MAPEFLOOR I 900

Two-component epoxy binder

EN 13813

SR B2.0 AR0.5-IR20-E

DESCRIPTION

Mapefloor I 900 is a two-component, high solid content epoxy resin according to a formula developed in MAPEI's Research & Development laboratories. It is used as binder for mortars for patching of concrete surfaces or for epoxy mortar screed systems for floors.

TECHNICAL CHARACTERISTICS

- It hardens even in presence of damp.
- Excellent binder property.
- Very good adhesion to the substrate.
- Complies with the requirements according to EN 13813 "Screed material and floor screeds - Screed material - Properties and requirements", which defines the requirements to be applied to materials for screeds used in the construction of internal floors.

ADVANTAGES

- It can be used even on locally lightly damp substrates.
- Versatile, can be used both as a primer and as a binder for epoxy mortars.
- It can be used to make fluid mortars for scratch coats or mortars for screeds.
- Easy to use.
- Suitable for all the **Mapefloor** range of products.

WHERE TO USE

- Primer for epoxy or polyurethane resin systems.
- Adhesion promoter for resin mortar screed systems.
- Binder for epoxy mortar for protective resin screed systems on industrial floors.
- Binder for fluid mortars for reprofiling of concrete surfaces, patches of holes and surface defects, etc.

RECOMMENDATIONS

- Do not apply the product as primer for subsequent epoxy or polyurethane resin systems on substrates with capillary rising damp (please contact our Technical Services Department).

MAPEI

- Do not dilute **Mapefloor I 900** with solvent or water.
- Do not apply **Mapefloor I 900** on dusty or crumbling substrates.
- Do not apply **Mapefloor I 900** on substrates with oil or grease stains or stains in general.
- Do not mix partial quantities of the components to avoid mixing errors; the product may not harden correctly.
- Do not expose the mixed product to sources of heat.
- If rooms where the product is being used need to be warmed up do not use heaters that burn hydrocarbons, otherwise the carbon dioxide and water vapour given off into the air will affect the shine on the finish and affect its appearance. Use electric heaters only.
- Protect the product from water for at least 24 hours after application.
- Do not apply the product directly on substrates with moisture content higher than 5%.
- The temperature of the substrate must be at least 3°C higher than the dew-point temperature. The air relative humidity must be max. 80%.

APPLICATION PROCEDURE

Preparation of the substrate

The surface of concrete floors must be dry or slightly damp, clean and sound and have no crumbling or detached portions.
The minimum compressive strength of the substrate concrete must be 25 N/mm² and its tensile strength must be 1.5 N/mm². The strength of the substrate must also be suitable for its final use and the types of loads to which it will be subjected.
The moisture content in the substrate must be maximum 5% and there must be no capillary rising damp .
The surface of the floor must be prepared with a suitable mechanical process (e.g. shot blasting or a diamond grinding wheel) to remove all traces of dirt, cement laitance and crumbling or detached portions, and to make the surface slightly rough and absorbent. Before applying the coating, remove all dust from the surface with a vacuum cleaner.
Any cracks, holes or surface irregularities must be repaired and smoothed with **Primer SN** fillerized with quartz sand or made thixotropic with **Additix PE**, or **Mapefloor JA** or **Mapefloor JA Fast** depending on the width and depth of defects and cracks. To repair highly deteriorated areas and joints, fill large hollows and to create or slightly modify the slope in confined areas, use **Mapefloor EP19**, pre-dosed three-component epoxy mortar or with epoxy mortar made of **Mapefloor I 900** and quartz sand.

Preparation of the product

Stir component A thoroughly then add the contents of component B and mix with a low-speed electric mixer (300-400 revs/min) for at least 2 minutes until a homogeneous mixture is achieved. Do not overmix the product to prevent entraining too much air.
Pour the mix into a clean container and briefly mix again.
Mapefloor I 900 can be used neat as primer for subsequent epoxy or polyurethan resin systems or it can be mixed with kiln dried quartz sands to create epoxy mortars for surface reprofiling, patches or for protective resin screed systems.
Proceed as follows:
Mortar for surface reprofiling
To make fluid mortar for scratch coats and surface reprofiling of rough floors, mix **Mapefloor I 900** with **Quartz 0.5** at a resin:sand ratio up to 1:1 by weight depending on the temperature and the roughness of the substrate.
Mortar for resin screed systems
Mix **Mapefloor I 900** with suitable granulometry quartz sand, for instance **Quartz 1.9**, at a resin:sand mixing ratio of 1:10 – 1:13 by weight. To make mortars for patches of holes, joints etc. is possible to vary the quantity of sand depending on the consistency and workability desired. For the mixing operation use suitable mixers for resin mortars, adding first the sand then, while mixing, slowly pour the resin binder and continue to mix until a homogeneous mortar consistency is obtained.
Apply the mixture within the pot life indicated in the table (refers to a temperature of +23°C). Higher surrounding temperatures will reduce the pot life of the mixture, while lower temperatures will increase it.

Application of the product

When used as primer for subsequent resin systems from the Mapefloor range, apply 1-2 neat coats of **Mapefloor I 900** by medium-piled roller until the pores of the surface of the substrate are completely filled obtaining an even thin layer of resin.

