

MBrace[®] Resin System

Composite (FRP) Strengthening Systems

Description

The MBrace Composite Strengthening Resin System consists of:

MBrace PRIMER

MBrace PRIMER is a 100% solid epoxy resin based primer for use on porous mineral substrate. Low viscosity enables effective penetration and sealing of porous substrate.

CONGRESIVE 2200

CONGRESIVE 2200 is a 100% solid epoxy resin based, 2-component, non-sag paste for reprofiling of the uneven substrate. Please refer the separate product datasheet for further details.

MBrace SATURANT

MBrace SATURANT is a 100% solid, blue pigmented, epoxy resin for saturation of MBrace FIBRE SHEET to form in-situ FRP Composite. MBrace SATURANT is also available in long-pot life version as MBrace SATURANT (LP) for hot weather applications above 30°C.

MASTERSEAL TOP COAT

In case if the Mbrace FRP system is left exposed to UV light, same need to be protected using suitable UV Protective top coat. MASTERSEAL 260 is high-performance, Polyurethane based UV protective top coat and shall be provided in such situations. Please refer the separate technical datasheet of MASTERSEAL 260 for technical parameters and application guidelines.

Advantages of MBrace FRP System

- Increased flexural strength
- Increased shear strength
- Increased impact resistance
- Increased axial load capacity
- Blast mitigation
- Fatigue enhancement
- Easy to apply, even in congested areas
- Enables control of crack propagation
- Faster installation
- Excellent strength to thickness ratio
- Wide range of fibres to choose from
- Adaptable to complex geometry
- Low impact on aesthetic
- Lightweight
- Durable

Typical Properties

MBrace Primer

Aspect	: Free flowing liquid
Mixed density	: 1.07 ± 0.02 kg/litre
Volume solids	: 100 %
Mixing ratio, by weight	: 100 (Base) : 50 (Hardener)
Coverage	: 4 to 6 m ² /kg
Pot life	: 40 Minutes at 25°C
Tack free time	: 6 Hours at 25°C 3 Hours at 40°C
Adhesive bond strength to Concrete (ASTM D4541)	: > 2.5 MPa (Concrete Failure)

MBrace SATURANT

GRADE	SATURANT	SATURANT (LP)
Aspect	: Translucent blue liquid	
Volume solids	: 100 %	
Mixed density (kg/litre)	: 1.13 ± 0.03	1.10 ± 0.03
Mixing ratio, by weight (B:H)	: 100:40	100:52
Mixed viscosity (cps, at 25°C)	: 4000 ± 500	4500 ± 500
Pot life (in minutes)	: 25 min at 25°C	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	
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	

Directions for use

Surface preparation

Concrete shot blasting or abrasive blasting to remove laitance and surface contamination. The concrete must be thoroughly cured, free of oils, curing compounds or mould release agents and must be thoroughly dried at the time of application. The concrete substrate must be repaired using CONGRESIVE or EMACO range of repair mortars. Surface defects in concrete should be made good using CONGRESIVE 2200. Differences in adjacent concrete surface levels must be no more than one

mm. Concrete surface protrusions such as small projections, grouting lines etc. must be ground flat using mechanical means. Depressions in the concrete surface such as a concrete joint must be filled with CONGRESIVE 2200. Sharp corners must be rounded with a radius of at least 25mm. The larger the radius the better the preparation. Internal concrete angles must be rounded using CONGRESIVE 2200.

Mixing of MBrace PRIMER/ MBrace SATURANT:

Stir the Part A (Base) component first. Add the Part B (Hardener) and mix well using slow speed mixer for at least 3 minutes before use.

Application

MBrace PRIMER: Work site must be thoroughly ventilated. Do not apply MBrace Primer if ambient temperature is less than 5°C. Only mix as much primer as can be applied within its pot life. Mixed primer should be applied with roller brush. If necessary a second coat can be applied when surface is very porous. MBrace Primer must be allowed to cure until tack free (overnight curing is common practice).

CONGRESIVE 2200: Only mix as much material as can be applied within its pot life. Apply the CONGRESIVE 2200 to the substrate using a steel trowel or other suitable tool in order to eliminate surface imperfections. Application thickness and coverage rates will be highly dependent on the condition and profile of the concrete substrate. Primed and smoothed surfaces should be treated within two days to ensure proper adhesion of the MBrace SATURANT to the substrate.

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

MBrace SATURANT:

Apply first coat of fully mixed MBrace Saturant to primed concrete substrate using roller or brush. Place the MBrace 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 MBrace SATURANT ensuring total saturation of the MBrace FIBRE SHEET. In cases where more than one layer of fibre sheet is to be applied, the above application method for MBrace Saturant should be repeated. In case of protection with plaster, ensure to dry-shake MASTERTOP SRA No. 1 or oven dried fine quartz grains to assist bond strength with overlay.

Finishing

Surfaces should be top coated within two days when exposed to direct sunlight or in other cases within one week to assure proper adhesion of topcoat to saturant. Surfaces shall be protected either with the protective mortar/plaster application or with MASTERSEAL 260.

Packaging

MBrace Primer (2 Component) 1 kg & 5 kg Pack
MBrace Saturant (2 Component) 5 kg Pack

Storage and Shelf life

MBrace Resins must be stored where temperatures do not drop below +5°C. If product has frozen, thaw at +5°C or above and completely reconstitute using mild mechanical agitation. Do not use pressurized air for agitation. Store under cover, out of direct sunlight and protect from extremes of temperature.

Shelf life is 12 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult your local BASF representative.

Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product fully cured or dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use. Do not reuse containers for storage of consumable item. For further information refer to the material safety data sheet. MSDS available on demand or on BASF construction chemicals web site.

Note

All BASF Technical Data Sheets are updated on regular basis; it is the user's responsibility, to obtain the most recent issue. Field services where provided, does not constitute supervisory responsibility, for additional information contact your local BASF representative.

Disclaimer

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