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MasterBrace® SAT 4500 (Formerly known as Mbrace® Fibre Saturant)

Epoxy Based Adhesive for MasterBrace® FIB System

DESCRIPTION OF PRODUCT

MasterBrace® SAT 4500 is epoxy based, solvent free, high strength adhesive developed for **MasterBrace® FIB System**.

FIELDS OF APPLICATION

- Bonding of **FRP** (carbon, glass and aramide) sheets on concrete, steel and wooden surfaces.

FEATURES AND BENEFITS

- Easy to apply
- Low viscosity
- High strength
- Solvent free

APLICATION PROCEDURE

Preparation of Substrate

The mineral based substrates (concrete, stone, brick, tile etc.) must be sound, clean and dry. It shouldn't be weakened by over-troweling and lack of curing. 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 plugged. In case of low strength concrete ($\sigma_{tc} < 1.5$ N/mm^2), the loosen parts of concrete must be broken and the surfaces should be reprofilled with structural repair mortars in **MasterEmaco® S** range. 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.
In all kind of substrates **MasterBrace® P 3500** should be used as a primer and the adhesive application should be done in the following 24 hours.

TECHNICAL DATA

Product Chemistry **MasterBrace® SAT 4500** Part A **MasterBrace® SAT 4500** Part B	Epoxy Resin Epoxy Hardener	
Color	Blue	LX
Mixed Density	1.02 kg/litre	
Viscosity	1500-2500 mPa.s	
Compressive Strength TS EN 196 (7 days)	> 60 N/mm^2	
Flexural Strength TS EN 196 (7 days)	> 50 N/mm^2	
Bonding Strength to concrete (7 days)	> 3.0 N/mm^2	
Application Temperature	+5°C - +30°C	
Pot Life	30 minutes	
Fully Cured at 20°C	7 days	

Typical values are obtained from the test results of 4x4x16 mortar prism in 23°C and 50% relative humidity conditions. High temperatures shortens the curing and working time, lower temperatures extends the durations

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Mixing

MasterBrace® SAT 4500 has two parts in pails, produced according to right mixing ratio. Material temperature should be between 15 - 25°C before mixing. Part B should be added into the Part A without any remaining material in the pail. It should be mixed with using a proper mixer (~300rpm) for polymer mixing. Mix the parts at least 3 minutes to have a homogenous mixture.

Mixing Ratio

MasterBrace® SAT 4500	Part A	Part B
Quantity	3.73 kg	1.27 kg
Mixed Density	1.02 kg/litre	

APPLICATION METHOD

MasterBrace® SAT 4500 should be applied to the primed surfaces by using a soft roller. Application thickness should be between 0.8-1.0 mm. Lay down the sheets on to the surfaces while the adhesive is still wet. After lying, strongly press the sheets two or three times in the longitudinal direction of the fiber using a roller or rubber spatula in order to allow **MasterBrace® SAT 4500** penetrate into the sheet and to eliminate air from the coat of resin. In the case of multiple layers of fiber, 700-800 gr/m^2 **MasterBrace® SAT 4500** should be applied between the all layers. Under UV radiations the fibers should be coated with a UV resistant paint in **MasterProtect®** range. For plastering on the fiber surface, clean and sound sand should be spread on to the fiber surface while the adhesive is still wet. After curing of adhesive any kind of plaster can be easily applied. For fire resistance, the fibers should be coated with special fire resistant coatings (**Meyco® Fireshield**, etc.).

COVERAGE

1.8 kg/m^2 in first layer, and 0.8 kg/m^2 in the following coats.

WATCH POINTS

- **MasterBrace® FRP** application should be done by approved experts.
- During the application the substrate and ambient temperature should be between 5 - 30°C.
- Resinous materials' pot life and curing times vary depending on the relative humidity, substrate and ambient temperature. Reaction gets slow in low temperatures and it causes to extension on pot life and working time. On the other hand high temperatures speed up the reaction, which results to short pot life and working time. For full curing of material, both the substrate and ambient temperature shouldn't be under allowed application temperature.
- **MasterBrace® SAT 4500** is provided in ready to mix pails. Do not add any solvent etc. into the mixture during the application.
- The amount of mixed resin should be such that it may be applied within its useful workability time.
- Mixing should be made with proper mixers and do not allow mixing by hand.

CLEANING OF TOOLS

After the application all tools should be cleaned with a proper detergent or solvent such as thinner. **MasterBrace® SAT 4500** can be cleaned with only mechanical abrasion after hardening.

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PACKAGING

5 kg set
Part A: 3.73 kg pail
Part B: 1.27 kg pail

STORAGE

Store in original container in cool (+5°C - +25°C) and dry indoor conditions.

SHELF LIFE

18 months under proper storage conditions after production date.

HEALTH AND SAFETY PRECAUTIONS

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixture should not come into contact with skin and eyes; in case of a contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

DISCLAIMER

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **BASF Türk Kimya Sanayi ve Tic. Ltd. Şti.** is only responsible for the quality of the product. **BASF Türk Kimya Sanayi ve Tic. Ltd. Şti.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

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EN 1504-4
MasterBrace SAT 4500
Structural Bonding Product

E-modulus in Compression	≥ 2000 N/mm²
Shear Strength	≥ 6 N/mm²
Workable Life	40 min. (23°C)
Shrinkage	≤ 0,1 %
Compressive Strength	≥ 30 N/mm²
Coefficient of Thermal Expansion	≤ 100 x 10⁻⁶/ K
Glass Transition Temperature	≥ 40°C
Adhesion (hardened concrete to hardened concrete)	Failure in concrete
Adhesion (fresh concrete to hardened concrete)	Failure in concrete
Durability	Passes
Reaction to fire	E
Dangerous Substances	Complies with 5.4

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