MAPEFLOOR I 300 SL

Two-component, multi-purpose, epoxy formulate to form coatings up to 4 mm thick for industrial floors, in compliance with current standards applied to food stuff industries and to the Radon gas tightness

WHERE TO USE

Mapefloor I 300 SL is a two-component epoxy formulate, with a high solid content, used to form self-levelling or multi-layered resin coatings with an attractive smooth or non-slip surface.
Mapefloor I 300 SL may be used as a coating of floors in:
· chemical and pharmaceutical industries;
· food and beverages industries;
· laboratories, aseptic rooms, sterile rooms and hospitals;
· offices, museums, shopping centres, showrooms;
· automated warehouses;
· hangars, aviation or automotive industries;
· nuclear industry.

TECHNICAL CHARACTERISTICS

Mapefloor I 300 SL is a two-component, nonylphenolfree, fillerized epoxy resin-based formulate with a high solid content, according to a formula developed in the MAPEI R&D Laboratories.
It complies with standards applied in the food and beverages sectors - EN 1186, EN 13130 and prCEN/TS 14234 - as well as the Decree of Consumer Goods, which is the conversion of the European directives 89/109/EEC, 90/128/EEC and 2002/72/EC for contact with foodstuffs.
It fulfills the Legislative Decree of the Government No. 193/2007 “EC Regulation 852/2004 concerning the hygiene of food products” (H.A.C.C.P)
Coatings made with **Mapefloor I 300 SL** prevent Radon (radioactive natural gas present in the soil) from penetrating inside buildings. Compliant with DIN ISO/TS 11665-13 standards, verified and certified by the IAF accredited laboratory for radionuclide analysis.
Mapefloor I 300 SL complies with the principles defined in EN 13813 “*Screeds and materials for screeds - Materials for screeds - Properties and requirements*”, which specifies the requirements for screed materials used in the construction of internal floors.
Mapefloor I 300 SL is used to create seamless coatings with an attractive finish, in layers up to 4 mm thick.
Mapefloor I 300 SL is strong, has good resistance to chemical products and abrasion and may be used in both self-levelling and multi-layered systems. Coatings created with **Mapefloor I 300 SL** are decontaminable as per ISO 8690/1998 with contaminants ^{137}Cs and ^{60}Co.
Mapefloor I 300 SL can be supplied in pre-coloured version or in neutral version to be coloured at the time of use with **Mapecolor Paste**. For the full range of colours available please contact the Head Office.

RECOMMENDATIONS

· Do not apply **Mapefloor I 300 SL** on damp substrates or on substrates with capillary rising damp (contact MAPEI Technical Services Department).

· Do not dilute **Mapefloor I 300 SL** with solvent or water.
· Do not apply **Mapefloor I 300 SL** on dusty or crumbling substrates.
· Do not apply **Mapefloor I 300 SL** on substrates with oil or grease stains or stains in general.
· Do not apply **Mapefloor I 300 SL** on substrates which have not been treated with **Primer SN** or which have not been prepared as specified.
· 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.
· We recommend adding **Mapecolor Paste** from the same production batch to guarantee an even colour.
· Do not add **Mapecolor Paste** if the product is supplied ready-coloured.
· Coatings made from **Mapefloor I 300 SL**, due to its epoxy chemical nature, may change colour or fade if exposed to sunlight, but this has no effect on its performance characteristics.
· The coating may also change colour if it comes into contact with aggressive chemicals. A change in colour, however, does not mean that it has been damaged by the chemical.
· Remove aggressive chemicals as soon as possible after they come into contact with **Mapefloor I 300 SL**.
· If rooms where the product is being used need to be warmed up do not use heaters that burn fossil fuels; the carbon dioxide and water vapour given off into the air will affect the shine of the finish and affect its appearance. Use electric heaters only.
· Use suitable specific cleaning equipment and detergent to clean the coating, depending on the type of dirt or stain to be removed.
· 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 4% (check by testing it with a sheet of polythene).
· The temperature of the substrate must be at least 3°C above dew-point.

APPLICATION PROCEDURE

Preparation of the substrate

The surface of concrete must be dry, clean and sound and have no crumbling or detached areas. The min. compressive strength of concrete substrates must be 25 N/mm² and its tensile strength must be at least 1.5 N/mm². The substrate must also be strong enough for its final intended use and to withstand the types of loads acting on the floor.
The level of moisture in the substrate must be maximum 4% and there must be no capillary rising damp (check by testing it with a sheet of polythene).
The surface of the floor must be prepared with suitable mechanical equipment (e.g. shot-blasting or grinding with a diamond discs), 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 product remove all dust from the surface with a vacuum cleaner.
Any defects present in the surface, such as holes, pitting, cracking, etc., must be repaired 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 the defects or 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.

Application of Primer SN

Apply the **Primer SN** as it is or mixed with **Quartz 0.5** on the substrate after it has been prepared as specified with a straight trowel. Immediately after applying the product, broadcast (lightly or fully) the surface of **Primer SN** while still wet (see points 1, 2 and 3), with **Quartz 0.5** to ensure the next coat of resin adheres perfectly.

Preparation of the product

The two components which make up **Mapefloor I 300 SL** must be blended together just before application. Stir component A thoroughly, pour all the contents of component B into component A, add 8-9% by weight of **Mapecolor Paste** colouring paste and, if required, the amount of quartz sand needed. Mix again for at least 2 minutes with a suitable electric mixer at low-speed to prevent entraining air into the mix (300-400 revs/min), until it is completely blended.
Pour the mix into a clean container and briefly mix again.
Do not mix the product for too long to avoid entraining too much air into the mix.
Apply the mix within the pot life indicated in the data table (refers to a temperature of +23°C). Higher surrounding temperatures will reduce the pot life of the mix, while lower temperatures will increase its pot life.

