



DURAL COMP CFP

UNI-DIRECTIONAL CARBON FIBER LAMINATE FOR STRENGTHENING **EUCLID CHEMICAL**

APPEARANCE

Black laminate

LENGTH

100m

WIDTH

Regular width is 50mm and 100mm, other widths can be customised.

SHELF LIFE

10 Years

STORAGE CONDITIONS

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

BRAIDING

0° (Uni-directional)

DESCRIPTION

DURAL COMP CFP is a high strength, high modulus uni-directional carbon fiber laminate. It is bonded onto the structure as external reinforcement using Dural 617NS epoxy resin as the 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.
- Light self weight, easy to install.
- Long shelf life and aging resistance.
- Acid, alkali and salt resistance.
- Seismic resistance.
- Environmental-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 (EN 2561)	2900 MPa
Tensile Modulus (EN 2561)	150 Gpa
Elongation at Break (EN 2561)	2%
Thickness	1.2mm
Temperature Resistance	<150°C Please note that temperature limitations of the epoxy adhesive may be the limiting factor
Fiber Content	70.4%
Density	1.65g/cm ³

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APPLICATION INSTRUCTIONS

Surface Preparation: Remove laitance by scabbling or grit blasting to a sufficient depth to expose main aggregate, surface profile equal to CSP (Concrete Surface Profile) 1 to 3 in accordance with ICRI Guideline 310.2. After preparation, the bonding surface must be clean, dry, sound and level.

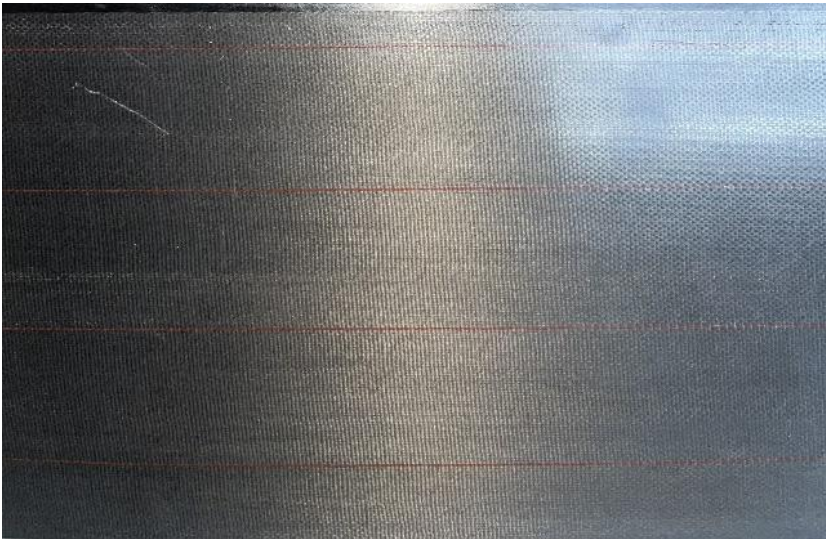
Repair uneven and weak zones. Maximum deviation of the surface not to exceed 5mm over a 2m length. Test tensile strength of concrete at the application position (strength measured less than 1.5 MPa must be reported to the Engineer).

Priming of Concrete Substrate: Prepared concrete substrate to be primed with relevant epoxy primer based on substrate condition.

Application of Dural Comp CFP: Measure and cut the Dural Comp CFP strips to exact required length as per structural engineer's design.

Prepare Dural 617NS Non-sag Adhesive in accordance with the manufacturer's instructions. Carefully remove the protective film on the back of the Dural Comp CFP plate (refer to picture 1 - note the red lines on the protective film) to expose the textured finish (refer to picture 2).

Apply mixed adhesive to the textured side of the Dural CFP strips in a triangular wedge with apex of the adhesive in the centre of the strip. Install the CFP strips onto the primed concrete using a roller or a straight edge, exerting constant pressure, squeezing out excess adhesive. Remove all squeezed out adhesive immediately. Final thickness of glue line of the Dural 617NS not to exceed 3mm.



Picture 1 - Dural CFP plate with protective film intact. Note the smooth surface with the red lines.



Picture 2 - Dural CFP plate with protective film removed. Note the textured finish.

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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 fiber materials shall not be squeezed or compressed, so as to avoid carbon fiber damage, and shall not be exposed to direct sunlight and/or rain.

PRECAUTIONS / LIMITATIONS

- A qualified structural engineer should be responsible for the design of the retrofit project.
- Dural Comp CFP 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 CFP can be coated with cementitious mortars or coating materials for aesthetic and/or protection purposes.
- Dural Comp CFP 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.

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