

MasterBrace LAM

Pultruded carbon fiber sheets of the MasterBrace LAM (Fiber Reinforced Polymer) system indicated for the reinforcement of concrete, wood and steel elements. Approved with C.V.T.

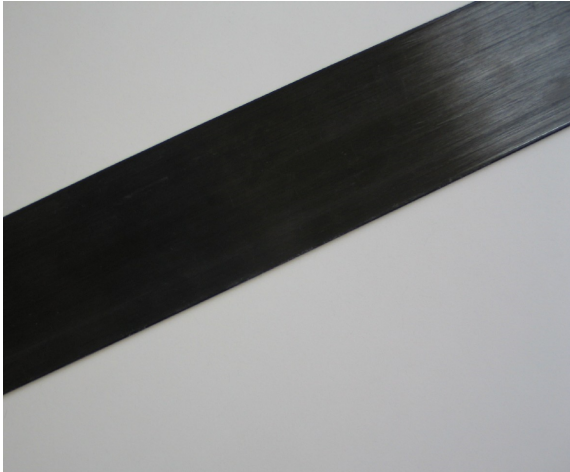
MATERIAL DESCRIPTION

MasterBrace LAM is a fibrous reinforcement in the form of pultruded carbon fiber sheets characterized by mechanical performance superior to that of harmonic steel suitable for flexural reinforcements (plating or beton plaqu ) of concrete, wood and steel elements.

FIELDS OF APPLICATION

MasterBrace LAM is particularly suitable for:

- bending reinforcement of brick-concrete joists
- bending reinforcement of thin reinforced concrete beams or pillars;
- bending reinforcement of wooden beams.



FEATURES AND BENEFITS

For the purpose of reinforcing flexed structures with resistant elements in the tensioned area (plating), MasterBrace LAM allows to replace, with extremely light and easy-to-install materials, the traditional technique of plating with steel plates (beton plaqu ) and :

- increase the load-bearing capacity (for example structural redevelopment following an operational change);
- increase the resistance to fatigue;
- to speed up maintenance and reduce costs.

MasterBrace LAM is available in the high resistance version and on request also in the high modulus version.

PACKAGING

Available as standard in the widths 50 and 100 mm.
On request available in widths 60, 80, 120, 150 mm.
Roll of 50 m or 100 m.

STORAGE

Store the product in a covered, cool and dry place (5 ± 30 ° C) away from direct contact with the sun, fire or open flames.

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| Technical Information | | | MasterBrace LAM CFS | MasterBrace LAM CFH |
|--------------------------------------------------------------------------------------------|-------------------------------------|-------------------|-------------------------|-------------------------|
| Nominal foil thickness | | | 1,4 mm | 1,4 mm |
| Width | | | 50-60-80-100-120-150 mm | 50-60-80-100-120-150 mm |
| Class according to Technical Assessment Certificate | | | C150/2300 | C200/1800 |
| Color | | | black | black |
| Geometric and physical characteristics as per CVT R.0000119 certification dated 11-03-2019 | | | MasterBrace LAM CFS | MasterBrace LAM CFH |
| Fiber density, p _{fib} | fiber | ISO 10119 | 1,82 g/cm ³ | 1,82 g/cm ³ |
| | matrix | | 1,17 g/cm ³ | 1,17 g/cm ³ |
| Fiber content | by volume | ISO 11667-1997 | 72 % | 72 % |
| | by weight | | 68 % | 68 % |
| Glass transition temperature | impregnation resin | EN 12614:2004 | +55 °C | +55 °C |
| Limit temperatures, minimum and maximum, of use | | CNR DT200-R1/2013 | -10/+40 °C | -10/+40 °C |
| Reaction to fire | | EN 13501-1:2007 | Classe F | Classe F |
| Fire resistant | | EN 13501-2:2007 | PND | PND |
| Geometric and physical characteristics as per CVT R.0000119 certification dated 11-03-2019 | | | MasterBrace LAM CFS | MasterBrace LAM CFH |
| Elastic modulus E | UNI EN 13706-1-2 UNI EN ISO 527- | | 153 GPa | 201 GPa |
| Tensile strength, f _{fib} | UNI EN 13706-1-2 UNI EN ISO 527- | | 3198 MPa | 3080 Mpa |
| Tensile strength, f _{fib} | UNI EN 13706-1-2 UNI EN ISO 527- | | 3042 MPa | 2769 MPa |
| Strain at break, ε _{fi} | UNI EN 13706-1-2 UNI EN ISO 527- | | 1,9 % | 1,3 % |

APPLICATION SHEET

APPLICATION

- Apply the layer of MasterBrace P 3500 by roller or brush (recommended only on wood);
- mechanically mix component A of MasterBrace ADH 4000 before adding its component B (mixing ratio 4A: 1B by weight);
- once component B has been added, mix until a uniform gray compound is obtained;
- spread MasterBrace ADH 4000 with a notched trowel on the face of the sheet (after having cleaned it with acetone or nitro thinner and dried) and then also on the support, to a millimeter thickness;
- place MasterBrace LAM on the support and with the

appropriate roller (hard rubber) exert constant pressure by moving the tool in both directions in the direction of the fibers themselves until the excess adhesive flows back;

- remove excess resin and clean the foil.

PROTECTION AGAINST UV RAYS

Protect surfaces reinforced with MasterBrace LAM by means of a coating from the MasterProtect line resistant to atmospheric agents.

ENVIRONMENTAL LIMITATIONS

Apply MasterBrace ADH 4000 and the reinforcement system with air and substrate temperatures between +10 and + 30 ° C.

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Application at air and substrate temperatures below 10 ° C can be done by adopting special precautions, such as heating the substrate and the resin application environment to a temperature between 10 and 20 ° C (for a period of time until the resin has hardened), using suitable heaters.

Do not apply the product at temperatures below 5 ° C as the polymerization time would be extremely lengthened.

The application must take place on a dry support, which has a humidity not exceeding 6% and with a relative environmental humidity not exceeding 85%.

The reinforcement applied must subsequently be protected from any rainwater until the resin has completely hardened.

Do not apply the system when the substrate is wet, when leaning or dew formation is expected.

The operating temperature range for the resin is between -10 and + 55 ° C (this value refers to the measured surface temperature of the resin and not to the ambient temperature). For different operating temperatures, the technical service of Master Builders Solutions should be contacted.

SAFETY INSTRUCTON

When mixing, always wear gloves, goggles and suitable work clothes to avoid contact with the skin.

In case of accidental contact, wash the affected parts abundantly with soap and water or with an appropriate detergent.

Do not use solvents or thinners.

Do not breathe vapors and aerosols; the application in a closed environment must take place in conditions of continuous air exchange.

During use it is forbidden to drink, eat and smoke.

Observe the safety regulations for the use of flammable and solvent-containing products

OTHER SERVICES

For price analysis, specifications, supplementary brochures, references, reports and technical assistance, visit the website www.master-builders-solutions.com/it-it or contact infomac@mbcc-group.com.

Scan the QR code to visit the product page and download the latest version of this datasheet.



Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.

Master Builders Solutions Italia Spa

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For further information, please consult the local Technician of Master Builders Solutions. The technical advice on how to use our products, either written or verbally given, are based on the current state of our scientific and practical expertise, and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products.

Therefore, the customer is not exempted from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes.

This version supersedes all the previous ones.