



The Chemical Company

## MBT-MBRACE® FIBER

### High Strength and High Modulus Unidirectional FRP Sheets.

#### Description of Product

**MBRACE® FIBER** is carbon, glass or aramide based, high strength and high modulus unidirectional sheets in **Mbrace® FRP** System.

#### Fields of Application

**MBRACE® FIBER** C1-23, C1-30 and G-60 AR (High strength carbon and glass fiber sheets) are used in;

- Increasing the flexural and shear strength of the concrete beams,
- Increasing the flexural strength of the concrete slabs,
- Increasing the compressive strength of concrete columns,
- Enhancement of the ductility of concrete columns,
- Increasing the flexural strength of the wooden beams,
- Increasing the mechanical strengths of the masonry elements.

**MBRACE® FIBER** C5-30 (High modulus carbon fiber) is used in;

- Strengthening of high strength, cast-in-situ, precast and pre-stressed RC elements.

- Shear strengthening of high strength RC elements.

#### Features and Benefits

- Light and easy to carry.
- East to cut and re-shaped.
- Easy to design (Unidirectional fibers and similar elasticity modulus with steel).
- Good fatigue properties.

#### Application Procedure

##### Preparation of Substrate

The mineral based substrates (concrete, stone, brick, tile etc.) must be sound, clean and dry. It shouldn't be weakened by over-troweling and lack of curing. The concrete should be free of frost, curing membranes, waterproofing treatments, oil stains, laitance, friable material and dust. If there is a water leakage it must be drained or properly plugged. In case of low strength concrete ( $\sigma_{tc} < 1.5 \text{ N/mm}^2$ ), the loosen parts of concrete must be broken and the surfaces should be refilled with structural repair mortars in **Emaco® S** range. Before the adhesive application let the repair mortars cure at least 7 days at 20°C. FRP sheets should be free of oil stains and dust.

#### Technical Data

	<b>MBRACE® FIBER C1-23</b>	<b>MBRACE® FIBER C1-30</b>	<b>MBRACE® FIBER C5-30</b>
Elasticity Modulus (N/mm <sup>2</sup> )	240,000	240,000	640,000
Tensile Strength (N/mm <sup>2</sup> )	3800	3800	2650
Design Cross Section Thickness (mm)	0,117	0,176	0,190
Total Weight (g/m <sup>2</sup> )	230	330	430
Elongation at Break (%)	1,55	1,55	0,4
Width (mm)	300/600	300/600	300



# MBT-MBRACE® FIBER

In all kind of substrates **Mbrace® Primer** should be used as a primer and the adhesive application should be done in the following 24 hours.

## Application Method

**MBRACE® ADESIVO SATURANT** should be applied to the primed surfaces by using a soft roller. Application thickness should be 0.8 - 1.0 mm. Lay down **MBRACE® FIBER** on to the surfaces while the adhesive is still wet. After lying, strongly press the sheets two or three times in the longitudinal direction of the fiber using a roller or rubber spatula in order to allow **MBRACE® ADESIVO SATURANT** penetrate into the sheet and to eliminate air from the coat of resin. In the case of multiple layers of fiber, 700 - 800 gr/m<sup>2</sup> **MBRACE® ADESIVO SATURANT** should be applied between the all layers. Under UV radiations the fibers should be coated with a UV resistant paint in **Conipur®** or **Masterseal®** 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. For fire resistance, the fibers should be coated with special fire resistant coatings (**Meyco® Fireshield**, etc.).

## Watchpoints

- **Mbrace® FRP** 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 BASF Technicians for special applications aren't defined in this data sheet.

## Cleaning of Tools

After the application all tools should be cleaned with a proper detergent or solvent such as thinner.

## Packaging

C1-23 and C1-30  
45 - 90 m<sup>2</sup> (0.30 - 0.60 m x 150m) rolls

C5-30  
15 m<sup>2</sup> (0.30 x 50m) rolls

G60-AR  
50 m<sup>2</sup> (0.50 x 100m) rolls

## Storage

Store in original container in cool (+5°C - +30°C) and dry indoor conditions.

## Health and Safety Precautions

It is dangerous to get close to the store areas with fire. The store must be well ventilated. Work clothes, protective gloves, glasses and mask defined in Labour Laws must be used during the application. Avoid from material to contact with skin and eyes. In case of contacting wash your skin with water and go to doctor immediately

Don't bring any food and drink to the application area. Store the material away from the children. For further information Material Safety Data Sheets should be read.

## Disclaimer

This information and all further technical advice are based on our present knowledge and experience. BASF Yapı Kimyasalları San. A.S. is only responsible for product's quality. The results, caused by wrong application and/or application methods and fields exception of technical advices on the application of the product in this technical data sheet, implies no liability or any other legal responsibility on BASF Yapı Kimyasalları San. A.S.

This technical data sheet is valid until the new edition is published and makes old editions invalid. 01/2008.