

**Repair, Reinforcement and Restoration /
Structural Reinforcement Products**

CARBOFIX® Grid 300/2x2

Carbon Fiber Textile Reinforcement

DESCRIPTION

Technical **textile reinforcement** product made of **carbon fiber yarn**, used in the reinforcement of historical buildings, with a special grid-shaped structure that increases adherence and bearing strength. It weights 300 gr/m², it can easily be shaped with its soft yarn-like structure, and gains a rigid structure with the epoxy resins it is used with.

APPLICATION AREAS

- Indoor and outdoor,
- Restoration and repair of historical monuments increasing the carrying capacity of vaults, walls and domes of historical buildings,
- Reinforcement of masonry walls,
- Increasing safety measures in excavation areas,
- Retrofitting of historical buildings in accordance with the original,
- Ground stabilization,
- Structural reinforcement of elements such as columns, beams and slabs.

TECHNICAL PROPERTIES

Color	Black
Fiber Type	Carbon fiber
Fiber Density	1.80 g/cm ³
Weight	300 ± 5% gr/m ² (TS EN 12127)
Weight Ratio in 0° (Warp) Direction	50%
Weight Ratio in 90° (Weft) Direction	50%
Weaving Density	24K
Design	20 x 20 mm gap distance
Length	Standard
Width (TS 3427 ISO 5025)	1000 mm ± %2.50
Tensile Strength	> 4900 MPa
Modulus of Elasticity	≥ 240000 MPa

ADVANTAGES

- Suitable for historical buildings.
- Easy to apply, has a special adherence enhancing coating to work together with reinforcement mortars.
- Used for floor and surface stabilization.
- Flexible, provides resistance against tensile stresses.
- No corrosion problem compared to steel.
- Has very high chemical resistance.

PACKAGING

Standard

APPLICATION

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.
- Repair the surface to obtain a smooth and even application surface. If there are significant corrosion or weak areas on columns, chip away the damaged concrete, clean the reinforcing steel of rust, and use suitable **REPOX series Epoxy Repair Mortars** to achieve a sound and uniform surface.

APPLICATION

- Cut CARBOFIX Grid to the required dimensions using special industrial scissors in accordance with the project and prepare for installation, prior to application.
- Use **REPOX 400 Epoxy-Based Thixotropic Adhesive for Fiber-Reinforced Polymer Systems** or **REPOX 405 Epoxy Adhesive for Fiber-Reinforced Polymer** for application and apply to the concrete surface.
- If the surface is damp, choose **REPOX 400H Epoxy-Based, Moisture-Tolerant, Thixotropic Adhesive for Fiber-Reinforced Polymer Systems**.
- Apply **REPOX 400** or **REPOX 405** to the surface using a roller at an application thickness of 0.8–1 mm.
- Bond the pre-cut CARBOFIX Grid while the epoxy adhesive is still wet, using a roller without leaving air voids. Subsequently, use a grooved roller to allow the epoxy resin beneath to pass through the carbon fibers. Treat the entire surface in this manner. If the epoxy resin is insufficient, reapply and ensure full saturation of the carbon fiber fabric.
- Apply the second adhesive layer with a roller over the bonded fiber-reinforced polymer fabric in the fiber direction. For multi-layer FRP applications, use 600 g/m² adhesive between layers.
- To allow plaster application, broadcast silica sand onto the surface while the final epoxy layer is still wet after the last CARBOFIX Grid application, creating a rough profile to improve adhesion.
- If heating of the application area is required, do not use gas, oil, paraffin, or similar fossil-fuel heaters. Use only electric warm-air heating systems.
- At approximately +23°C, consume the mixture within a maximum of 30 minutes. Full mechanical and chemical resistance is achieved after 7 days of curing.

CAUTION

- Make sure that the textile reinforcement 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 surface 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.

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.