

MasterBrace Carbon Fibre

Carbon Fibre Reinforced Polymer (CFRP) system for structural strengthening of concrete and timber structures, as part of MasterBrace System; Carbon Fabric types CFS (I) and CFM (I) according to AS 5100.8

Material Description

MasterBrace Carbon Fibre sheet reinforcement materials are enveloped in [MasterBrace 4500](#) resin to yield a range of high performance composites with many features. MasterBrace FIB system is in compliance with AS 5100.8: 2017 .

Areas of Application

- Flexural and shear strengthening elements that may not be planar (flat)
- Increasing compressive strength via axial confinement of columns
- Seismic retrofitting of columns and piles for earthquake resistance
- Enhancement of fatigue resistance under repetitive loading conditions
- Walls, beams, slabs, silos, chimneys, tanks, pipes, tunnels, piles etc

Characteristics and Benefits

MasterBrace Fibres (in general)

- Lightweight and durable - easy to apply and non-corroding
- High strength to thickness ratio – does not interfere with widths or thicknesses of members non-obtrusive

MasterBrace Carbon Fibre

- Increased strength - for Flexure, Shear, Confinement & Fatigue enhancement and end anchoring of MasterBrace systems

Australian Standard

- AS 5100.8 – 2017: Easy reference to Appendix A, Section A2. Individual Performance properties may be used for design purposes.

Properties

Performance Properties	AS5100.8 A2.2.2 CFS (I)	MasterBrace FIB 300/50 CFS	MasterBrace FIB 600/50 CFS
Tensile Strength MPa	4300	4900 min.	
Tensile Modulus GPa	215	240 min.	
Ultimate elongation (strain)	1.80%	2.1%max.	
Fibre Aerial Weight g/m ²	150	300	600
Fibre Density g/cm ³	1.6	1.81min	
General Info			
Fabric Design Thickness (mm)	0.166		0.333 ± 5%
Fabric length (m/roll)	25-100		
Fabric width (mm)	500 ± 10 mm		

Note – MasterBrace FIB fabrics are available in 200, 230 300, 400, 450, 600 and 900 GSM.

Specially designed fabric style, width and length to meet the specific project requirements are also available upon request. High Modulus fabrics type CLM are available as made to order and may be subject to minimum order quantities. Please contact your local Master Builders Solutions office for further details.

Other fabrics such as Aramid (for Impact resistance) as well as Glass (for Siesmic) fibres are available. Please refer to MasterBrace AFS and GFS Technical Datasheets.

MasterBrace Carbon Fibre

Carbon Fibre Reinforced Polymer (FRP) system for structural strengthening of concrete and timber structures, as part of MasterBrace System; CFS (I) and CFM (I) Carbon Fabric according to AS 5100.8

Application

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

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

The system build-up and configuration as described:

Concrete substrate adhesive primer: MasterBrace P3500 @6m²/L whilst still tacky; apply Saturating resin MasterBrace 4500 @below coverage:

200 ~ 350 gsm fibre sheet : 0.8 to 1.0 kg/m²

350 ~ 450 gsm fibre sheet : 0.9 to 1.2 kg/m²

750 ~ 900 gsm fibre sheet : 1.5 to 1.8 kg/m²

Specification Clause

Unidirectional carbonfibre fabric with high strength, complying with Type CFS (I) in table A2.2.2 of AS 5100.8: 2017; to Structural strengthening of reinforced concrete, masonry, brickwork and timber elements or structures, to increase flexural and shear loading capacity.

Estimating Data

Refer to specific material Performance Data tables for details.

Packaging

Refer to specific material Performance Data tables for details.

Storage & Shelf Life

MasterBrace Fibre has a shelf life of 36 months. Store out of direct sunlight, clear of the ground on pallets protected from rainfall.

Disclaimer

MasterBrace-Fibre-ANZ-V12-1223

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this MB Solutions Australia Pty Ltd 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 and for ensuring that the application and use of the product is in accordance with the manufacturer's guidelines and recommendations.

NOTE

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

MB Solutions Australia Pty Ltd

ABN 69 634 934 419
Unit 102, 2 Burbank Place
Norwest NSW 2153

Freecall: 1300 227 300

www.master-builders-solutions.com/en-au

MB Solutions New Zealand Ltd

45C William Pickering Drive
Albany, Auckland
New Zealand

Phone: +64 9 414 7233

Emergency Advice:

1300 954 583 within Australia (24hr)
0800 001 607 within New Zealand

