

# Nitowrap GW

(Formerly Known as Nitowrap EPGF)

## High strength glass fibre system for structural reinforcement of concrete and masonry.

### Uses

Nitowrap GW is a system of high-quality glass fibre fabric used with epoxy laminating resins. It is used for strengthening load carrying capacity of different structures, commonly to improve strength in flexure and shear. As a lightweight fabric it can be shaped to fit angles and contours .

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

### Advantages

- Improves flexural strength capacity
- Good tensile strength and elastic modulus
- Non-intrusive
- Corrosion resistance with high life expectancy
- Rapid installation provides cost savings, rapid return to service and minimal disruption to surrounding works
- Lightweight system reduces requirement for heavy supporting equipment and adds negligible additional load
- Typically low build reducing effects on structural dimensions and clearance
- No pre-fabrication required, can u be shaped to existing contours
- May be applied by dry or wet wrap technique
- Glass fibre offers cost efficient alternative to carbon fibre where smaller increases in strength are required.

### Description

Nitowrap GW is a 0° unidirectional glass fibre sheet with good strength and elastic modulus. It is used with specially developed resins 'Nitowrap 30 Primer' and 'Nitowrap 410 saturant Resin' and externally applied to concrete or masonry. When correctly designed and applied, the Nitowrap system may improve structural load carrying capacity, flexural strength, shear strength and provide resistance to deformation.

Fosroc also provides the following materials for structural strengthening:

Nitowrap CW: Carbon fabric materials

Nitowrap AW: Aramid fabric materials

Nitoplate CP: Carbon fibre pultruded plates

Nitorod CR: Carbon fibre pultruded rods

Materials are supplied with ancillary primers, adhesives and repair materials.

### Properties

#### Nitowrap GW– Table 1

#### Product dimensions and physical properties

Product Grade	Nitowrap GWS	
Product Code	430	920
Fibre Density (g/cm <sup>2</sup> )	2.56	
Fibre Area Weight (g/m <sup>2</sup> )	450	935
Standard Roll Width mm	500	500
Standard Roll Length m	80	40
Approx. Consumption of 410 saturant Resin kg/m <sup>2</sup> /layer <sup>2</sup>	550	1.5-2.0
Design Thickness (mm)**	0.17	0.36
Ultimate Elongation	3.1%	
Fibre Tensile Strength (MPa)	2,300	
Fibre E-modulus (GPa)	76	

\* does not include primer of final Nitowrap 410 saturant layer.

\*\* Design thickness based on net-fibre area for single ply. Resin is excluded.

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## 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.

### 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.

When encountering an area where a sharp corner occurs, it should be ground down to a smooth radius of >10mm.

### Instruction for Use – Dry Wrap Technique

Substrates should be primed using Nitowrap 30 Primer to ensure substrate consolidation and correct consumption of Nitowrap 410 saturant.

Any identified defects and pinholes visible subsequent to priming should be rapidly sealed with an appropriate Nitomortar product or an additional coat of Nitowrap 30 Primer.

Apply Nitowrap 410 saturant at minimum consumption as stated according to the grade of product in the attached table. Use a wet film thickness gauge to ensure minimum thickness is achieved. Apply Nitowrap GW immediately after the application of Nitowrap 410 saturant.

Nitowrap GW product must be cut handled in a clean environment using clean gloves at all times. Do not use any part of the fabric that is visibly distressed, has been folded or contaminated. Measure and cut the Nitowrap GW in accordance with the designed drawings, ensuring that all overlaps are correctly accounted for.

Carefully place the Nitowrap GW onto the substrate, ensuring full tight contact with the substrate with no air pockets. Use a ribbed laminating roller to remove ridges and air pockets and to draw sufficient Nitowrap 410 saturant resin to the surface.

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

## Finishing

After completing the application of the glass fibre sheet a final layer of 410 saturant resin shall be applied at a consumption of 200 to 250g/m<sup>2</sup>.

As Nitowrap GW is 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 30 Primer and Nitowrap 410 saturant should be removed from tools and equipment using Fosroc Solvent 102 immediately after use. Hardened material may be removed mechanically.

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## Estimating

### Supply

### Limitations

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.

Nitowrap GW	See table 1
Nitowrap 30	3.5 litre pack
Nitowrap 410	4.0 litre pack
<b>Coverage</b>	
Nitowrap 30	8 - 10 m <sup>2</sup> /litre/coat
Nitowrap 410 saturant	3.5 - 4.0 m <sup>2</sup> /litre/coat



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

Do not fold Nitowrap GW.

Nitowrap 410 saturant is not UV stable. Protect from exposure to direct UV sources.

## Storage

Nitowrap GW should be stored in covered warehouse conditions, and kept clean and dry.

## Shelf Life

Nitowrap GW has an unlimited shelf life when kept in appropriate storage conditions.

Nitowrap 30 Primer has a shelf life of 12 months when stored in appropriate conditions.

Nitowrap 410 saturant 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 GW is non-flammable.

Nitowrap 30 Primer is Non-Flammable

Nitowrap 410 saturant is Non Flammable

In service, observe Glass Transition Point



# Nitoplate GW

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## Fosroc Chemicals (India) Pvt. Ltd.

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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.

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