cement or emulsion paints should not be applied on coated areas. They can be applied before coating the surface with Nitocote SN522 coating.

Cleaning

Brushes and equipment should be cleaned with Nitoflor Sol immediately after use.

Nitocote® SN522

Estimating

Packaging and coverage

Nitocote SN522 is available in 1, 5 & 20 litre containers. On brick work and smooth cement renderings, 4.5 - 9 m² per litre can be covered depending upon porosity of the substrate.

Storage

Shelf life

Nitocote SN522 has a shelf life of 12 months if kept in a dry store in its original packing. High temperature and humidity storage may reduce this period.

Precautions

Health & Safety instructions

Contact with skin and eyes shall be avoided. Contamination with skin and eyes should be washed with water. Nitocote SN522 in liquid state is slightly toxic. Should be kept away from children and animals. Prolonged inhalation of the vapour should be avoided and adequate ventilation be ensured.

Fire

Nitocote SN522 is inflammable. Liquid vapour should not be exposed to naked flames. Smoking should be prohibited during application.

Flash point

Nitocote SN522 : 38°C

Note : It is important to reseal containers after use to prevent deterioration of the product or evaporation. Any spillage should be absorbed with sand or saw dust.

Additional information

Fosroc manufactures a wide range of products specially designed for the repair and refurbishment of damaged reinforced concrete. This includes repair mortars, fluid micro concretes, chemical resistant epoxy mortars in addition to comprehensive package of protective coatings. In addition, a wide range of complementary products are available. This includes admixtures, joint sealants, waterproofing membranes, grouts and anchors and specialised flooring materials.

Separate datasheets are available on these products.

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INDIA/0809/F





constructive solutions

Nitocote® UR512

Two component aliphatic polyurethane protective coating

Uses

Nitocote UR512 provides an easily cleaned chemical and UV resistant protective coating, also suitable for external waterproofing.

Advantages

- **Durable** : Low maintenance costs
- **Non yellowing** : Will not yellow on exposure to UV rays.
- **Chemical resistant** : Excellent resistance to most industrial chemicals
- **Hygienic** : Seamless surface, easily cleaned

Standards compliance

Nitocote UR512 meets the requirements of UL 94 for resistance to spread of flame.

Description

Nitocote UR512 is a two component, pigmented, aliphatic polyurethane coating possessing good resistance to long term exposure of UV rays and chemical attack.

Technical Support

Fosroc offers technical support & service to specifiers and contractors as well as on-site assistance.

Properties

Pot life at 30°C	:	Min.1 hour
Recoat time at 30°C	:	2 - 4 hours
Initial cure at 30°C	:	16 hours
Final cure at 30°C	:	5 days
Flash point	:	35 °C

Chemical resistance

Nitocote UR512 is resistant to chemical attack at ambient temperature, under the following exposure conditions

Hydrochloric acid (36%)	:	Occasional contact
Nitric acid (15%)	:	Occasional contact
Sulphuric acid (10%)	:	Regular contact
Citric acid (10%)	:	Occasional contact
Sodium Hydroxide (50%)	:	Occasional contact
Ammonia (10%) Soln.	:	Occasional contact
Bleach concentrate	:	Occasional contact
Urea (Saturated)	:	Regular contact

Sugar (Saturated)	:	Regular contact
Sodium Chloride (Saturated)	:	Regular contact
Methanol	:	Occasional contact
Butanol	:	Occasional contact
Mineral spirits	:	Regular contact
Xylene	:	Occasional contact
Lubrication oil	:	Regular contact
Gasoline	:	Occasional contact

At elevated temperatures or where mixtures of chemicals are involved, the effects may be different than the above results. Consult Fosroc for advice.

