Nitowrap CWS/GW - Carbon Fiber / Glass Fiber Sheets

Section A : General Comments

High temperature working

It is suggested that, for temperatures above 35°C, the following guidelines are adopted as good working practice:

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

(ii) Keep 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 avoid application during the hottest times of the day, arrange temporary shading as necessary.

(iv) Make sufficient material, plant and labour available to ensure that application is a continuous process.

Low temperature working

Most epoxy products will not cure below 5°C. Therefore it is advisable not to apply the system if temperatures are at or below that temperature for the duration of the application and the material curing.

In cold temperatures the material may be thick in texture making it harder to mix and apply. It is suggested that when working at temperatures of 5 to 10°C, the following guidelines are adopted as good working practice:

(i) Store unmixed materials in a warm (~20°C) environment.

(ii) Work in a warm environment wherever possible. Arrange temporary heating as necessary.

(iii) Try to avoid working at the coldest time of day.

Equipment

It is suggested that the following list of equipment is adopted as a minimum requirement

Protective clothing : Protective overalls

: Good quality gloves, goggles and face mask

Preparation equipment	:	Surface preparation equipment
	:	Vacuum
	:	Proprietary degreaser (if required)
	:	Straight-edge
	:	
Application equipment	:	Drill (300-500RPM)
	:	Mixing paddle
	:	Clean mixing vessel
	:	Resin roller
	:	Impregnation roller (May be provided with Nitowrap)
	:	Rubber spatula
	:	Wet film thickness guage

Application - points of note

Fosroc operates a policy to encourage the use, where possible, of registered applicators, since the long-term performance of the materials is dependent upon proper application. For contractors who wish to apply the materials themselves Fosroc is also able to offer technical assistance and training, either on-site or at its Training Centre.

Section B : Application Method

1.0 Surface preparation

Attention to full and proper preparation of the substrate is essential for complete adhesion of the Nitowrap system.

1.1 Mechanically prepare the concrete to achieve a surface profile of CSP3 as defined by the ICRI. All traces of laitance, dust, oil, paint, curing compounds, grease, corrosion deposits, algae or any unsound material shall also be removed. Techniques such as grit blasting or grinding are best suited as they are unlikely to damage or fracture the concrete.

1.2 Sharp convex corners should be ground to a radius of at least 20mm

1.4 Oil and grease deposits are best removed by steam cleaning, detergent scrubbing or the use of a proprietary degreaser. All residue should be removed. The effectiveness of decontamination should then be assessed by a pull-off test.

1.5 Thoroughly check the substrate for defects which may include cracked or damaged concrete, reinforcement corrosion, large blow-holes or honeycombing. Appropriate inspection techniques may include, but are not limited to: visual survey, hammer test.

1.6 Using a straight-edge, identify undulations and irregularities in the surface. Identify deviations greater than 1mm from the plane.

1.7 Repair any identified defects, specific methodology may be provided upon request:

(i) Cracked concrete >0.2mm shall be injected with Conbextra EP10/EP10(M)

(ii) Blow holes shall be filled with Nitocote VF

(iii) Corrosion damage, hollows or honey combing shall be broken out and repaired with Nitomortar S, exposed reinforcement shall be primed with Nitoprime Zincrich.

(iv) Surface deviations of >1mm shall be ground flat.

1.9 Immediately before commencing application of adhesive the surface shall be brushed and vacuumed to remove any contaminants.

1.10 The concrete surface must be dry at the time of application.

2.0 Mixing Nitowrap 30 Primer

2.1 Empty all of component A and component B of Nitowrap 30 Primer into a clean mixing vessel

2.2 Mix well using a low speed powered mixer (300-500 RPM) for a minimum of 3 minutes. Ensure there are no visual streaks in the mixture.

2.3 Part-mixing of the resin is not normally recommended, however, in warm conditions it may be prudent to do so. If required the ratio should be 2 parts of component A to 1 part of component

B, measured only by weight on accurate scales. Under no circumstances should solvents be used to thin the resin.

3.0 Application of Nitowrap Primer

3.1 Using a short ply roller, apply the Nitowrap Primer to the surface of the concrete at the consumption stated on the Techical Data Sheet.

In cases where concrete is absorbent or the substrate is rough the consumption may increase.

3.2 After applying the primer, visually inspect the surface for pinholes and film formation.

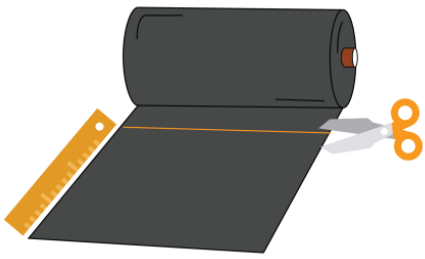
3.3 Where concrete is particularly porous, a second coat of primer may be required. In this instance allow the first coat to set before applying the second coat.

