CARBON FIBER LAMINATE

DURAL COMP CFP

UNI-DIRECTIONAL CARBON FIBER LAMINATE FOR STRENGTHENING

EUCLID CHEMICAL

MODEL
HM-1.2T

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)

PACKAGE
This product uses carton package. When the width is 50mm, two rolls in one carton; when the width is 100mm, one roll in one carton

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.

Chance 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 collusion 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.
- High temperature resistance.
- Acid, alkali and salt resistance.
- Seismic resistance.
- Environmental-friendly.
- Can be used for shear strengthening, confinement strengthening, flexural strengthening.

TECHNICAL PARAMETERS

MODEL	STRENGTH GRADE	REGULAR WIDTH	THICKNESS
HM-1.2T	Grade I	50mm, 80mm, 100mm, 120mm	1.2mm
*HM-1.4T	Grade I	50mm, 80mm, 100mm, 120mm	1.4mm
*HM-2.0T	Grade I	50mm, 100mm	2.0mm
*HM-3.0T	Grade I	20mm, 50mm	3.0mm

* Available on special order

TECHNICAL PERFORMANCE

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

Tensile Strength (ASTM D3039)	2743 MPa
Tensile Modulus (ASTM D3039)	171 Gpa
Elongation at Break (ASTM D3039)	0.015
Flexural Strength (ASTM D7264)	2164 MPa
Thickness	1.2mm
Temperature Resistance	>150°C
Fiber Content	≥65%
Density	1.6g/cm^3

APPLICATION INSTRUCTIONS

Surface Quality: Minimum concrete surface tensile strength 1.5 MPa.

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.

Priming of Concrete Substrate: Prepared concrete substrate to be primed with Dural 618R.

Application of Dural Comp CFP: Lightly sand the Carbon Fibre Plates with 80-grit sandpaper to remove the gloss appearance. Solvent wipe / clean with Thinner # 76 MEK. Apply the Dural Comp CFP to the primed concrete substrate with Dural 617NS in accordance with the structural engineer design.

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 at the latest after the application.
- Dural Comp CFP can be coated with cementitious mortars or coating materials for aesthetic and/or protection purposes.
- Carbon fiber plates 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.