

MasterBrace[®] FIB

Unidirectional High Strength Fiber Fabrics for the MasterBrace Composite Strengthening System

DESCRIPTION

MasterBrace FIB are unidirectional fabric sheets of Aramid, Carbon or Glass Fibres used as a part of **MasterBrace** Composite Strengthening System.

TYPICAL APPLICATIONS

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

Note: For information regarding aramid or glass fiber fabric for the **MasterBrace** Composite Strengthening System, please contact your Master Builders Solution representative.

ADVANTAGES

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

PACKAGING

MasterBrace FIB 230/50 CFS & MasterBrace FIB 300/50 CFS
50 m² (0.50 x 100 m) rolls

MasterBrace FIB 400/50 CFS, MasterBrace FIB 450/50 CFS & MasterBrace FIB 600/50 CFS
25m² (0.50 x 50 m) rolls

APPLICATION GUIDELINES

Preparation of substrate

The mineral based substrates (concrete & brick) must be sound, clean and dry. 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 sealed. In case of low strength concrete (<1.5 N/mm²), the loose concrete must be broken out and the surfaces should be reprofiled with structural repair mortars from the **MasterEmaco** range. Before the **MasterBrace P 3500** application let repair mortars cure for at least 7 days. **MasterBrace FIB** sheets should be free of oil stains and dust.

Contact Master Builders Solutions Technical Services Department for advice on preparation.

Application method

Kindly refer to the detailed method statement for **MasterBrace FIB** and the relevant datasheets.

SYSTEM BUILD-UP

Surface preparation
MasterBrace ADH 4000 or
MasterEmaco S 488PM / MasterBrace ADH 1414
Primer
MasterBrace P 3500
Saturating / laminating resin
MasterBrace SAT 4500
Structural strengthening fabric
MasterBrace FIB

CLEANING

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

WATCHPOINTS

MasterBrace FIB applications should be done by approved experts. Work clothes, protective gloves, glasses and masks must be used during the application. Do not touch the fibers without gloves. Consult to the Master Builders Solutions Technical Services Department for advice on application method.

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DRY FIBRE PROPERTIES*

Typical Properties	MasterBrace FIB 230/50 CFS	MasterBrace FIB 300/50 CFS	MasterBrace FIB 400/50 CFS	MasterBrace FIB 450/50 CFS	MasterBrace FIB 600/50 CFS
Material Type	Carbon	Carbon	Carbon	Carbon	Carbon
Design Cross Section Thickness (mm)	0.13	0.17	0.22	0.25	0.33
Width (mm)	500	500	500	500	500
Minimum Fiber Weight (g/m ²)	230	300	400	450	600
Tensile Modulus (Gpa)	240	240	240	240	240
Tensile Strength (Mpa)	4900	4900	4900	4900	4900
Elongation at Break(%)	2.10	2.10	2.10	2.10	2.10

Note: All the above carbon fibre fabrics are available in high tensile modulus of 340,000N/mm² with tensile strength of 3200N/mm² and Ultra high elasticity modulus of 640,000N/mm² with tensile strength of 1900N/mm²

LAMINATE PROPERTIES**

Typical Properties	MasterBrace FIB 230/50 CFS	MasterBrace FIB 300/50 CFS	MasterBrace FIB 400/50 CFS	MasterBrace FIB 450/50 CFS	MasterBrace FIB 600/50 CFS
Nominal Laminate Thickness (mm)	0.40	0.50	0.70	0.76	0.85
Tensile Modulus (Gpa) as per ASTM D 3039	95	95	95	95	95
Tensile Strength (Mpa) as per ASTM D 3039	1100	1100	1100	1100	1100
Elongation at Break(%) as per ASTM D 3039	1.80	1.80	1.80	1.80	1.80

** Test properties of composite laminate with 60% (min) reinforcement contents tested in ideal conditions in the principal fiber direction.

Note: All the above values are related to the effective laminate thickness.

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STORAGE

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

HEALTH AND SAFETY

READ ALL SAFETY DIRECTIONS AND WARNINGS AND REFER TO MATERIAL SAFETY DATA SHEET FOR HANDLING PROCEDURES.

Store in cool, dry area 5°C to 30°C away from direct sunlight, flame or other hazards.

MasterBrace FIB reinforcement materials contain carbon and glass fibres. During application of **MasterBrace FIB** materials, wear appropriate work clothing to minimise contact. Use caution when handling flammable liquids and eliminate all sources of ignition from work area.

Product Material Safety Data Sheets are available and should be consulted and on hand during application and/or whenever handling these products.

These products are for professional and industrial use only; application directions must be followed.

MAINTENANCE

Periodically inspect the applied material and repair localised areas needed. Consult your representative for additional information.

QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

* Properties listed are based on laboratory controlled tests.

® = Registered trademark of the MBCC Group in many countries.

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STATEMENT OF RESPONSIBILITY

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NOTE

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

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Disclaimer: the TUV mark relates to certified management system and not to the product mentioned on this datasheet



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