

# Nitoplate CP Strips

High Strength Composite Laminate Structural Strengthening System for Concrete Structures

## Uses

- Beams, Columns, R.C. Slabs & Walls

### In the following structures:

- Commercial, high rise
- Industrial plants
- Warehouses
- Bridges, Tunnels, Jetties
- Pipes, Culverts, Chimneys
- Power Station plants

## Advantages

Very high strength with minimal additional dead load (High ratio of strength achieved to additional dead load)

- Improves flexural strength capacity
- Excellent fatigue resistance
- Corrosive resistance low maintenance to strength structure.
- Fast & easy installation: cost savings, time savings and giving quick return to service.
- Low build system: giving minimal effect on structural dimensions and clearance.
- Final coating can be applied without preparation.
- Simple detailing for application.
- Application without any usage of heavy machine or equivalent.



## Physical properties

### Nitoplate CP Strips & Polymer matrix epoxy

Carbon Fibre Content	All Type	68%
Binder Content	All Type	32%
Grade of Carbon Fibre	Type : S	Intermediate High Tensile Modulus & Tensile Strength
Grade of Carbon Fibre	Type : M	Very High Tensile Modulus & Tensile Strength
Grade of Carbon Fibre	Type : H	Ultra High Tensile Modulus & Tensile Strength
Density of Carbon Fibre	Type : S	1.80 g/cm <sup>3</sup>
Density of Carbon Fibre	Type : M	1.92 g/cm <sup>3</sup>
Density of Carbon Fibre	Type : H	1.95 g/cm <sup>3</sup>
Grade of Binder	All Type	Polymer Matrix Epoxy Resin

## Durability description

NITOPATE CP STRIPS tensile strength can be stable for 10,000 hours with accelerated exposure test (it is equivalent to 30 years natural exposure), providing:

It is used in strict accordance with the manufacturer's recommendations.

It is used within the design parameters stated in this datasheet.

It is used in conjunction with other approved building systems and materials.

Durability covers weathering and adhesive characteristics. For conditions outside those stated in this data sheet, contact our Technical Specifications Department.

Fosroc reserves the right to modify this time period, depending on but not limited to climatic, site and environmental conditions such as chemical attack, abrasion, water immersion and adverse climatic and temperature conditions.

# Nitoplate CP Strips

## Physical Properties

**Nitoplate CP Strips - Products dimension - Table 2**

Nitoplate CP Strips – Products Dimension – Table 2 Type of Products	Thickness (mm)	Width (mm)	Roll Length (m)	Cross Sectional Area (mm <sup>2</sup> )
<b>Nitoplate CPS Strips Type-S</b>				
Nitoplate CPS 512	1.2	50	100	60
Nitoplate CPS 612	1.2	60	100	72
Nitoplate CPS 812	1.2	80	100	96
Nitoplate CPS 1012	1.2	100	100	120
Nitoplate CPS 1212	1.2	120	100	144
Nitoplate CPS 1512	1.2	150	100	180
Nitoplate CPS 614	1.4	60	100	84
Nitoplate CPS 914	1.4	90	100	126
Nitoplate CPS 1214	1.4	120	100	168
<b>Nitoplate CPM Strips Type-M</b>				
Nitoplate CPM 614	1.4	60	100	84
Nitoplate CPM 914	1.4	90	100	126
Nitoplate CPM 1214	1.4	120	100	168
<b>Nitoplate CPH Strips Type-H</b>				
Nitoplate CPH 614	1.4	60	100	84
Nitoplate CPH 914	1.4	90	100	126

**Nitoplate CP Strips – Mechanical Properties and Specification - Table 3**

Nitoplate CP Strips – Mechanical Properties & Specification – Table 3 Type of Products	Tensile Modulus (N/mm <sup>2</sup> )	Tensile Strength (N/mm <sup>2</sup> )	Flexural Strength (N/mm <sup>2</sup> )	Ultimate Elongation (%)
<b>Nitoplate CPS Strips Type-S</b>				
Nitoplate CPS 512	165,000	2,800	1,670	1.8
Nitoplate CPS 612	165,000	2,800	1,670	1.8
Nitoplate CPS 812	165,000	2,800	1,670	1.8
Nitoplate CPS 1012	165,000	2,800	1,670	1.8
Nitoplate CPS 1212	165,000	2,800	1,670	1.8
Nitoplate CPS 1512	165,000	2,800	1,670	1.8
Nitoplate CPS 614	165,000	2,800	1,670	1.8
Nitoplate CPS 914	165,000	2,800	1,670	1.8
Nitoplate CPS 1214	165,000	2,800	1,670	1.8
<b>Nitoplate CPM Strips Type-M</b>				
Nitoplate CPM 614	220,000	2,400	1,470	1.2
Nitoplate CPM 914	220,000	2,400	1,470	1.2
Nitoplate CPM 1214	220,000	2,400	1,470	1.2
<b>Nitoplate CPH Strips Type-H</b>				
Nitoplate CPH 614	310,000	2,000	1,130	0.45
Nitoplate CPH 914	310,000	2,000	1,130	0.45