Specification clauses

As a protective coating - "Areas as marked on the steel, concrete and/or masonry shall be applied/coated with Nitocote UR512, a two component aliphatic polyurethane coating to a thickness of 90 - 100 microns d.f.t in two coats of application. When exposed to UV rays for long periods, the cured coated film shall not yellow and chalk. The coated surfaces should retain a semi gloss finish. The potlife of the mixed material shall not be less than one hour at 30°C. It shall be recoatable in 2 - 4 hours at 30°C and shall cure fully in 5 days at 30°C. It shall be resistant to spread of flame when tested as per UL94 Standards. It shall develop a minimum bond strength to steel or cementitious substrates of 1.5 N/mm², when tested for Pull Off strength with an Elcometer."

As a waterproof coating- "Providing and applying a two part polyurethane based waterproof coating Nitocote UR512 in 3 coats of application @ 0.1 litre/m²/coat, over rcc slab including sprinkling of clean sand (300 microns - particle size) or, pea gravel and, laying pcc (1:2:4), mixed with integral waterproofing compound, Conplast X421IC, at a dosage of 150ml/50 kg bag of cement, over the fully cured Nitocote UR512 coating, as per manufacturer's specifications. It shall be an aliphatic, non yellowing, non chalking polyurethane based waterproof coating; with a minimum bond strength of 1.5 N/mm² to concrete when tested with a Pull Off tester. " The cured film shall be protected with concrete screed / mortar when used on accessible roofs to avoid damage from foot traffic.

Nitocote® UR512

Application instructions

Surface preparation

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, laitence 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 blow-holes, and provide a suitable key for Nitocote UR512. All blow holes and imperfections should be filled with Nitomortar FC, epoxy putty.

Mixing

The individual components should be thoroughly stirred before mixing them together. The components should then be mechanically mixed together for atleast 3 minutes using a slow speed (400 - 500 RPM) drill machine attached with a mixing paddle.

Application

Apply Nitocote UR512 with a nylon brush, or a flat pile felt roller, to the prepared substrate at a thickness of 100 microns WFT (45 microns DFT). Allow Nitocote UR512 first coat to dry for 2-4 hours at 30°C and then apply the second coat. When applying Nitocote UR512 as a topcoat over any of the Nitocote range of epoxy systems, it must be applied after 6 hours but within 24 hours of applying the epoxy.

Note : When applying Nitocote UR512, if the moisture content in the substrate is more than 3%, blistering of the coating may occur.

Curing

This coating will become tack free in approximately 2 - 4 hours and be fully cured in 5 days.

Number of coats

Two finish coats are recommended unless used as a top coat for freshly applied epoxies.

Cleaning

Clean tools and equipment immediately after use with Nitoflor Sol. Wash hands and skin with soap, or an industrial hand cleaner.

Limitations

Minimum ambient surface and material temperature must be between 10 to 40°C. For applications outside this range, contact Fosroc for advise. Application of the product should be always on dry substrates.

Storage

Shelf life

Nitocote UR512 has a shelf life of 6 months when stored under normal warehouse conditions in unopened containers. Exposure to moisture greatly reduces the shelf life, particularly that of the hardener.

Estimating

Packaging

Nitocote UR512	-	4 Litres
Nitoflor Sol	-	5 & 20 Litre tins

Coverage

The theoretical coverage is 10 m² /litre/coat at 45-50 microns DFT (100 microns wft). However practical coverage may vary depending on the porosity of substrate, application thickness etc.



Nitocote® UR512

Precautions

Health & Safety

Nitocote UR512 and Nitoflor Sol 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.

Should accidental skin contact occur, remove immediately with a resin removing cream 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 Datasheet.

Fire

Nitocote UR512 and Nitoflor Sol are flammable. Do not use near a naked flame.

Flash Point

Nitoflor Sol - 33°C

Additional information

Fosroc manufactures a wide range of products specifically designed for the repair and refurbishment of damaged reinforced concrete. This includes repair mortars, fluid micro-concretes, chemical resistant epoxy mortars in addition to comprehensive package of protective coatings. In addition, a wide range of complementary products are available. This includes joint sealants, waterproofing membranes, grouts and anchors and specialised flooring materials.

Separate datahsheets are available on these products.



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