

MasterBrace[®] 4500

High strength saturant for MasterBrace fabric sheets.

MATERIAL DESCRIPTION

MasterBrace 4500 is a 100% solid, long potlife blue pigmented, epoxy resin for saturation of **MasterBrace FIBRE SHEET** to form in-situ FRP Composite.

MasterBrace 4500 is part of the **MasterBrace** resin systems for the creation of composite strengthening.

RECOMMENDED USES

- **MasterBrace 4500** is used to saturate the **MasterBrace** carbon, glass or aramid fabric sheets to create a composite with the concrete structure.
- **MasterBrace** fibre reinforced plastic composites can be used to increase flexural, shear, impact resistance, axial load capacity. **MasterBrace** systems can increase fatigue resistance, reduce crack propagation and can be used as part of a blast mitigation program.

FEATURES AND BENEFITS

- **Adheres to fabric and primer concrete substrates** – Allows fast creation of true composite with the concrete.
- **Solvent free** – Low VOC and non-shrink
- **Pre-proportioned packaging** – No job site errors
- **Easy application** – Low viscosity penetrates fabric easily.
- **Cures hard at low temperatures** – Wide application range

PROPERTIES

Supply form	Translucent blue liquid
Volume solids	100 %
Mixed density (kg/litre)	1.13 ± 0.03
Mixing ratio, by weight (A:B)	100:52
Mixed viscosity (cps, at 25°C)	4000 ± 500
Pot life (in minutes)	30 min at 40°C
Setting time	< 3 hrs. at 25°C < 4 hrs. at 40°C
Full cure	7 Days

Compressive strength (ASTM C579)	> 40 MPa at 1 Day > 60 MPa at 7 Days
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Tensile strength (BS:6319, pt 7)	17 MPa
Flexural strength (BS:6319, pt 3)	35 MPa
Coverage:	
200 ~ 350 gsm fibre sheet	: 0.8 to 1.0 kg/m ²
350 ~ 450 gsm fibre sheet	: 0.9 to 1.2 kg/m ²
750 ~ 900 gsm fibre sheet	: 1.5 to 1.8 kg/m ²

APPLICATION

Surface preparation

Remove all grease, oil, dust, residual curing compound, mould release agent or other contaminant that could impair adhesion. Laitance should preferably be removed by light sweep blasting or hydro-jetting. Mechanical wire brushing may be appropriate for small areas.

Spalled concrete should be cut back to sound concrete and made good with **MasterBrace 2200** mortar. Conventional concrete curing compounds should be removed before application.

Mixing

Proportion part kits accurately mixing only what can be used in less than 30 minutes. Thoroughly stir Part A, add Part B and blend thoroughly using a slow speed (300-600rpm) mixer fitted with a suitable paddle.

Priming

The prepared surface should be primed with **MasterBrace P 4000** and the **MasterBrace** fabric (saturated with the **MasterBrace 4500**) should be applied once the primer is no longer tacky (usually overnight). **MasterBrace P 4000** do not apply if ambient temperature is less than 5°C and only mix as much primer as can be applied within its pot life. Mixed primer should be applied with roller or brush. If necessary a second coat can be applied when surface is very porous.

Sheet preparation

MasterBrace FIBRE SHEET: The **MasterBrace** Fibre Reinforcement System must be cut before application of **MasterBrace 4500** into prescribed sizes using scissors or cutters. The number of sheets cut shall be limited to those that can be used within a day. The size of any sheet should be less than 2 metres in length to facilitate flat wrinkle free application and ensure no air is trapped under the fibre sheet.

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Application of MasterBrace 4500

Apply first coat of fully mixed **MasterBrace 4500** to primed concrete substrate using roller or brush. Place the **MasterBrace** FIBRE SHEET and roll in the longitudinal direction of the fibres two or three times using a deforming roller and rubber spatula in order to impregnate the resin into the fibres and to deform the resin coat. For joining strips of fibre sheet, a 15cm overlap length is required in the main direction. Additional resin must be applied at the overlap location on top of the outer layer of fibre sheet to be overlapped. Apply the second coat of **MasterBrace 4500** ensuring total saturation of the **MasterBrace** FIBRE SHEET. In cases where more than one layer of fibre sheet is to be applied, the above application method for **MasterBrace 4500** should be repeated. In case of protection with plaster, ensure to dry-shake oven dried fine quartz grains to assist bond strength with overlay.

CURING

Cure time will vary depending on the ambient temperature, quantity mixed and placed.

MasterBrace 4500 will have fully cured after 7 days at 23°C.

ESTIMATING DATA

A 10 kg kit of **MasterBrace 4500** will yield 9 litre.

PACKAGING

MasterBrace 4500 comes in a 10 kg kit

SHELF LIFE

MasterBrace 4500 can be stored in tightly closed original containers for 12 months at moderate temperature.

PRECAUTIONS

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the Master Builders Solutions Material Safety Data Sheet (MSDS) from our office or our website.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions 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.

NOTE

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