

## High performance, high strength, corrosion resistant pultruded Carbon fibre plates

### Uses

Nitowrap CFP system is used for increasing load carrying capacity of structural members particularly where increase in live load / traffic loads is expected. It can also be used to repair when damage to structural member has occurred due to rebar corrosion, earthquake, fire etc. and also in structural members having design defects such as insufficient reinforcement and structural depth.

### Advantages

- Very high strength to thickness or weight ratio - Appreciable increase in strength and load carrying capacity without significant increase in dead load.
- Enhanced stiffness, shear, tensile & torsional capacities - Increased load carrying capacity and better resistance to seismic forces and deflection.
- Chemical resistant - excellent resistance to acids and alkalis
- Available in a range of cross sectional areas - allows for cost optimized design
- Thin sections - Can be effectively used in space constrained areas
- Primer not required - reduced downtime
- Economical - Easy to install, time & labour saving

### Description

Nitowrap CFP is a composite fibre system where Nitowrap CFP carbon strip is used in conjunction with an epoxy adhesive, Nitowrap 40. The system can be protected by a UV resistant coat of Nitowrap 512 in case of atmospherically exposed structures.

### Properties

Nitowrap CFP	CFP20	CFP50	CFP80	CFP100
Nominal thickness (mm)	1.2 1.4	1.2 1.4	1.2 1.4	1.2 1.4
Density	1.5g/cm <sup>3</sup>	1.5g/cm <sup>3</sup>	1.5g/cm <sup>3</sup>	1.5g/cm <sup>3</sup>
Nominal width(mm)	20 20	50 50	80 80	100 100
C/s area (mm <sup>2</sup> )	24 28	60 70	96 112	120 140
Tensile strength (N/mm <sup>2</sup> ) (ASTM D3039)	>3000	>3000	>3000	>3000
Young's modulus (N/mm <sup>2</sup> )	≥165000	≥165000	≥165000	≥165000
Elongation	>1.7%	1.7%	1.7%	1.7%

### Epoxy Adhesive - Nitowrap 40

Compressive Strength (MPa)	12 hrs 20	1 Day 40	7 Days 75
Mixed Density (g/cc)	1.65-1.75	1.65-1.75	1.65-1.75
Applied Thickness	2mm	2mm	2mm
Coverage	1.63m <sup>2</sup> / pack	1.63m <sup>2</sup> / pack	1.63m <sup>2</sup> / pack
Pot Life (minutes)	At 30°C	At 40°C	
	30	20	

### Application Instructions

#### Surface Preparation

Concrete to be treated shall be free from oil residues, demoulding agents, curing compounds, grout holes and protrusions. Surface grinding is recommended to get open textured surface. The concrete surface to be glued with Carbon strip shall be structurally repaired prior to treatment. Corrosion induced damages shall be repaired with fosroc range of repair mortars. Structural damages shall be repaired by using epoxy grouting / appropriate mortars from the Renderoc range

#### Mixing

The base and hardener of Nitowrap 40, thixotropic adhesive shall be emptied into a suitable container and mixed with low speed, heavy duty drill fitted with a paddle and ensuring the sides are scrapped down. An uniform grey color should be obtained after mixing thoroughly.

#### Application

Nitowrap CFP Carbon strips shall be cut to the recommended sizes before hand due to the impossibility of joint by lapping. Mixed adhesive is applied using a rubber spatula / serrated trowel or other suitable spreader on to the roughened surface of Nitowrap CFP carbon strip such that the thickness of the epoxy adhesive is 2mm. The adhesive applied on Nitowrap CFP carbon strip is now adhered to the prepared substrate such that excess mixed adhesive squeezes out from both the sides of the plate. The overflow excess material shall be removed using rubber spatula or by suitable means.

#### Curing

The adhesive will become tack free in approx. 4-6 hours and fully cured in 7 days.

# Nitowrap CFP

## Cleaning

Tools and equipment shall be cleaned with Nitoflor Sol solvent immediately after use. Hands and skin shall be washed with soap, or an industrial hand cleaner.

## Estimating

### Packaging

Nitowrap CFP 20 is supplied in 200 m roll

Nitowrap CFP 50, 80 & 100 is supplied in 100 m roll

Nitowrap 40 is supplied in 3.7 litre pack

### Coverage of Epoxy Adhesive

Nitowrap 40	CFP 20	CFP50	CFP80	CFP100
Theoretical coverage in m <sup>2</sup> @ 2mm thickness per litre	25	10	6.25	5

## Storage

### Shelf life

Nitowrap CFP has a shelf life of 2 years.

Nitowrap 40 - 12 months, if stored below 35°C in unopened containers

## Precautions

### Health & Safety instructions

Some people are sensitive to epoxy resin systems and may develop dermatitis on skin contact. Rubber gloves and / or barrier creams, protective clothing, goggles and respirator shall be worn while handling the materials. Sufficient mechanical and / or local exhaust ventilation shall be provided to maintain easy working conditions. If contact with skin or eyes occurs, washing with plenty of water is suggested. Solvent should not be used. If irritation persists, immediate medical advice shall be sought. Smoking is prohibited during application / handling of the product.

### Flash Point

Nitowrap 40 (base)	-	100°C
Nitowrap 40 (hardener)	-	100°C
Nitoflor Sol (solvent)	-	33°C

### Additional information

The Fosroc range of associated products includes admixtures, curing compounds, flooring system, precision grouts, repair mortars, protective coatings, joining sealants, waterproofing systems and e-chem solutions.

Separate datasheets are available on these range of products.

### 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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