MasterBrace LAM

High Strength and High Modulus Unidirectional Pultruded Carbon Fiber Laminates for strengthening reinforced concrete structures

MATERIAL DESCRIPTION

MasterBrace LAM is high strength or high modulus unidirectional pultruded carbon fiber laminates in **MasterBrace FRP** System.

FEATURES AND APPLICATION

- Increasing flexural strength of concrete beams.
- Increasing flexural strength of concrete slabs under heavy machine loads.
- Increasing rigidity of beams and slabs against bending deformations.
- Increasing flexural strength of concrete slabs damaged with ventilating channel openings, stairs and elevator holes etc.
- Increasing flexural strength of concrete beams and slabs under increased service loads (change of usage etc.).
- Decreasing disturbing effect of vibrations on concrete slabs caused by mechanical equipment.

FEATURES AND BENEFITS

- Light and easy to carry.
- Easy to cut and re-shape.
- Easy to design (Unidirectional laminates and similar elasticity modulus with steel).
- Does not increase the dead load of the structure.
- Decreases the bending deformations in the slabs and beams.
- Flexible application method allows building operation to continue.

APPLICATION PROCEDURE

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 (<1.5N/mm²), the loose concrete must be broken out and the surfaces should be reprofiled with structural repair mortars from the MasterEmaco S range. Before the **MasterBrace SAT** application let repair mortars cure for at least 7 days. FRP sheets should be free of oil stains and dust. Contact Master Builders Solutions Technical Services Department for advice on preparation.

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

Application Method:

MasterBrace ADH 4000 should be applied to the prepared surfaces and to FRP laminates by using a steel spatula or steel trowel. Application thickness should be between 1.0-2.0 mm. In the following 10 minutes (at 25°C) FRP laminates should be placed on to the substrate and pushed onto the laminates with a stiff roller (polyamide, steel etc.) for preventing possible air gaps between the laminate and substrate. For further details please refer to **MasterBrace ADH 4000**.

WATCHPOINTS

MasterBrace FRP 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.

CLEANING

After the application all tools should be cleaned with a proper detergent or solvent such as thinner. **MasterBrace P 3500** can be cleaned with only mechanical abrasion after hardening.

CLEANING OF TOOLS

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PACKAGING

Length - 100 m rolls
- 200 m rolls (only for 20mm x 1.2 / 1.4)

STORAGE

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

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SAFETY

- Always wear gloves, goggles and suitable work clothes during mixing in order to avoid contact with the skin.
- In the event of accidental contact, thoroughly wash the affected parts with water and soap or an appropriate detergent.
- Do not use solvents or thinners.
- Do not inhale the vapours and sprays; a continual change of air should be ensured for application in a closed environment.
- Under no circumstances drink, eat or smoke during use.
- Comply with safety regulations on the use of products that are inflammable or contain solvents.

For applications with surfaces, climatic conditions or use other than those indicated in the product sheet contact our Technical department.

NOTE

Technical support, where provided, does not constitute supervisory responsibility. For additional information contact your local MB Construction Chemicals Solutions South Africa (Pty) Ltd representative. MB Construction Chemicals Solutions South Africa (Pty) Ltd shall not be liable for technical advice provided.

MB Construction Chemicals Solutions South Africa (Pty) Ltd reserves the right to have the true cause of any difficulty determined by accepted test methods. Undertaking such tests is not, and shall not be deemed to be, an admission of liability or an assumption of any risk, loss, damage or liability.

QUALITY AND RESPONSIBLE CARE

All products originating from MB Construction Chemicals Solutions South Africa (Pty) Ltd are manufactured under a management system independently certified to conform to the requirements of the quality standards ISO 9001, environmental and occupational health and safety standards.

* Properties listed are based on laboratory controlled tests.

TYPICAL PROPERTIES*

	MasterBrace LAM 50/1.2 CFS	MasterBrace LAM 50/1.4 CFH	MasterBrace LAM 100/1.2 CFS	MasterBrace LAM 100/1.4 CFH
Elasticity Modulus (N/mm^2)	165,000	210,000	165,000	210,000
Tensile Strength (N/mm^2)	3,000	2,800	3,000	2,800
Elongation at Break (%)	1.5	1.4	1.5	1.4
Thickness S (mm)	1.2	1.4	1.2	1.4
Width (mm)	50	50	100	100
Cross Section Area (mm^2)	60	70	120	140

*Other dimensions available, please contacnt Master Builders Solutions for further information

DISCLAIMER

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