Condur ® CF Fabric

UNIDIRECTIONAL WOVEN CARBON FIBRE FABRIC

DESCRIPTION

A unidirectional woven 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
- Significally 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. Condur CF Fabric Application

- Apply the first layer **Condur CF Impregnation** to the concrete substrate with a roller or brush at the coverage rate of 0.6 kg/m^2
- Apply the precut **Condur CF Fabric** firmly over the **Condur CF Impregnation** and remove entrapped air by rolling the surface of Condur CF Fabric 2-3 times in the direction in which it is being placed. This ensures proper impregnation of the **Condur CF Impregnation** into the **Condur CF fabric**.
- After 2 -4 hrs @23ºC, roller apply a second layer of **Condur CF Impregnation** at the coverage rate of 0.25 kg/m^2 to completely seal the surface of **Condur CF Fabric**.

  Note : *In the case of additional layers of* ***Condur CF Fabric****, the previous applied layer of* ***Condur CF Fabric*** *on* ***Condur CF 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 23ºC 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 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 8ºC and 36ºC.The substrate temperature should be at least 3ºC 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 Fabric

UNIDIRECTIONAL WOVEN CARBON FIBRE FABRIC

Properties of Condur CF Fabric - CJ23T

Properties	Result	Test Method
Roll Length	50 Mtr	-
Fabric Weight	230 gm/m^2	-
Fabric Width	60cm	-
Fabric Weave	Unidirectional	-
Tensile Strength	4900 Mpa	ASTM D 3039
Tensile Modulus of Elasticity (min)	230 GPa	ASTM D 3039
Ultimate Rupture Strain (min)	1.5 %	ASTM D 3039
Nominal Thickness (minimum)	0.111 mm	-

Properties of Condur CF Fabric - CJ30T

Properties	Result	Test Method
Roll Length	100Mtr	-
Fabric Weight	300 gm/m^2	-
Fabric Width	50cm	-
Fabric Weave	Unidirectional	-
Tensile Strength	4500 Mpa	ASTM D 3039
Tensile Modulus of Elasticity (min)	230 GPa	ASTM D 3039
Ultimate Rupture Strain (min)	1.5 %	ASTM D 3039
Nominal Thickness (minimum)	0.167 mm	-

Laminate Properties (related to effective laminate thickness)

Properties		Condur CF Fabric CJ30T	Test Method
Impregnation Resin		Condur CF Impregnation	-
Laminate Thickness (Norminal)		1 mm	-
Tensile Modulus	Average	275 GPa	ASTM D 3039
Tensile Strength	Average	3018 MPa	ASTM D 3039

CONSUMPTION of Condur CF Impregnation

First layer on concrete: 0.6 kg/m^2.
Following layers on **Condur CF Fabric**: 0.25 kg/m^2.

PACKAGING

Condur CF Fabric CJ 23T (230 gm) = 60cm x 50 mtr per roll.
Condur CF Fabric CJ 30T (300 gm) = 50cm x 100 mtr 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^{o}C-36 ^{o}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.

Condur ® CF Fabric

UNIDIRECTIONAL WOVEN CARBON FIBRE FABRIC

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 advice offered.

CONTACT DETAILS

Exclusive Distributor for Cormix International Ltd.

CREST CORMIX PTY. LTD.
13 Newmarket Lane, Epping, Victoria 3076, Australia
Tel. +61 3 9945 2700
Fax. +61 3 9945 2799
http://www.crestcormix.com.au
E-mail: enquiries@crestcormix.com.au