3.4 Allow Nitowrap Primer to set before commencing application of Nitowrap 410 Saturant

4.0 Preparation of Nitowrap CWS/GW

4.3 Cut the Nitowrap CWS (formerly known as Nitowrap EPCF) carbon fiber sheets or Nitowrap GW (formerly known as Nitowrap EPGF) glass fiber sheets to the required length using a sharp shears or guillotine. Take care not to bend the fibres. Inspect the fabric for damage, discard any damaged sections.

4.4 Take care when handling the material. Do not fold the fabric. Ensure the fabric does not become unwoven.



5.0 Mixing Nitowrap 410 Saturant

5.1 Empty all of component A and component B of Nitowrap 410 Saturant into a clean mixing vessel.

5.2 Mix well, using a low speed powered mixer (300-500 RPM) for a minimum of 3 minutes. Ensure there are no visual streaks in the mixture.

5.3 Part-mixing of the resin is not normally recommended, however, in warm conditions it may be prudent to do so. If required the ratio should be 2 parts of component A to 1 part of component B, measured only by weight on accurate scales. Under no circumstances should solvents be used to thin the resin.

6.0 Application of Nitowrap System

6.1 Using a ribbed roller, apply Nitowrap 410 saturant to the primed substrate ensuring material is applied to the minimum consumption.

6.2 Apply the Nitowrap CWS/GW fabric to the wet resin, rolling and smoothing the fabric to the surface, gently to avoid creases and air pockets. Use a rubber spatula to smooth out air pockets.

6.4 Use an impregnation roller to press the Nitowrap CWS/GW fabric into the Nitowrap 410 Saturant and draw it through to the surface.

6.5 If applying subsequent layers of Nitowrap CWS/GW, the first layer should be allowed to set hard. Typically this will take around 24 hours. Re-priming with Nitowrap Primer is generally unnecessary. Repeat steps 4.1 to 6.4.

6.6 After the application of the final layer, seal the fabric with a coat of Nitowrap 410 Saturant

7.0 Protection & Finishing

7.1 For a**pplying a cementitious overlay(plaster), dry sand should be broad casted while the final layer is still wet which improved bonding with plaster.**

8.0 Cleaning

8.1 Nitowrap Encapsulation Resin and Nitowrap Primer should be removed from tools with Fosroc Solvent 102, immediately after use.

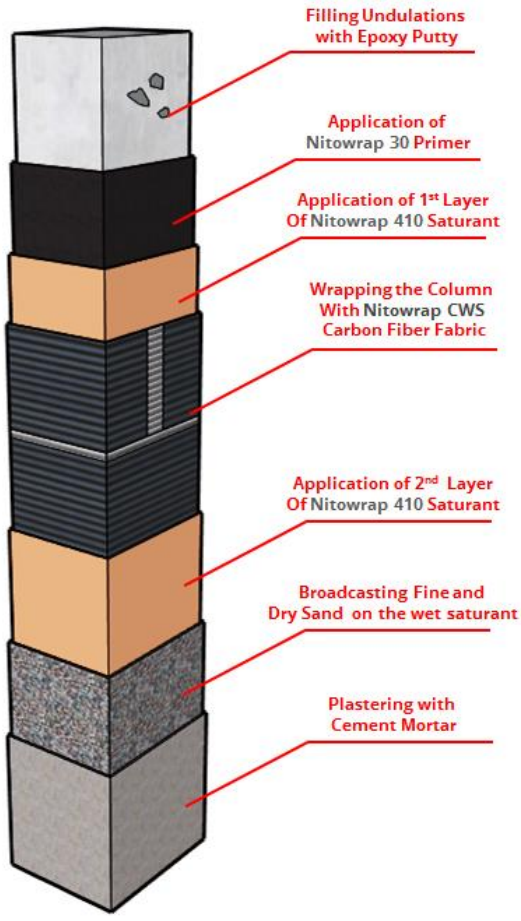
8.2 Hardened material may be removed mechanically.

9.0 Return to Service

9.1 The Nitowrap system takes approximately 7 days until fully cured. While the member may be used within this time, additional loading should not be taken. Loadings and return to service shall be at the specification of the responsible engineer.

Section C : Approval and variations

This method statement is offered by Fosroc as a 'standard proposal' for the application of Nitowrap CW System. It remains the responsibility of the Customer to determine the correct method for any given application. Where alternative methods are to be used, these must be submitted to Fosroc for comment, in writing, prior to the commencement of any work.



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