

Condur[®] CF (HP) Fabric

UNIDIRECTIONAL WOVEN HIGH PERFORMANCE CARBON FIBRE FABRIC

DESCRIPTION

A unidirectional woven high performance Carbon Fibre Fabric for structural strengthening.

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 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.

APPLICATION METHOD

1. Surface preparation

Ensure that the concrete surface is clean and sound. Remove all contaminates 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** epoxy 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** 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 TDS for More info.

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 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 precondition 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.

Condur[®] CF (HP) Fabric

UNIDIRECTIONAL WOVEN HIGH PERFORMANCE CARBON FIBRE FABRIC

Properties of Condur CF (HP) Fabric CJ30T

| Properties | Result | Test Method |
|-------------------------------------|-----------------------|-------------|
| Roll Length | Flexible | - |
| Fabric Weight | 300 gm/m ² | - |
| Fabric Width | Flexible | - |
| Fabric Weave | Unidirectional | - |
| Tensile Strength | 4700 Mpa | ASTM D 3039 |
| Tensile Modulus of Elasticity (min) | 240 GPa | ASTM D 3039 |
| Ultimate Rupture Strain (min) | 1.7 % | ASTM D 3039 |
| Nominal Thickness (minimum) | 0.166 mm | - |

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.

QUALITY ASSURANCE

ISO 9001: 2008 verified by TUV Nord.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc. Cormix does not take responsibility nor need to defend others testing that does not achieve the published data. The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product. Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

Cormix International Limited

89 Romklao Rd., Sansab, Minburi, Bangkok 10510

Tel. (66 2) 917 3955-8, 543 8890

Fax. (66 2) 917 3959, 543 8891

<http://www.cormix.com>

E-mail: info@cormix.com

NOTE : Every reasonable precaution is taken in the manufacture of all CORMIX-products to ensure that they comply with CORMIX's high standard of quality. The recommendations and properties of the product are based upon what is believed to be the most reliable information available, and are not intended as recommendations which infringe on other patents. Although all CORMIX-products are subject to rigid quality tests, no specific guarantee can be given, because results depend, not only on quality, but also on other factors beyond our control. We welcome therefore consultation in the event of doubt concerning application, or performance, and point out those oral recommendations, which vary from the instructions contained herein, are not binding without written confirmation by CORMIX. All transactions shall be subject to our terms and conditions of sale-delivery-and-service. This data sheet supersedes the previous one and a reprint may be issued without notice to supersede this edition, as and when deemed necessary. The information given in this leaflet is to the best of our knowledge true and reliable. Field service where provided does not constitute supervisory responsibility. Our guarantee is therefore limited to the quality of materials delivered.