

MBRACE[®] SATURANT

Epoxy resin saturant for MBRACE Fibre (Fibre Reinforced Polymer) Systems

DESCRIPTION

MBRACE Saturant is the recommended resin adhesive for use with **MBRACE Fibre** sheet (wet or dry) lay-up systems.

MBRACE Saturant is a two-part epoxy product with 100% solids content.

The **MBRACE Composite Strengthening System** is a family of lightweight FRP materials, externally bonded to the surface of structures. They comprise of either ready to use carbon laminate adhered directly to the surface or carbon, aramid or glass fibre sheets impregnated in situ, with a saturant resin system, on the surface. The systems provide very high tensile strength and are utilised for flexural and shear reinforcement and axial compression confinement of concrete, masonry and timber elements.

FEATURES AND BENEFITS

- **Ready-to-use (no need to add filler)**
- **Convenient pot-life**
- **High adhesive and bond strength**
- **Low viscosity, good for a variety of fibre densities**
- **Bonds to damp surfaces (saturated surface dry)**
- **High mechanical strength**
- **Solvent-free**

PERFORMANCE DATA

Typical physical properties)

Bonding to concrete (direct traction), pr EN 1542	> 3.5 MPa (concrete failure)
Tensile strength:	
• direct, ASTM D638	>50 MPa
• by flexing, ASTM D790	>120 MPa
Modulus of elasticity:	
• tensile, ASTM D638	>3000 MPa
• flexural, ASTM D790	>3500 MPa
Ultimate elongation, ASTM D638	2.5%
Compressive strength ASTM D695	>80 MPa

SPECIFICATIONS

Composition	Two-part
Type of resin	Epoxy
Solids by volume, %	100
Mixing ratio	by volume – 3 A : 1 B by weight – 76% A : 24% B
Specific gravity	1.12
Colour	Opaque Grey
Viscosity	1600 Centipoise

SPECIFICATIONS continued

Recommended application methods	Dry Lay –Up: 1 coat on base substrate + 1 coat on installed sheet
	Wet Lay-Up: Pre-saturate sheet using laminating machine
Theoretical consumption	~0.5lt/m ² per coat (2m ² /L) (min 2 coats/fibre layer)
Workability time	23°C; 30 minutes
Cure period	7 days at 23°C
Re-coat range maximum	Within 24 hours (usually wet-on-wet)
Tool cleaning	Thinner No. 1

PACKAGING

Packaging (5lt kit)	A – 3.75 L B – 1.25 L
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APPLICATION DIRECTIONS (Brief Instructions)

- For detailed instructions, refer to the “MBRACE Application Guidelines for MBRACE FRP Fabric (Sheet) Materials” document.
- Application of external reinforcement may only take place if the substrate has an inherent tensile strength of at least 1.0MPa for sheet materials.
- The surfaces of elements that are still in good condition or restored with repair mortar should be roughened sufficiently with grit blasting or similar. With degraded substrates, the whole damaged layer should be removed by scarifying, hydro-demolition or similar and then structural restoration carried out with a suitable repair mortar eg. **EMACO S88C** or **CONCRETE 1446**.
- Angle grind, grit blast, or needle gun repair surfaces, to remove smooth, cement paste rich surface layers (laitance) and ensure aggregate is exposed and the substrate surface has a sufficient profile.
- Remove oils, grease, dust or any other loose material from the surface that may impair adhesion.
- Ensure a maximum substrate humidity of 4%.
- Ensure substrate temperature is at least 3°C above dewpoint temperature.
- Ensure surfaces are within allowable levelness and flatness tolerances.
- Mechanically pre-mix component A before adding component B, using a slow speed drill and mixing paddle.
- When component B has been added, mix slowly for approximately two minutes until a homogeneous mix has been obtained, to minimise air inclusions.

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For the **Dry lay-up** method:

- The first coat of **MBRACE Saturant** may be applied by brush or by roller, over the still tacky **MBRACE Primer**.
- Apply **MBRACE Fibre** and remove air by rolling with a ribbed roller in the fibre direction only.
- Apply a second coat of **MBRACE Saturant** using a roller, working in the direction of the fibre.
- Ensure complete wet-out of the fibre by using a squeegee to remove excess **MBRACE Saturant**.
- Repeat the last four steps for subsequent layers of **MBRACE Fibre**.
- Clean up excess saturant with **Thinner No 1** prior to hardening.
- The surface of the final layer of **MBRACE Saturant** may be painted over with **MASTERSEAL 160**, to ensure visual uniformity and UV protection. In this case, broadcast clean, kiln dried sand into the final coat of **MBRACE Saturant**, while it is still wet.

PRECAUTIONS

Only mix sufficient material that may be applied within its workability time.

The climatic and operating conditions of the site and the complexity of the area to be treated should give an indication as to the quantities of product to be mixed.

Excessive vibration and oscillation of the structural component should be avoided during application of the FRP materials and the curing phase of the epoxy resins.

Complete "wet-out" of the sheet is imperative and kinks, ripples or dry spots are defects that must be rectified.

Fire protection requirements must be complied with, as epoxy adhesives generally have limited fire resistance.

SAFETY

READ ALL SAFETY DIRECTIONS AND WARNINGS AND REFER TO MATERIAL SAFETY DATA SHEETS FOR HANDLING PROCEDURES.

Store in a cool, dry area 10 to 32°C away from direct sunlight, flame or other hazards. Do not bend FRP fibre materials or laminates as they may break and become unusable. MBRACE FRP systems may contain carbon, aramid and glass fibres. During application of these materials, wear appropriate work clothing to minimise contact.

In particular:

- Always wear gloves, goggles and suitable work clothes during mixing of epoxy resins and working with fibre materials, in order to avoid contact with the skin and eyes.
- In the event of accidental contact, thoroughly wash the affected parts with water and soap or an appropriate detergent.
- Do not add solvents or thinners to the epoxy resins.
- Do not inhale vapours, sprays or fibre dust. 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.
- Use caution when handling flammable liquids and eliminate all sources of ignition from work area.

For applications to substrate surfaces, extreme climatic conditions or use other than those indicated in the product data sheet, please contact your local BASF MBRACE representative or our Technical Department for further information.

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 BASF **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 **BASF** 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

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

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