

Nitowrap Encapsulation Resin

High strength penetrating epoxy resin for use with Nitowrap structural strengthening fabrics.

Uses

Nitowrap Encapsulation Resin is a high quality resin formulated for use with the Nitowrap system. It is used for strengthening load carrying capacity of different structures, commonly to improve strength in flexure and shear. It gives full contact of the fabric to the substrate.

Typical applications include, but are not limited to, dynamic and dead load increases, seismic strengthening and repairing structurally damaged concrete. Nitowrap CW may be used on civil structures and buildings.

Advantages

- Will give excellent penetration of strengthening fabrics, even high density materials.
- Will not run on vertical substrates when applied at the correct temperatures.
- Non-intrusive
- May be used for dry or wet wrap technique
- Corrosion resistance with high life expectancy
- Rapid installation provides cost savings, rapid return to service and minimal disruption to surrounding works
- Typically low-build reducing effects on structural dimensions and clearance
- Nitowrap Primer indicates where pinholes and other surface defects exist
- Nitowrap Primer reduces substrate absorption of Nitowrap Encapsulation Resin ensuring correct material consumption and saturation of the fabric.

Description

Nitowrap Encapsulation Resin is a specifically formulated epoxy for use with structural strengthening fabrics in the Nitowrap range. It should be used in conjunction with Nitowrap Primer. Nitowrap primer will perform the following functions:

Fosroc also provides the following materials for structural strengthening:

- Nitowrap CW : Carbon fabric materials
- Nitowrap AW : Aramid fabric materials
- Nitowrap GW : Glass fabric materials
- Nitoplate CP : Carbon fibre pultruded plates
- Nitorod CR : Carbon fibre pultruded rods

Aramid plates and rods are also available upon request.

Fosroc provides ancillary primers, adhesives and repair materials.

Properties

Table 1: Nitowrap Primer

| Test | Result |
|-------------------------|----------|
| Specific Gravity | 1.1 |
| Viscosity at 25°C | 2,000cps |
| Potlife at 20°C | ~70 mins |
| Shear Adhesion Strength | >15 MPa |
| Compressive Strength | >180 MPa |
| Compressive E-modulus | >2.7 GPa |
| Flexural Strength | >135 MPa |
| Tensile Strength | >38 MPa |

Table 2: Nitowrap Encapsulation Resin

| Test | Result |
|-------------------------|----------|
| Specific Gravity | 1.1 |
| Viscosity at 25°C | 2,000cps |
| Pot Life at 20°C | ~60 mins |
| Shear Adhesion Strength | >14 MPa |
| Compressive Strength | >170 MPa |
| Compressive E-modulus | >2.5 GPa |
| Flexural Strength | >120 Mpa |
| Tensile Strength | >37MPa |

Technical support

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

Application Instructions

Fosroc recommends that application of any structural strengthening system should be undertaken by trained and experienced contractors.

Nitowrap products must be applied in strict accordance with the product method statement, a copy of which may be obtained from your nearest Fosroc technical office

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Surface Preparation

Concrete surfaces must be dry, smooth and free from debris or loose material. Surfaces must be fully cured and free from coatings, impregnations or contamination.

Thorough preparation of the substrate is vital. Light grit blasting is recommended to remove all deleterious substances and provide a suitable mechanical key. The surface should be vacuumed after mechanical preparation.

All defects, including cracks, loose concrete blowholes and surface imperfections should be made good with Nitomortar repair materials as advised by Fosroc.

Instruction for Use

For full instructions please consult with the relevant technical Data sheet for the Nitowrap fabric you are using.

Substrates should be primed using Nitowrap Primer to ensure substrate consolidation and correct consumption of Encapsulation resin. Consumption of the primer may vary depending upon the porosity of the substrate being treated.

Any identified defects and pinholes visible subsequent to priming should be rapidly sealed with an appropriate Nitomortar product or an additional coat of Nitowrap Primer.

Apply Nitowrap Encapsulation Resin at minimum consumption as stated according to the grade of product as directed in the product data sheet. Use a wet film thickness gauge to ensure minimum thickness is achieved. Apply Nitowrap CW immediately after the application of Nitowrap Encapsulation Resin.

Observe minimum/maximum overcoating times before commencing follow on works. If a subsequent layer of Nitowrap CW is to be applied over the top of the applied system, re-priming is not necessary.

Finishing

After completing the application of the fibre sheet a final layer of encapsulation resin shall be applied at a consumption of 200 to 250g/m².

As Nitowrap fabrics are inert and corrosion resistant the product may be left uncoated. If exposed UV Fosroc recommends that the system is coated with Dekguard S or a similar protective system.

Other considerations may require the system to be covered over, by coatings or renders. These are permissible but should be selected in consultation with Fosroc's technical office.

Cleaning

Nitowrap Primer and Nitowrap Encapsulation Resin should be removed from tools and equipment using Fosroc Solvent 102 immediately after use. Hardened material may be removed mechanically.

Estimating

Supply

| | |
|------------------------------|--------------|
| Nitowrap Primer | : 15 kg pack |
| Nitowrap Encapsulation Resin | : 15 kg pack |

Coverage

| | |
|---|----------------------------------|
| Nitowrap Primer* | : 0.25 – 0.3 kg/m ² * |
| Nitowrap Encapsulation Resin | : See Nitowrap TDS |
| Final layer of Nitowrap Encapsulation Resin | : 0.2 - 0.25 kg/m ² |

* Dependent upon substrate. Two coats of primer may be required.

Limitation

Design calculations must be approved by a licensed professional engineer in accordance with the prevailing design standards of the country where the material will be installed.

Fosroc recommends that application of any structural strengthening system should be undertaken by trained and experienced contractors.

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Storage

Nitowrap Primer and Nitowrap Encapsulation Resin: Store between 5 to 25°C, protect from moisture and direct sunlight.

Shelf Life

Nitowrap Primer has a shelf life of 12 months when stored in appropriate conditions.

Nitowrap Encapsulation Resin has a shelf life of 12 months when stored in appropriate conditions.

Precautions

Health and Safety

For further information refer to the appropriate Product Safety Data Sheet.

Fire

Nitowrap Primer is non-flammable

Nitowrap Encapsulation Resin is non-flammable

In service, observe Glass Transition Point



Important note

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

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