

MasterStrength™ NET

Alkali-Resistant Glass or Carbon Fibre Bi-directional Mesh for Structural Reinforcement

Material Description

MasterStrength™ NET is a two-directional alkali-resistant glass or carbon fibre mesh in **MasterStrength™ FRP** system, for strengthening reinforced concrete and masonry structures. It can be applied in combination with structural resins of the **MasterStrength™** line, with structural cementitious/lime based mortar of the **MasterCrete™** line.



Areas of Application

- Increasing the flexural and shear strength of reinforced concrete beams.
- Increasing the flexural strength of reinforced concrete slabs.
- Increasing the shear strength of reinforced concrete walls.
- Enhancement of the ductility and strength of masonry walls.
- Increasing the flexural strength of masonry arches.
- Increasing the flexural strength of masonry slabs.
- Increasing the flexural strength of masonry domes and vaults.

Characteristics and Benefits

- Very light and easy to handle.
- It can be used with cementitious or lime based structural repair mortar on damp and wet substrates.
- Excellent resistance towards all aggressive chemicals in concrete such as alkali hydroxide, chlorides and sulphates.
- Resistant to high temperatures when used with cementitious/lime based structural repair mortar.
- Easy to cut and re-shaped.

Technical Properties

	MasterStrength™ NET 200/100 CFS	MasterStrength™ NET 220/100 GF
Fibre Weight	200 g/m ²	220 g/m ²
Modulus of Elasticity (ASTM D3039)	230 Gpa	65 Gpa
Elongation at Break (ASTM D3039)	% 1,40	% 2,50
Equivalent Thickness for each of the two Directions	0,048 mm	0,048 mm
Tensile Strength (ASTM D3039)	2500 Mpa	1300 Mpa
Electrical Resistivity	1,6 x 10 – 5 Ω . M Conductive	Non Conductive

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Processing Method

(A) Preparation of Substrate

The mineral based substrates (concrete, stone, brick, etc.) must be sound, clean and dry. The surface should be cleaned from all residual that reduces the substrate's adhesion such as oil, grease, rust and paraffin.

(B) Processing

The carbon/fibre mesh should be cut as indicated on design before the application. During this process, the surface of mesh should be kept clean.

- Application with **MasterStrength™ ER 4500** Adhesive: (refer to the relative adhesive's Technical Data Sheet for application details) After having applied the first layer of **MasterStrength™ ER 4500** adhesive, stretch the mesh making sure to press it two or three times in the two directions of the fibres using a roller to impregnate the mesh and eliminate the air from the resin layer. To join several strips in the longitudinal direction of the fibre, overlap them for about 20 cm in length. In correspondence of the overlapping point, apply a further coat of **MasterStrength™ ER 4500** on the external surface of the mesh layer on which the overlapped section will adhere. The second coat of **MasterStrength™ ER 4500** must be applied on the mesh surface. Having to also glue a second layer of fabric, apply the additional layer of fabric and an additional coat of adhesive following the above instructions. Under UV radiations the fibers should be coated with a UV resistant paint in **MasterShield™** range. For plastering on the fiber surface, clean and sound sand should be spread on to the fiber surface while the adhesive is still wet. After curing of adhesive any kind of plaster can be easily applied.

- Application with Cementitious or Lime Based **MasterCrete™** line: (refer to the relative mortar's Technical Data Sheet for application details) After saturating surface, the first layer of **MasterCrete™** line should be applied with an application thickness of 5- 6 mm. Apply **MasterStrength™ NET** on to the surfaces while the mortar is still wet. The fibre mesh should be stretched in two-directions and placed properly in the mortar. After this process the second layer of the structural repair mortar should be applied on the fiber mesh in between 5-6 mm. If a second layer of fibre mesh application is needed the new fiber mesh and structural repair mortar should be applied as described above procedures.

Point to Consider

- **MasterStrength™ NET** applications should be done by approved experts.
- Work clothes, protective gloves, glasses and mask defined in Labour Laws must be used during the application. Do not touch to the fibers without hand gloves.
- Consult to the **MBT Tech** Technicians for special applications aren't defined in this data sheet.

Packaging

MasterStrength™ NET 200/100 CFS

50 m² (1.00m x 50 m) roll

MasterStrength™ NET 220/100 GF

50 m² (1.00m x 50 m) roll

Storage

Store in its unopened original packaging in a cool (+5°C to +30°C), dry, well-ventilated area, away from moisture, fire, open flames, and direct sunlight.

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Health and Safety

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixture should not come into contact with skin and eyes; in case of a contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

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