MAPEI

Mapecoat BS 1

Two-component, flexible, abrasion-resistant, epoxy-polyurethane resin-based coating for protecting and waterproofing concrete structures

WHERE TO USE

Flexible, waterproofing and abrasion-resistant coating to be applied on any concrete surface, to impede aggressive materials (such as chloride, oils and hydrocarbons) from penetrating into the concrete.

Some application examples

- Protective coating for bridge kerbs to prevent the penetration of de-icing salts and to increase freeze/thaw resistance.
- Waterproof coating for concrete pavements on bridges and pedestrian overpasses.
- Waterproofing flat roofing including those subjected to vehicular traffic, where no further surface treatment is anticipated.
- Flexible coating of concrete surfaces subject to high mechanical stresses and movement, such as entrance ramps, multi-storey car parks and floors in car parks.

TECHNICAL CHARACTERISTICS

Mapecoat BS 1 is a two-component, flexible, wear-resistant epoxy-polyurethane coating produced according to a special formula developed in MAPEI's own Research Laboratories.
Thanks to its flexibility, **Mapecoat BS 1** is able to seal cracks up to 4 mm wide at temperatures as low as –20°C.
Once it has set, **Mapecoat BS 1** bonds perfectly to concrete, provided the latter has been treated beforehand with a primer. It also has good resistance against impact and chemical agents.

RECOMMENDATIONS

- Do not use **Mapecoat BS 1** for expansion joints (use **Mapeflex PU20** or **Mapeflex PU55 SL**).
- Do not dilute **Mapecoat BS 1** with solvents or water.
- Do not apply **Mapecoat BS 1** on damp substrates or on substrates which are subject to capillary-action rising damp.
- Do not apply **Mapecoat BS 1** on dusty or crumbly surfaces.
- Do not use partial amounts of the components to avoid the risk of accidental blending ratio errors which could adversely affect the setting of the product.
- Once blended, do not expose the product to sources of heat.
- **Mapecoat BS 1 surface must always be protected from ultraviolet rays; it is therefore recommended to always blind fresh final layer with 0.5 Quartz or, alternately, to apply a protective polyurethane aliphatic finishing, especially when the product is to be applied externally.**

APPLICATION PROCEDURE

Preparation of the substrate

The surfaces to be treated must be smooth, clean and dry and must not be subject to capillary-action rising damp.
Any cement laitance and dust which may be present on the substrate must be removed mechanically.
The substrate must be strong enough to withstand the foreseen service loads, and must have a tensile strength of at least 1.5 N/mm^2.
Prior to the application of the product, any cracks present must be sealed with **Eporip** or **Epojet**.

Mapecoat BS 1

Damaged concrete surfaces must be repaired with a product from the **Mapegrout** range or with an epoxy mortar such as **Planigrout 300** or **Mapefloor System 91**.

Preparation of Primer MF
The two components which make up **Primer MF** are supplied in pre-measured quantities:

– component A : 3 parts by weight;

– component B : 1 part by weight;

and must be completely and thoroughly mixed together with a low-speed stirrer until a uniform blend is obtained.

Application of Primer MF
Apply successive coats of **Primer MF** with a roller or a brush without leaving puddles on the surface, in order to completely seal the surface porosity of the substrate.
Mapecoat BS1 may be applied either on fresh or hardened **Primer MF**.
When **Mapecoat BS1** is applied on fresh **Primer MF**, within no more than 4-6 hours according to the temperature, it is not necessary to cover the surface with sand; however, if the product is to be applied on the primer after it has set, the correct procedure is as follows:

- saturate the substrate with **Primer MF**;
- blind the surface with quartz sand (**0.25 Quartz** or **0.5 Quartz**) whilst still fresh;
- when **Primer MF** has set, after approx. 24 hours at +20°C, remove any loose sand by vacuuming;
- apply the first coat of **Mapecoat BS1**.

Preparation of Mapecoat BS 1
The two components which make up **Mapecoat BS 1** must be mixed together. Pour component B (hardener) into component A (resin) and blend together with a low-speed drill to avoid entraining air until a homogenous mix is obtained.
Mapecoat BS 1 must be applied in two coats.
If **Mapecoat BS1** is to be applied onto vertical surfaces, add 5% by weight of **Additix PE** to the mix, thickening and thixotropic admixture for epoxy and polyurethane products.

