Repair, Reinforcement and Restoration / Structural Reinforcement Products

CARBOFİX® TEX U 612

600 gr/m^2 Carbon Fiber Unidirectional Fabric (12K Weaving Density)

DESCRIPTION

Structural reinforcement fabric made of mainly **carbonized acrylic fiber**, **tar** and **thermoplastic yarn**. Thanks to its advanced technology, it is 5 times lighter however 3 times more resistant to stress than steel and is one of the most robust materials known. It can easily be shaped thanks to its soft fiber structure and gains a rigidity with the epoxy resins it is used with.

APPLICATION AREAS

- Indoor and outdoor,
- Strengthening buildings against earthquakes,
- Repair and strengthening of columns, beams and slabs of light - medium damaged structures,
- Reinforcing vaults and arches,
- Repair and reinforcement of corroded and damaged bridges, viaducts and overpasses,
- Increasing safety measures in excavation areas,
- Restoration and repair of historical monuments.

TECHNICAL PROPERTIES

Color	Black
Fiber Type	Warp direction carbon yarn, weft direction thermoplastic yarn
Fiber Density	1.78 g/cm^3
Weight	600 ± 5% gr/m^2 (TS EN 12127)
Weight Ratio in 0° (Warp) Direction	99%
Weight Ratio in 90° (Weft) Direction	1%
Warp Density	36.50 ± 5% ends / 10 cm (TS 250 EN 1049-2)
Weft Density	10.00 ± 5% ends / 10 cm (TS 250 EN 1049-2)
Fabric Pattern / Orientation	Unidirectional (TS 1635 ISO 2113)
Weaving Density	12K Weaving Density
Roll Size	Width 0.50 ± 2.5% meters x Length 50 meters
Tensile Strength	> 5.500 MPa
Modulus of Elasticity	> 240.000 MPa
Elongation at Break	1.8%

ADVANTAGES

- Increases the flexing capacity of the wrapped columns to a large extent and prevents fractures in the columns.
- Resistant to corrosion, extends the life of the building.
- Does not add extra weight to the structures.
- Very thin, does not lose space.
- Is a stronger but lighter reinforcement system than steel. It has no corrosion problem compared to steel.
- Easy to shape.
- When wrapped around the stirrup tightening areas of the column, acts as an additional stirrup and thus increases the shear capacity of the column.

PREPARATION OF THE SURFACE

- The surface must be cured.
- The surface must be clear of materials which prevent bonding, such as dust, oil, paint, curing agents, detergents, mold release oils and silicone.
- The surface must be smooth. If there are significant corrosion or weak parts on the columns, break the concrete and clean the iron reinforcement of rust and repair with **REPOX 690T Epoxy Based Double Component Thixotropic Solvent Free Installation Putty and Repair Mortar** to obtain a smooth and solid surface.

APPLICATION

- Cut CARBOFIX Tex U 612 with special industrial shears in line with the project.
- Apply **REPOX 410 T Epoxy Based Thixotropic Adhesive and Mounting Putty** for vertical and overhead applications, **REPOX 400 Epoxy Based Concrete Reinforcement Resin and Adhesive** for horizontal applications to the concrete surface.
- Apply **REPOX 400** or **REPOX 410T** to the surface with a roller, trowel or spatula. The thickness should be between 0.5 – 3 mm.
- Adhere CARBOFIX Tex U 612 in appropriate size with a spatula or roller in a way that there is no air gap while the epoxy adhesive is still wet, Remove the epoxy resin from the bottom over the carbon fiber with a serrated roller. Apply to the entire surface. If the epoxy resin is insufficient, repeat the application and pull the epoxy resin to the upper level again and saturate the carbon fiber fabric with resin.
- Apply the second layer of adhesive on the fibrous polymer fabric adhered to the surface with a roller in the direction of the fibers. In multilayer fiber polymer applications, use 700-800 gr/m^2 adhesive between layers.
- In order to apply plaster on it, sprinkle silica sand while the epoxy adhesive is still wet after the application of the last layer of Carbofix Tex U 612.
- **Wet Application Method:** Wet application method can be preferred for the application of dense knitted fiber fabrics weighing more than 300 g/m^2. In this method, saturate CARBOFIX U 612 with **FİXA**'s suitable epoxy adhesive mortar in a horizontal area and while it is still wet, adhere to the previously primed and dried surface manually so that there is no air gap.
- If it is necessary to heat the application area, do not use gas, oil, paraffin or similar fossil fuel heaters. Use only electric heater systems blowing warm air.
- Use the mixture in maximum 30 minutes at average +23°C. Full curing and mechanical and chemical resistance is reached after 7 days.

CAUTION

- Make sure that the carbon fiber fabric is completely covered after application.
- Avoid application at temperatures below +10°C and above +30°C.
- Mix epoxy products with a low speed mixing drill. Never mix by hand or with a trowel. Do not add water, solvent etc. to the mixture.
- Working and hardening times of epoxy resin based products depend on ambient and ground temperature. At low temperatures, viscosity increases, chemical reaction slows down, thus pot life and working time are extended. At high temperatures, the opposite is the case.
- Avoid application on frozen areas, on areas under risk of freezing in 24 hours or on areas open to direct sunlight or wind.
- Do not touch for at least 24 hours after the application and prevent water contact for 48 hours.

PACKAGING

Carton box (1m width x 50m length

HEALTH AND SAFETY

As with all chemical products, avoid contact with food, skin, eyes and mouth during use and storage. In case of contact, wash immediately with plenty of water and soap, and if swallowed, consult immediately a doctor. During application, wear work clothes, protective gloves, goggles and masks in accordance with occupational health and safety rules. Do not bring food and beverage into the application areas. Do not approach the storage and application areas with fire. Ventilate the area. Store out of the reach of children.

The application instructions and technical values given for the products have been obtained in accordance with our tests and experiences in accordance with international standards at 23±2°C temperature and 50%±5% relative humidity conditions. These values may vary depending on ambient conditions. High temperatures shorten the times, low temperatures lengthen them. Before starting the application, the user should test whether the product is suitable for the application and purpose. FİXA Construction Chemicals Ltd is not responsible. This Technical Data Sheet remains valid until the next revision is published. FİXA reserves the right to change the values specified in this Technical Data Sheet, provided that the new version is published. It is the user's responsibility to check that the document is up-to-date. Please contact our sales department for more information.