



High Strength Carbon Fiber

USES

Used for reinforcement against bending shear of such structures as elevated floor slabs, bridges, piers and building structures. It is so light that the weight load to the structures can be neglected, while its physical properties make the retrofit work easy.

DESCRIPTION

KOR-CFW is a Uni-Directional (UD) woven fabric designed for concrete structures reinforcing and strengthening.

PHYSICAL PROPERTIES

Fiber areal weight	300 & 600 g/m ²
Fiber design thickness	0.167 & 0.334 mm
Fiber tensile strength	4,900 Mpa
Fiber tensile e-modulus	230 Gpa
Strain at break of fibers	1.5 %
Shelf life	Unlimited
Packaging	1 roll in plain cardboard

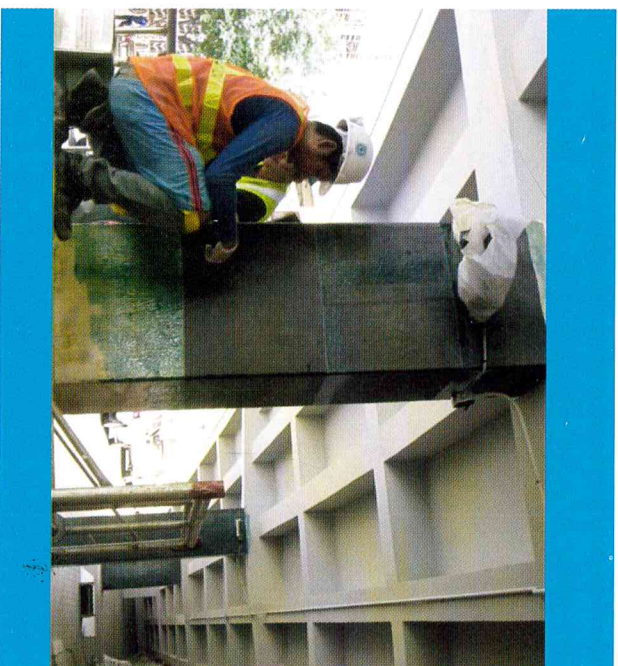
SURFACE PREPARATION

Expose firm surface of a given substrate by removing paints, concrete plaster, contaminations or deteriorated areas using a grinder or similar tool to ensure the Carbon UD Fabric will have sufficient adhesion. Make the concrete surface even by removing protruding parts. The appropriate surface roughness of a Carbon UD Fabric is 1mm or less. Corners are rounded by grinding within R-10mm. When a KOR-CFW300 high tensile modulus Carbon UD Fabric is used, corners are rounded with R-20mm. Thoroughly remove grinding dust with compressed air or a rug. Dry sufficiently when cleaned with water. Surface grinding and cleaning are critical to ensure work quality.

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KOR-CFW



SURFACE REPAIR

Fill conspicuous dents on the concrete surface with a high strength mortar, epoxy mortar etc. Finish the mortar surface roughness within 1mm or less. Apply rust-proofing (anti-corrosive) chemical to exposed steel rods. Fill cracks with epoxy resin or similar materials. Apply water-proofing or guiding materials to sections where water is leaking.

SURFACE PRIMER

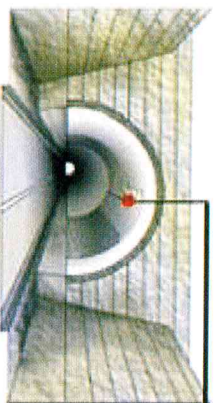
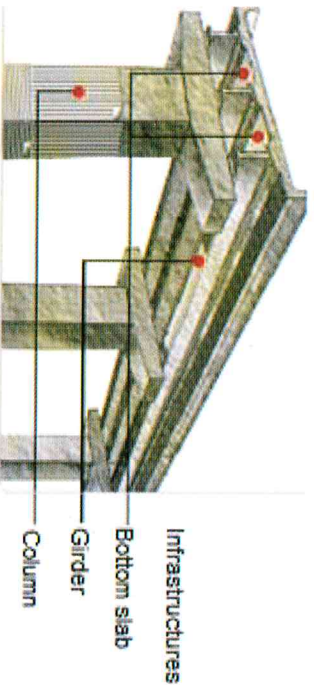
Select an appropriate primer in consideration of the temperature after checking the surface state (dust, moisture, etc.). Determine the amount of the primer to mix for one batch considering the area to apply, time required, manpower and skill levels. Mix primer using an electric mixer for two to three minutes till it reaches an even color after mixing the base and hardening materials with a weight based ratio of 2 to 1. Move the mixed primer to an appropriate container and apply it evenly with a coating roller. Apply at a thickness of 250g/m² though varying depending on the surface conditions.

FILLING OF SURFACE IRREGULARITIES

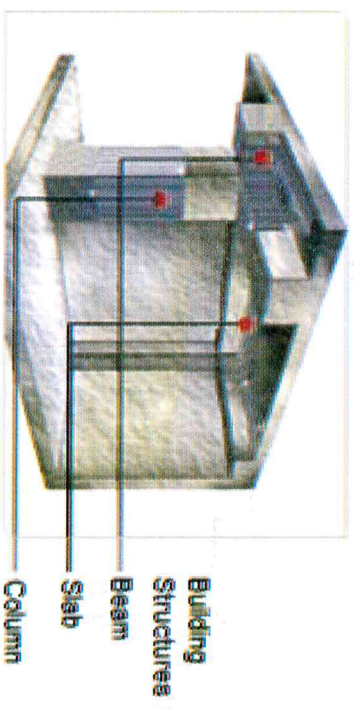
Select an appropriate epoxy putty considering the adhesiveness, viscosity and curing or hardening speed. Smoothly finish the surface by filling up holes or dents with putty using a rubber or plastic spatula.

APPLICATION OF CARBON FABRIC

Determine the resin type after establishing implementation plans considering the area, shape, workforce, work conditions and curing time. Cut the Carbon UD Fabric into suitable lengths (usually 3~4m) using a pair of scissors or cutter. Mix the resin base and curing agent using an electric mixer for two to three minutes till it turns an even color after mixing the base and curing material at a weight ratio of 2 to 1. Move the mixed resin to an appropriate container and apply evenly with a coating roller. Attach the Carbon UD Fabric with the release base paper intact on the prime resin coat area. Detach the release base paper after fixing the sheet tight on the surface with a rubber spatula. Press the sheet hard along the fiber texture with a roller till the prime coat resin soaks through the Carbon UD Fabric. Attach the sheet with 10cm or longer overlapping space in the fiber length direction. Apply pressing as mentioned above. Overlapping in the direction of width is not required. Coat the Carbon UD Fabric surface with the mixed dipping resin within 30 minutes to three hours from pressing. The top coat needs be applied evenly on the Carbon UD Fabric surface by moving the roller in the fiber length direction only. When two or more layers of Carbon UD Fabric are applied, let the first top coat dry fully before proceeding to the next layer. Generally, one coat per day is the normal. Correct the first layer's defective areas before applying the second layer.



Tunnel and
Other Structures
Large chimney
Waterway
Telecom post



CURING AND FINISH COATING

The following curing period is required to obtain the design strength of the Carbon UD Fabric. Cover the outdoor implementations to prevent contamination from rain, wind or dust during the curing period.

The coverings should not touch the surface directly.

Encapsulation Resin	Standard Type	Summer Type
Temperature (°C)	15 – 25 °C	25 – 35 °C
Curing Period	7 Days	7 Days

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