In case of rough surfaces, pour on the floor the fluid mortar for reprofiling prepared as before mentioned and spread it as a scratch coat by straight trowel over the entire surface.
Broadcast with quartz sand the still wet surface of the resin if necessary, depending on the kind of system to apply.
When used as an adhesion promoter for resin mortar screeds, apply 1-2 neat coats of **Mapefloor I 900** generously by medium-piled roller until the pores of the surface of the substrate are completely filled obtaining an even layer of resin; then pour the resin mortar, prepared as before described, on the still wet layer of primer and spread it out on an even thickness by pin rake, straight edge and screed rails or similar tools. Smooth and compact the still wet mortar by power floater or manually by flat trowel. The thickness of the screed rails must consider the compacting and smoothening operation phases.
Once the mortar has hardened, apply at least two scratch coats of high solid content epoxy resin, such as **Mapefloor I 300 SL**, to fill and seal the surface porosity of the screed. In case a slip resistant surface profile is required, broadcast with suitable granulometry quartz sand between the two scratch coats of resin.

CLEANING TOOLS

Tools used to prepare and apply **Mapefloor I 900** must be cleaned with alcohol immediately after use. After hardening, the product may only be removed using mechanical means.

CONSUMPTION

Primer for resin systems:
1-2 coats
Mapefloor I 900 0.2-0.3 kg/m² per coat

Binder for fluid mortar for surface reprofiling:
Mapefloor I 900 0.5-0.7 kg/m² per layer
The consumption of **Quartz 0.5** depends on the filler rate.

Primer and adhesion promoter for resin mortar:
1-2 coats
Mapefloor I 900 0.5-0.7 kg/m² per coat

Binder for epoxy mortar:
Mapefloor I 900 + 0.15-0.17 kg/m² per mm of thickness
Quartz 1.9* 1.5-1.7 kg/m² per mm of thickness
** considering a filler rate of 1:10 by weight*

The consumption rates above are for indication purposes only and are influenced by the condition of the surface to be treated, the roughness and absorbency of the substrate, the type of sand used to mix the epoxy mortar, the actual conditions on site, etc. We recommend carrying out preliminary tests with the quarts sand and relative filler rates that will actually be used on site.

PACKAGING

15 kg units: component A = 10 kg; component B = 5 kg

STORAGE

24 months in its original sealed packaging in a dry place at a temperature of +5°C to +30°C. Protect from frost.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website www.mapei.com.
When the product reacts, it generates considerable heat. After mixing components A and B we recommend applying the product as soon as possible and to never leave the container unguarded until it is completely empty.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY	component A	component B
Colour:	neutral	straw-coloured
Appearance:	liquid	liquid
Density:	1.20 g/cm³	0.99 g/cm³
Viscosity at +23°C:	1,500 mPa·s	200 mPa·s

APPLICATION DATA (at +23°C and 50% R.H.)	
Mixing ratio:	component A : component B = 100 : 50
Colour of mix:	transparent, amber
Consistency of the mix:	thick fluid
Dry solid content:	approx. 100 %
Density of the mix:	1,100 kg/m³
Viscosity of the mix:	1,000 mPa·s
Pot life:	30 min.
Surface temperature:	from +8°C to +35°C

FINAL PERFORMANCES OF THE RESIN (A+B)	
Hardening at +23°C and 50% R.H.:	
- dust dry	2-4 hours
- set to light foot traffic:	12 hours
- complete hardening time:	7 days
Shore D hardness (DIN 53505):	81
Bond strength (EN 1542):	≥ 1.5 MPa (concrete failure)

FINAL PERFORMANCES OF THE MORTAR - made of MAPEFLOOR I 900 with QUARTZ 1.9 - 1:10 by weight	
Flexural strength (after 7 days at +23°C) (EN 196-1):	21 N/mm²
Compressive strength (after 7 days at +23°C) (EN 196-1):	65 N/mm²
Reaction to fire class (EN 13501-1):	B_{FL} - s1

Essential characteristic (binder A+B)	Test method	Requirements according to EN 13813 for synthetic resin-based screeds	Typical values
BCA wear-resistance:	EN 13892-4	≤ AR6	AR0.5
Bond strength:	EN 13892-8	≥ B1.5	≥ B2.0
Impact strength:	EN ISO 6272	≥IR4	IR20
Reaction to fire class:	EN 13501-1	from $A1_{FL}$ to F_{FL}	E_{FL}

The times above are for indication purposes only and are influenced by actual site conditions (e.g. temperature of the surroundings and substrate, relative humidity of the surrounding air, etc.).

WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.
Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

LEGAL NOTICE

TECHNICAL SPECIFICATIONS

Supply and installation of high solid epoxy resin (such as **Mapefloor I 900** by Mapei S.p.A.) suitable as primer adhesion promoter or binder for fluid epoxy mortars for surface reprofiling or, mixed with suitable kiln dried quartz sand up to 1.9 mm size (such as **Quartz 1.9** by Mapei S.p.A.) at mixing ratio binder:sand of 1:10 by weight, for epoxy mortars for resin screed systems.
The resin product must have the following characteristics:

Dry solid content:	approx. 100 %
Density of the mix:	1,100 kg/m³
Viscosity of the mix:	1,000 mPa·s
Shore D hardness (DIN 53505):	81
Bond strength (EN 13892-8):	≥ 2.5 N/mm²
Wear resistance BCA (EN 13892-4):	13 µm
Impact resistance (EN ISO 6272):	20 Nm

The epoxy mortar made using the epoxy resin binder mixed with 10 parts by weight quartz sand up to 1.9 mm granulometry must have the following characteristics:

Flexural strength (after 7 d at +23°C) (EN 196-1):	21 N/mm²
Compression strength (after 7 d at +23°C) (EN 196-1):	65 N/mm²
Reaction to fire class (EN 13501-1):	B_{FL}-s1

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