Nitocote EPU

UV resistant, Flexible protective coating, based on epoxy polyurethane resins

Uses

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

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

Advantages

- Flexible coating
- Cost saving - primerless system, easy brush roller or spray application
- Added value system - acts as an impermeable waterproof
- Coating and excellent resistance to underground environment
- Excellent chemical resistance, UV resistance
- Resistance to bacterial growth

Description

Nitocote EPU is based on hybrid combination of epoxy polyurethane resins. It is supplied as a two pack material in pre-weighed quantities ready for on-site mixing and use.

Nitocote EPU is applied as a two coat application. It is generally applied at a wet film thickness of 200 microns per coat. Nitocote EPU is available in a standard Grey colour, other colours are available subject to minimum order quantities.

Specification

The corrosion resistant coating shall be Nitocote EPU, a tar free, a flexible epoxy-polyurethane coating. It shall possess excellent bond to the concrete substrate. The coating shall be resistant to underground conditions, alkalis, salt solutions and acidic solutions.

It shall also be resistant to wide range of oils, fuels, sea water and sewage.

Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity</td>
<td>1.48 g/cm³ at 23°C</td>
</tr>
<tr>
<td>Pot life (ASTM D2471):</td>
<td>3 hours @ 23°C</td>
</tr>
<tr>
<td>Tack free time (ASTM D1640):</td>
<td>6 hours @ 23°C</td>
</tr>
<tr>
<td>Min. Over-coating time (ASTM D1640):</td>
<td>8 hours @ 23°C</td>
</tr>
<tr>
<td>Full cure (ASTM D1640):</td>
<td>7 days @ 23°C</td>
</tr>
<tr>
<td>Adhesion Strength* (ASTM D4541):</td>
<td>1.5 - 2.5 N/mm²</td>
</tr>
<tr>
<td>Water Absorption (ASTM C570):</td>
<td>0.2%</td>
</tr>
<tr>
<td>Tensile Strength (BS2782):</td>
<td>10 N/mm²</td>
</tr>
<tr>
<td>Elongation at break (BS2782):</td>
<td>Approx 25%</td>
</tr>
</tbody>
</table>

* depending on the type of concrete substrate

Chemical resistance

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

<table>
<thead>
<tr>
<th>Acids (m/v)</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Hydrochloric acid 10%</td>
<td>Resistant</td>
</tr>
<tr>
<td>Sulphuric acid 25%</td>
<td>Resistant</td>
</tr>
<tr>
<td>Nitric acid 10%</td>
<td>Resistant</td>
</tr>
<tr>
<td>Phosphoric acid 15%</td>
<td>Resistant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aqueous solutions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tap water</td>
<td>Resistant</td>
</tr>
<tr>
<td>Sea water</td>
<td>Resistant</td>
</tr>
<tr>
<td>Ground water</td>
<td>Resistant</td>
</tr>
<tr>
<td>Sewage</td>
<td>Resistant</td>
</tr>
</tbody>
</table>

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

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.
Nitocote EPU

Instructions for use

Preparation

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

Concrete surfaces

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

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.

For porous concrete surfaces, Nitoprime 25 or 31 can be used as primer (refer to individual TDS).

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 28.

Mixing

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

It is 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.

Application

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

Brush/Roller application

Once mixed, the material should be immediately applied, ensuring that a continuous coating is obtained. The first coat is applied to achieve a uniform coating with a wet film thickness not less than 200 microns, and should be allowed to dry for at least 2 hours at 35°C before the application of the second coat.

The second coat should be applied after 4 hours (at 35°C) from the application of the first coat. The second coat should be applied as above again achieving a wet film thickness not less than 200 microns.

Spray application

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

Cleaning

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

Hot weather working practices

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

i. Store unmixed materials in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight.

ii. Keep mixing and placing equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.

iii. Try to eliminate application in the middle of the day, and certainly avoid application in direct sunlight.

iv. For hand application, ensure that there are sufficient operatives available to complete application within the pot life of the material.

v. Have a ready supply of Fosroc Solvent 102 available for immediate cleaning of tools after use.

Repairing and over-coating

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

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

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

■ Nitocote EPU is formulated for application to clean sound substrates of steel or concrete; and where it can be protected from contact with water for the first 24 hours after application as discoloration could occur.

■ For cold weather working (down to 5°C), it is recommended that materials are stored in a heated building and only removed immediately before use. Accelerated heating methods are not to be utilized under any circumstances.

Estimating

Supply

<table>
<thead>
<tr>
<th>Material</th>
<th>Packs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitocote EPU</td>
<td>10 Liter Packs</td>
</tr>
<tr>
<td>Nitoprime 25</td>
<td>1 and 5 kg Packs</td>
</tr>
<tr>
<td>Nitoprime 28</td>
<td>1 and 5 kg Packs</td>
</tr>
<tr>
<td>Nitoprime 31</td>
<td>1, 5 &amp; 15 kg Packs</td>
</tr>
<tr>
<td>Fosroc Solvent 102</td>
<td>4 &amp; 25 Liter Packs</td>
</tr>
</tbody>
</table>

Coverage

<table>
<thead>
<tr>
<th>Material</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitocote EPU</td>
<td>5.0 m²/litre @ 200 microns WFT (per coat)</td>
</tr>
<tr>
<td>Nitoprime 25</td>
<td>4 - 6 m²/kg</td>
</tr>
<tr>
<td>Nitoprime 28</td>
<td>4 – 6 m²/kg</td>
</tr>
<tr>
<td>Nitoprime 31</td>
<td>4 – 6 m²/kg</td>
</tr>
<tr>
<td>Fosroc Solvent 102</td>
<td></td>
</tr>
</tbody>
</table>

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 EPU supplied in 10 liter packs have a shelf life of 12 months, when stored in warehouse conditions below 35°C.

Precautions

Health and safety

Nitocote EPU, Nitoprime 25 and Fosroc Solvent 102 should not come in contact with skin or eyes, nor should they be swallowed. Avoid inhalation of vapors 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 EPU.

Fire

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

Nitoprime 25, Nitoprime 28 and Fosroc Solvent 102 are flammable. Do not use near a naked flame.

Flash points

<table>
<thead>
<tr>
<th>Material</th>
<th>Flash point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitoprime 25</td>
<td>55°C</td>
</tr>
<tr>
<td>Nitoprime 28</td>
<td>27°C</td>
</tr>
<tr>
<td>Fosroc Solvent 102</td>
<td>33°C</td>
</tr>
</tbody>
</table>

Additional Information

Fosroc manufactures a wide range of complementary products which include:

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

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

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

For further information on any of the above, please consult your local Fosroc office - as below.
Important note:
Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation of information given by it.