

# MasterBrace® Fibers (formerly known as MBrace fibers)

Carbon and Glass Fiber sheets used for FRP structural strengthening

## DESCRIPTION

MasterBrace Fiber sheets are encapsulated in MasterBrace 4500 resin to form a structural composite to yield a range of high performance features.

The MasterBrace Fiber range includes unidirectional carbon and glass fiber

## RECOMMENDED USES

- MasterBrace composites can be used to increase flexural, shear, and axial load capacity on number
- Increased impact resistance and to provide blast mitigation
- Reduction of crack propagation and increased resistance to fatigue
- MasterBrace is ideal for a variety of structures including
  - Concrete/Masonry Walls, beams and slabs
  - Columns and chimneys
  - Silos and tanks
  - Pipes and tunnels
  - Strengthening of heritage structures.
  - Seismic Strengthening

## FEATURES AND BENEFITS

- **High strength to weight ratio** – provides additional strength without adding to the ‘dead load’ of a structure
- **Carbon and Glass**– allows ‘tailor made’ designs for a wide range of applications
- **Lightweight** – easily applied using hand techniques
- **Fast curing** – quick installation avoiding costly downtime of structures or buildings
- **Simple installation** – can be applied in-situ on structures in use

## PROPERTIES

### MasterBrace Carbon fiber sheet

Technical data of fiber	230 gsm	430 gsm
Modulus of elasticity	230 kN/mm <sup>2</sup>	230 kN/mm <sup>2</sup>
Tensile strength	4900 N/mm <sup>2</sup>	4900 N/mm <sup>2</sup>
Weight of C fiber (main direction)	200 g/m <sup>2</sup>	400 g/m <sup>2</sup>
Density	1.8 g/cm <sup>3</sup>	1.8 g/cm <sup>3</sup>
ε <input type="checkbox"/> Ultimat	1.5	1.5
Thickness for static design weight / density	0.112 mm	0.25 mm

### MasterBrace - Unidirectional Glass fiber sheet

Technical data of fiber	E-Glass, 900 gsm
Modulus of elasticity	73 kN/mm <sup>2</sup>
Tensile strength	3400 N/mm <sup>2</sup>
Total weight of sheet	900 g/m <sup>2</sup> in main directions
Density	2.6 g/cm <sup>3</sup>
ε <input type="checkbox"/> Ultimat	4.5
Thickness for static design weight / density	0.342 mm
Safety factor for static design	1.5 (recommended)

Values given in the Performance Data table are mean values obtained from regular, quality assurance testing. The structural designer is advised to satisfy themselves, by prior testing if necessary, that the grade chosen will conform to the performance criteria for their specific design requirements.

## APPLICATION

For detailed instructions, refer to the “MasterBrace Application Guidelines for FRP Fabric (Sheet Materials)” document.

Fibers must be completely saturated in resin. Carry out work only under appropriate environmental conditions

## ESTIMATING DATA

Follow the engineering design for material quantities, lengths and section sizes.



The Chemical Company

# MasterBrace<sup>®</sup> Fibers (formerly known as MBrace fibers)

## PACKAGING

**MasterBrace** Glass Sheet EU 900 Width 500mm

**MasterBrace** Carbon Fiber 230/400 system: Width 500mm, Length 50M

**MasterBrace** Carbon Fiber 230/200 system: Width 500mm, Length 100M

## SHELF LIFE

**MasterBrace** fibers have a shelf-life of more than 24 months if stored on warehouse conditions.

## PRECAUTIONS

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the BASF Material Safety Data Sheet (MSDS) from our office or our website.

## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this BASF publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

## NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by BASF either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not BASF, are responsible for carrying out procedures appropriate to a specific application.

®= Registered Trademark of the BASF-Group in many countries of the world

**BASF Chemicals & Polymers Pakistan (Pvt) Ltd.**  
Construction Chemicals Division  
46-A, Block-6, P.E.C.H.S.,  
Shahrah-e-Faisal,  
Karachi-75400

email: mohsin.zia@basf.com

**Karachi**  
Tel: 021 111 550 550

**Lahore**  
Tel: 042 111 550 550

**Islamabad**  
Tel: 051 4446106-08

Website: [www.master-builders-solutions.basf.pk](http://www.master-builders-solutions.basf.pk)