



# DURAL COMP CFW

UNI-DIRECTIONAL 300g/m<sup>2</sup> CARBON FIBER TEXTILE FABRIC FOR STRUCTURAL STRENGTHENING

## APPEARANCE

Black textile fabric

## LENGTH

50m and 100m

## WIDTH

500mm

## SHELF LIFE

10 Years

## STORAGE CONDITIONS

Store in dry conditions at 4°C to 35°C

## DESCRIPTION

DURAL COMP CFW 300 is a carbon fiber woven fabric with high tensile strength, uni-directional 300g/m<sup>2</sup> weight. It is bonded onto existing structures as external reinforcement using Dural 632 epoxy resin as an adhesive.

## APPLICATION RANGE

**Load Increase:** Increase in loads in commercial buildings; increase in traffic weight and volume on bridges; installation of heavy equipment in industrial facilities, increase in vibration of structures.

**Improve Structural Condition:** Reduce deformations; reduce stresses in existing structural elements; limit or arrest crack propagation.

**Seismic Retrofitting:** Columns wrapping reinforcement for improving ductility and shear strength; masonry walls reinforcement for improving out-of-plane bending and in-plane shear strengths; beam and slab reinforcement.

**Change Structural System (Structural Alterations):** Removal of walls or columns; removal of slab sections for openings.

**Aging and Damaged Structures:** Aging of old deteriorated construction materials; corrosion of steel bars in concrete; vehicles collision impact on structures (impact damage).

**Design or Construction Errors:** Lack of adequate well-detailed reinforcing bars; inadequate member cross section; substandard concrete material strength.

## PRODUCT CHARACTERISTICS

- High strength, high toughness, high modulus.
- Soft and flexible, light self-weight, easy to install.
- Long shelf life and aging resistance.
- Acid, alkali and salt resistance.
- Seismic resistance.
- Environmentally friendly.
- Can be used for shear strengthening, confinement strengthening, flexural strengthening.

## TECHNICAL PERFORMANCE

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Tensile Strength (ASTM D4018)	4137 MPa
Tensile Modulus (ASTM D4018)	242 GPa
Elongation (ASTM D4018)	1.7%
Density	1.81 g/cm <sup>3</sup>
Fibre Diameter	7.2 microns
Fibre Content	95%
Application Temperature	+5°C to +35°C (Dural 632 epoxy resin)

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## APPLICATION INSTRUCTIONS

**Surface Preparation:** Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint efflorescence, oil and all other contaminants. Mechanically abrade the surface to expose the main aggregate and achieve a surface profile equal to CSP (Concrete Surface Profile) 1 to 3 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Repair uneven and weak zones. All sharp edges must be rounded. Maximum deviation of the surface not to exceed 5mm over a 2m length. Test tensile strength of the concrete substrate at the application position (strength measured less than 1.5 MPa must be reported to the Engineer).

**Priming of Concrete Substrate:** Prepared concrete substrate to be primed with Dural 632.

**Application of Dural Comp CFW:** Apply the Dural 632 resin on the element to be reinforced. Press the Dural Comp CFW into the wet resin. Ventilate with a profiled roller, then immediately apply a layer of Dural 632 laminating resin on the carbon fibre textile. The consumption of Dural 632 resin varies depending on the roughness and porosity of the surface (estimated consumption: 0.5 litres to 1 litre per m<sup>2</sup>).

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## TRANSPORTATION AND STORAGE

This product should be stored in a dry, cool and well-ventilated environment. It should not be exposed to rain, or subjected to impact by sharp objects. During transportation and storage, carbon fibre materials shall not be squeezed or compressed, so as to avoid carbon fibre damage, and shall not be exposed to direct sunlight and/or rain.

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## PRECAUTIONS / LIMITATIONS

- A qualified structural engineer should be responsible for the design of the retrofit project.
- Dural Comp CFW must only be installed by suitable experienced professional applicators.
- Carbon fiber is conductive - safety measures should be taken to prevent electric shock.
- In areas that will be exposed to sunlight, the material should be covered with UV-resistant coatings within 7 days after the application.
- Dural Comp CFW can be coated with cementitious mortars or coating materials for aesthetic and/or protection purposes.
- Carbon fibre fabrics should not be bent during transportation, handling and cutting process.
- The construction workers should take all necessary protective measures (such as wearing masks, gloves, goggles, etc.).
- Safety measures should be taken on site to keep the site clean and prevent fire hazards.