

Repair, Reinforcement and Restoration / Structural Reinforcement Products

CARBOFIX® Plate

Carbon Fiber Reinforcement Plate

DESCRIPTION

Carbon acrylic fiber and **thermoplastic** yarn impregnated with epoxy resin and brought into plate form, used in the reinforcement of historical buildings, domes and reinforced concrete structures, to increase adherence and bearing strength.

APPLICATION AREAS

- Indoors and outdoors,
- Strengthening buildings against earthquakes,
- Repair and strengthening of columns, beams and slabs of light - medium damaged structures,
- To increase the bearing capacity in slabs, beams and bridges
- Reinforcement of structural elements against earthquakes in reinforced concrete structures together with carbon fiber fabric,
- Bridges, overpasses and viaducts with increased live load,
- Reduction of steel reinforcement stresses in deformed and deflected openings,
- Reinforcement of vaults and arches,
- Restoration and repair of historical monuments.

TECHNICAL PROPERTIES

Color	Black
Fiber Type	Carbon fiber
Shape	In form of plate
Length	Variable length
Product Width and Thickness	Width: 50 mm Thickness: 1,2 mm Width: 50 mm Thickness: 1,4 mm Width: 100 mm Thickness: 1,2 mm Width: 100 mm Thickness: 1,4 mm
Fiber Length (Adherence)	Variable
Elongation at Break	< %1,7 (ASTM D3039)
Tensile Strength	> 2.400 MPa (ASTM D3039)
Modulus of Elasticity	> 155 GPa (ASTM D3039)
Hardness	91,6 HRP
Water Absorption	< %0,1

ADVANTAGES

- Very high tensile strength and modulus of elasticity.
- Easy to transport and apply.
- Since it is light and thin, it does not impose a load on the structure and does not form a cross section.
- It can be cut to the desired size with industrial scissors.
- No corrosion problem compared to steel.
- Very high chemical resistance.
- Excellent fatigue strength.

APPLICATION

PREPARATION OF THE SURFACE

- The surface must be cured.
- The surface must be clear of weakly adhered parts and materials which prevent bonding, such as dust, oil, tar, 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.

UYGULAMA BİLGİLERİ

- Cut CARBOFIX Plate with special industrial shears in line with the project. Plates must be clean and dry. Wipe the plates that need to be cleaned with thinner and let the thinner to dry.
- Apply **REPOX 410T Epoxy Based, Thixotropic Adhesive and Mounting Putty** or **REPOX 690T Epoxy Based, Double Component, Thixotropic, Solvent Free Mounting Putty and Repair Mortar** evenly on the plate and on the wall to be adhered with a trowel in the width of the plate and wait for the applied mortar to shrink a little. Adhere the plate in such a way that there is no air gap, compress with a hard plastic roller to ensure that there are no air bubbles along the plate, wipe the excess mortar around the plate with a clean cloth.
- Sprinkle silica sand to create roughness on the surface to facilitate the adhesion of the plaster on CARBOFIX Plate while the epoxy adhesive is still wet, after the bonding process, following the application of FIXA's suitable epoxy based primer material on the carbon plates.
- 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 plates are completely covered after application.
- The plate works only in the direction of fiber length. It has no side strength.
- Avoid applications at temperatures below +10°C and above +30°C.
- If the product stays below 0°C for a long time, crystallization may occur. Dissolve the crystals by bringing the product back to room temperature before use.
- Epoxy products must be mixed with a low speed mixing drill. They should never be mixed by hand or with a trowel. No external water, solvent etc. should be added 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 in areas that are frozen, at risk of freezing within 24 hours or open to direct sun and wind.
- Do not touch for at least 24 hours and avoid water contact for 48 hours.

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. FIXA Construction Chemicals Ltd is not responsible. This Technical Data Sheet remains valid until the next revision is published. FIXA 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.