Application of Mapecoat BS 1
- *1st layer:*
  After applying **Primer MF**, mix together the two components which make up **Mapecoat BS 1** and spread out the product at a thickness of at least 1 mm with a trowel. Pass over the surface with a spiked roller to remove any air entrapped into the product during its application.
- *2nd layer:*
  The second layer can be spread after a period of approximately 7 hours up to 4 days (at a temperature of +23°C) after the first layer has been applied, according to the following procedure: mix the two components of **Mapecoat BS 1** with a low speed drill, then add **0.5 Quartz**, at a ratio of 1: 0.5. The thickness of the second layer must not be less than 1 mm.

Blind the surface of **Mapecoat BS 1** with **0.5 Quartz** whilst it is still fresh.

Cleaning
Tools and clothing must be cleaned with ethyl alcohol while the product is still fresh.
Once set, the product may only be removed mechanically.

CONSUMPTION

Primer MF
approx. 0.3-0.4 kg/m^2.

Mapecoat BS 1
approx. 2.2. kg/m^2 for two coats (2 mm thickness)

0.5 Quartz
approx. 6.5 kg/m^2 to sprinkle and prepare the mixture with **Mapecoat BS 1**.

PACKAGING
Units of 10 kg:
component A = 8.1 kg;
component B = 1.9 kg.

STORAGE
The product remains stable for 12 months if stored in a cool, dry covered area at a temperature between +5°C and +30°C.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION
Mapecoat BS 1 component A is irritant to eyes and skin.
Mapecoat BS 1 component B is corrosive and may cause serious burns and is harmful by inhalation.
Both components A and B may cause a sensitising reaction in those who suffer from such a complaint.
Wear protective clothes and products, protective gloves and goggles. If it comes into contact with eyes, wash with plenty of water and seek medical advice.
Mapecoat BS 1 component A is dangerous to aquatic organisms - avoid release to the environment.

PRODUCT FOR PROFESSIONAL USE.

WARNING
While the indications and guidelines contained in this data sheet correspond to the company's knowledge and wide experience, they must be considered, under all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use this product, must ensure beforehand that it is suitable for the intended application and, in all cases, the user is to be held responsible for any consequences deriving from its use.

All relevant references of the product are available upon request

TECHNICAL DATA (typical values)

PRODUCT IDENTITY		
	COMPONENT A	**COMPONENT B**
Consistency:	viscous liquid	liquid
Colour:	light grey	yellow/orange
Dry solids content (according to ISO 1515) (%):	93	74
Brookfield viscosity at +23°C (according to EN 535) (mPa·s):	14,500	75
Storage:	12 months in its original packaging in a dry place at temperatures between +5°C and +30°C	
Hazard classification according to EC 99/45:	irritant, dangerous to the environment Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packing and Safety Data Sheet	corrosive
Customs class:	3907 30 00	
APPLICATION DATA (at +23°C and 50% R.H.)		
Colour of mixture:	yellowish	
Mixing ratio:	component A : component B = 4.3 : 1	
Density of the mix (according to ISO 2811) (kg/m³):	1,200	
Dry solids content (according to ISO 1515) (%):	90	
Brookfield viscosity of mix (according to EN 535) (mPa·s):	4,200	
Pot life (min):	45	
Dust dry (h):	7	
Application temperature range:	from +10°C to +35°C	
Waiting time between first and second coat:	from 7 hours to 4 days	
Set to light foot traffic (h):	24	
Curing at a depth of 2 mm (h):	12	
FINAL PERFORMANCES		
Adhesion to concrete (according to ISO 10365) (N/mm²):	> 2 (concrete failure)	
Shore A-hardness (according to ISO 868): **– after 7 days at +23°C:** **– after 7 days at +23°C - tested at –20°C:**	 69 75	
Tensile strength (according to DIN 53504) (N/mm²): **– after 7 days at +23°C:** **– after 7 days at +23°C - tested at –20°C:**	 4.8 11.6	
Elongation at breaking point (according to DIN 53504) (%): **– after 7 days at +23°C:** **– after 7 days at +23°C – tested at –20°C:**	 400 150	
Tear strength (according to ISO 34-1) (N/mm) **– after 7 days at +23°C:** **– after 7 days at +23°C - tested at –20°C:**	 26 46.8	
Resistance to abrasion (CS-17 MOLA, 100 rev, 1 kg, 2 mm thickness) (mg): **– after 7 days at +23°C:** **– after 7 days at +23°C + 7 days at +50°C:**	 3.0 (as loss in weight) 0 (as loss in weight)	
Static cracking (according to UT 2-3406 M2) **– 2 mm thickness: first layer whether as is + second layer loaded with 50% 0.5 Quartz (tested at –20°C):**	no cracking for cracks of up to 4 mm	

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