CONSTRUCTION FABRIC
UNIDIRECTIONAL WOVEN HIGH PERFORMANCE CARBON FIBRE FABRIC

DESCRIPTION

USES & ADVANTAGES
Typical uses include strengthening of structures where there are load increases anticipated, structural repairs, modification of the standard system or modifying errors in planning or construction. Applications may be grouped as follows:

Load Increases
- Higher live load
- Increased wheel loads
- Installation of heavier machines
- Vibration
- Less deformation

Modification of structural system
- Elimination of walls / columns
- Openings cut into slabs

Improvements in suitability for use
- Limitation of deflections
- Reduction of stress in steel reinforcement
- Reduction of crack widths

Damage to structural parts
- Ageing of construction materials / damage caused by fire
- Corrosion of steel reinforcement
- Impact of vehicles

Errors in planning or construction
- Insufficient design dimensions
- Insufficient reinforcing steel section

Advantages include:
- High strength and high modulus.
- 10 times the tensile strength capacity of steel.
- Light weight. Minimal additional dead load.
- Does not corrode. High durability low maintenance.
- Minimal increase in member geometry.
- Easy to hide and overcoat.
- Flexible easy to install on difficult shapes.
- Easy to install minimal down time.
- Chemical resistance.
- Neutralizes the effect of cracks.
- Applied to cracks on concrete surface improves significantly increased fracture strength.
- Increased flexural strength.
- Applied to lower tension surface of reinforced concrete beam provides substantial strength improvements.
- Improved lateral compression strength of cylindrical structures.
- Encasement of columns for seismic protection.
- Improves a structures ability to withstand lateral distortion and buckling.

The following concrete structures are typical areas of application: Bridges, Piers, Parking Structures, Tunnels, Silos, Chimneys, Dams, Tanks and Slabs, Beams and Columns etc. in buildings.

PROPERTIES of Condur CF (HP) Fabric CJ30T

<table>
<thead>
<tr>
<th>Properties</th>
<th>Result</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll Length</td>
<td>Flexible</td>
<td>-</td>
</tr>
<tr>
<td>Fabric Weight</td>
<td>300 gm/m²</td>
<td>-</td>
</tr>
<tr>
<td>Fabric Width</td>
<td>Flexible</td>
<td>-</td>
</tr>
<tr>
<td>Fabric Weave</td>
<td>Unidirectional</td>
<td>-</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>4700 Mpa</td>
<td>ASTM D 3039</td>
</tr>
<tr>
<td>Tensile Modulus of Elasticity (min)</td>
<td>240 GPa</td>
<td>ASTM D 3039</td>
</tr>
<tr>
<td>Ultimate Rupture Strain (min)</td>
<td>1.7 %</td>
<td>ASTM D 3039</td>
</tr>
<tr>
<td>Nominal Thickness (minimum)</td>
<td>0.166 mm</td>
<td>-</td>
</tr>
</tbody>
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APPLICATION METHOD

1. SURFACE PREPARATION
Ensure that the concrete surface is clean and sound. Remove all contaminants including coatings, grease, oil, dirt, excessive laitance, salts and unsound material by grinding, hammering, etc. Where necessary degrease with chemical degreaser.

Any structural cracks should be injected with Condur SC or Contite PUE300/301 resin injection material.

Note: Unsound deteriorated concrete that occurred as a result of corrosion of rebars, needs to be removed to behind rebar. Corroded rebar to be cleaned with rust remover. Apply Congard Zinc or Congard ST on cleaned rebar as a corrosion protective coating. Apply Condur EA2 as a bonding bridge on the prepared concrete surface. Apply Conpatch 600 Series over Condur EA2 bonding bridge to bring back the profile of concrete. In the case of porous substrates finish the surface defects such as pinholes with Condur FC.

2. PRIMING
Mix part A and part B of Condur CF (HP) Impregnation and apply at 0.2 litre/m² (or) 0.22 kg/m² by roller or brush. The pot life is typically 50-60 minutes primer will dry within 2-6 hrs.

Note: If substrate moisture is >4%, use Floorgard Moisture Barrier as primer. Refer to TDS for more information.
3. MIXING
Part A : Part B = 2 : 1 by weight
Mix Part A and B of Condur CF (HP) Impregnation together for at least 3 minutes with a slow speed mixer (max. 300 rpm). Avoid aeration while mixing. Mix only the amount that can be used within the pot life.
Condur CF (HP) Impregnation should be applied only after 12 hrs minimum curing of Condur CF (HP) Impregnation used as primer.

4. CONDUR CF(HP) FABRIC APPLICATION
- Apply the first layer Condur CF (HP) Impregnation to the concrete substrate with a roller or brush at the coverage rate of 0.65 kg/m²
- Apply the precut Condur CF (HP) Fabric firmly over the Condur CF (HP) Impregnation and remove entrapped air by rolling the surface of Condur CF (HP) Fabric 2-3 times in the direction in which it is being placed. This ensures proper impregnation of the Condur CF (HP) Impregnation into the Condur CF (HP) Fabric.
- After 2-6 hrs @23°C, roller apply a second layer of Condur CF (HP) Impregnation at the coverage rate of 0.25 kg/m² to completely seal the surface of Condur CF (HP) Fabric.

Note: Rough substrates consume more material. In the case of additional layers of Condur CF(HP) Fabric, the previous applied layer of Condur CF(HP) Fabric & Impregnation should be cured for at least 24 hrs prior to the second layer application.
- Full cure of the epoxy resin takes 7 days at 23°C at lower temperatures full cure will require longer time.
- Finish with a coating if required such as Elastoclad (UV resistant 100% acrylic elastomeric anti carbonation coating).

Note: Condur CF (HP) system should only be applied by specialist applicators who have had training in the installation of this system. Cormix International can provide such training & a list of approved applicators.

Notes on Applications and Limitations
Samples: Witness samples should be made at site and tested in a laboratory to ensure the material meets the responsible designer’s requirement.
The substrate & ambient temperature should be between 8°C and 36°C. The substrate temperature should be at least 3°C above the dew point.
The product should only be used by experienced professionals. In hot or cold conditions precondtion the product 24 hours before use.
Protect from rain for 24 hours after application. Consult a structural engineer for load calculations & design.
A qualified structural engineer must be responsible for designing the works. Care must be taken is selecting suitably experienced and trained contractors. Protect from permanent exposure to direct sunlight moisture & or water.

CONSUMPTION of Condur CF (HP) Impregnation
First layer on concrete: 0.65 kg/m². Following layers on Condur CF (HP) Fabric CJ30T: 0.25 kg/m².

PACKAGING
Condur CF (HP) Fabric CJ30T (300 gm) = 0.5 m x 100 m per roll.
Condur CF (HP) Fabric CJ30T (300 gm) = 1 m x 100 m per roll.

STORAGE & SHELF LIFE
The shelf life is 24 months from date of manufacture if stored correctly in original undamaged packaging at temperatures between 5°C-36°C protect from sunlight.

HEALTH & SAFETY
Refer to the MSDS available from Cormix International Ltd.

TECHNICAL SERVICE
The Cormix International Technical Service Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

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