# Nitoplate CP Strips

## Physical Properties

### Nitoplate CPA 30 – Epoxy Adhesive

#### Appearance

<b>Component A (Hardener):</b>	1 part by weight
<b>Component B (Base):</b>	2 part by weight
<b>Shear Strength:</b>	15 N/mm <sup>2</sup>
<b>Peel Strength:</b>	(Cleavage) 4 N/mm <sup>2</sup>
<b>Tensile Strength @ 35° C:</b>	30 N/mm <sup>2</sup>
<b>Tensile Modulus:</b>	2 GPa
<b>Elongation At Break:</b>	4.4 %
<b>Dielectric Constant :</b> (Note : 500v at 35° C)	5.6 at 1 kNz
<b>Colour (Visual):</b>	Neutral Paste
<b>Specific Gravity:</b>	1.4kg/L
<b>Sag Flow @ 35° C:</b>	0.05mm to 6.0 mm thick
<b>Shrinkage:</b>	0.04%
<b>Glass Transition Point:</b>	> 67° C
<b>Coefficient of Expansion:</b>	9 x 10 <sup>-6</sup> per °C at 10°C to 40°C
<b>Open Time @ 35° C:</b>	> 30 minutes
<b>Pot Life @ 35° C:</b>	> 30-40minutes

**Note:** for cases where elevated surface temperature is likely to be occurred, a specially formulated epoxy adhesive is available “Nitoplate CPA 30 HT”. Please consult Fosroc office for more information.

## Application Instructions

### Surface Preparation

Reinforced concrete shall be clean, dry, structurally sound and free from foreign material, contaminants, oil, grease and other debris. Any cracks shall be injected with a low viscosity epoxy resin such as Conbextra EP10. For filling surface irregularities such as blowholes, honeycombs, etc., use Nitomortar TC2000 to patch the defective area.

### Installation of Nitoplate CP Strips

After the surface preparation, apply Nitoplate CPA 30 Adhesive at a rate as specified in the Table 5. Mix the Nitoplate CPA 30 Adhesive by using a low speed (300 to 500 rpm) electric drill fitted with a mixing paddle.

Pour 1 part of Hardener to 2 parts of Base into a drum and mix for at least 5 minutes until the mix is uniform. Use up all the epoxy adhesive within 30 minutes after mixing.

Pre-cut the strips to the desire sizes and the surface of the strips shall be roughened with sand paper for good adhesion.

Place the Nitoplate CPA 30 Adhesive onto the concrete surfaces, using a roller or other plastic roller to press the strips into the adhesive until is forced out on both sides of the strips. Remove all the surplus adhesive on both sides before the adhesive hardened.

Leave the completed Nitoplate CP Strips and Adhesive for 24 hours prior to overcoating.

## Estimating

### Nitoplate Strips Adhesive Consumption - Table 5

Type of Products	Adhesive Requirement (kg/meter run)
<b>Nitoplate CPS Strips Type-S</b>	
Nitoplate CPS 512	0.34
Nitoplate CPS 612	0.41
Nitoplate CPS 812	0.54
Nitoplate CPS 1012	0.67
Nitoplate CPS 1212	0.80
Nitoplate CPS 1512	1.02
Nitoplate CPS 614	0.41
Nitoplate CPS 914	0.61
Nitoplate CPS 1214	0.80
<b>Nitoplate CPM Strips Type-M</b>	
Nitoplate CPM 614	0.41
Nitoplate CPM 914	0.61
Nitoplate CPM 1214	0.80
<b>Nitoplate CPH Strips Type-H</b>	
Nitoplate CPH 614	0.41
Nitoplate CPH 914	0.61

## Technical Support

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

## Design

Design aspects are covered in a separate Design Manual. A design service can be supplied by FOSROC under a special arrangement.

## Finishing

Several of Fosroc's Architectural or Protective Coating System may be applied to Nitoplate CP Strips after 24 hours following the strips application. Please consult Fosroc office for more information.



# Nitoplate CP Strips

## Packaging

Nitoplate CPA 30 Adhesive is supplied in 10 kg pack consist of Part A and Part B (Ratio 1:2)

<b>Nitoplate CP Strips</b>	100 meter roll (can be cut to length according to the customer's requirement)
<b>Nitoplate CPA 30 Nitoplate CPA 30 HT</b>	15 kg pack consist of 5 kg Part A (Hardener) 10 kg Part B (Base)

## Storage

<b>Nitoplate CP Strips</b>	Unlimited shelf life.
<b>Nitoplate CPA 30 Nitoplate CPA 30 HT</b>	12 months in original packaging and stored In standard warehouse conditions

## Limitations

Nitoplate CP Strips is only recommended for uses as described in the uses section of this datasheet. The performance of Nitoplate CP Strips is limited to the specifications and recommendations as determined in the design manual.

## 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.



Fosam Company Limited

Head Office  
Post Box 11081  
Jeddah – 21453  
Saudi Arabia

[www.fosroc.com](http://www.fosroc.com)

### 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.

Telephone: +966 2 637 5345

Fax: +966 2 637 5891

email: [fosam@fosroc.com](mailto:fosam@fosroc.com)

### Regional Offices

Jeddah Sales Office	Tel: (02) 608 0999	Fax: (02) 638 0693	Yanbu	Tel: (04) 322 4280	Fax: (04) 391 2980
Jeddah Showroom	Tel: (02) 665 0187	Fax: (02) 667 4844	Makkah	Tel: (02) 542 0869	Fax: (02) 542 0869
Riyadh	Tel: (01) 482 9303	Fax: (01) 482 7562	Medinah	Tel: (04) 855 0091	Fax: (04) 855 0047
Dammam	Tel: (03) 814 1282	Fax: (03) 814 1581	Jubail	Tel: (03) 362 3904	Fax: (03) 362 3875
Khamis Mushayt	Tel: (07) 250 0469	Fax: (07) 250 0469	CSD	Tel: (02) 608 0999	Fax: (02) 638 0693

Registered Office: Industrial Area, Phase 4, Road No. 414, Street No. 407