Application of the product

Mapefloor I 300 SL may be used to form non-slip multi-layered coatings (from 0.8 to 3.5 mm thick) and smooth self-levelling coatings (from 2 to 4 mm thick). The application procedures are as follows:

1. *Multi-layered non-slip coating - 0.8-1.2 mm thick (Mapefloor System 31)*
· Prepare the substrate as specified (we recommend shot-blasting or rough grinding with a diamond disc), and remove all dust with a vacuum cleaner.
· Prepare the **Primer SN** (A+B), add around 3.5% by weight of **Mapecolor Paste** and around 20% by weight of **Quartz 0.5**, apply the mix over the entire surface with a straight trowel and blend in down to a feather edge. Immediately after applying the primer and while it is still wet, broadcast in excess the surface with **Quartz 0.5**. In certain cases, for example if a higher degree of non-slip finish is required, add quartz sand with larger particles. In such cases the consumption rate of the next finishing coat will be higher.
· When the primer has hardened remove any excess sand, sand the surface and remove any remaining grains of sand with an industrial-grade vacuum cleaner.

· Add to the previously prepared mix of **Mapefloor I 300 SL**, a rate of around 5-6% by weight of **Quartz 0.25** and mix until completely blended. Apply the finishing coat with a straight steel or rubber trowel, blend in down to a feather edge and go over the surface with a short-pile roller in in two directions at right angles to each other. Alternatively, apply the mix directly on the surface with a medium-piled roller using in two directions at right angles to each other.

2. ***Multi-layered non-slip coating - 3-3.5 mm thick (Mapefloor System 32)***
· Prepare the substrate as specified (we recommend shot-blasting or rough grinding with a diamond disc), and remove all dust with a vacuum cleaner.
· Prepare the **Primer SN** (A+B), add around 20% by weight of **Quartz 0.5**, apply the mix over the entire surface with a straight trowel and blend in down to a feather edge. Immediately after applying the primer and while it is still wet, broadcast in excess the surface with **Quartz 0.5**.
· When the primer has hardened remove any excess sand, sand the surface and remove any remaining particles of sand with an industrial-grade vacuum cleaner.
· Add to the previously prepared mix of **Mapefloor I 300 SL**, a rate of around 35-40% by weight of **Quartz 0.50** and mix until completely blended. Pour the product onto the floor and spread it out evenly with a straight steel trowel. Immediately after applying the resin and while it is still wet, broadcast in excess the surface with **Quartz 0.5**.
· For particular requirements, such as if a higher degree of non-slip finish is required, broadcast with a larger particle size may be used. In such cases the consumption rate of the next finishing coat will be higher.
· When the resin has hardened remove any excess sand, sand the surface and remove any remaining particles of sand with an industrial-grade vacuum cleaner. Add to the previously prepared mix of **Mapefloor I 300 SL**, a rate of around 5-6% by weight of **Quartz 0.25** and mix until completely blended. Apply the finishing coat with a straight steel or rubber trowel, blend in down to a feather edge and go over the surface with a short-pile roller in in two directions at right angles to each other. Alternatively, apply the mix directly on the surface with a medium-pile roller using in two directions at right angles to each other.

3. ***Smooth self-levelling coating - thickness 2-4 mm (Mapefloor System 33)***
· Prepare the substrate as specified (we recommend shot-blasting or rough grinding with a diamond disc), and remove all dust with a vacuum cleaner.
· Prepare **Primer SN** (A+B), add around 20% by weight of **Quartz 0.5**, apply the mix over the entire surface with a trowel and blend in down to a feather edge. Immediately after applying the primer and while it is still wet, lightly broadcast the surface with **Quartz 0.5** at a rate of around 0.7-1.0 kg/m². Make sure there are no open pores in the surface of the substrate, otherwise air bubbles could escape and form small craters or pinholes in the self-levelling finishing coat. If there are any open pores in the substrate, apply a second skim coat of **Primer SN** as previously described and lightly broadcast the surface with **Quartz 0.5**.
· Once the primer has hardened, remove any loose sand and carefully vacuum the surface. Mix the previously prepared **Mapefloor I 300 SL** and add more **Quartz 0.25** at a rate of up to 1:1 by weight. The amount of sand must be evaluated according to the temperature and the thickness to be applied. With the increase of temperature and thickness, the quantity of quartz sand to be added can increase. Mix again to form a well-blended paste, pour the product onto the floor and spread it out evenly with a notched spreader with "V" shaped teeth. Go over the surface with a spike roller several times while the product is still wet to remove any air entrapped in the product.

N.B.: *the examples above are for indication purposes only. The amount of sand added to the* ***Primer SN*** *may vary according to the surrounding temperature and to the roughness of the substrate. The amount required may be less at lower temperatures and more at higher temperatures.*

CONSUMPTION

1. *Multi-layered non-slip coating - average thickness 1 mm (****Mapefloor System 31****)*
1° layer:

Primer SN (A+B + **Mapecolor Paste**):	0.7 kg/m²
Quartz 0.5:	0.14 kg/m²
Broadcast in excess with **Quartz 0.5**:	3.0 kg/m²

Finish:

Mapefloor I 300 SL (A+B + **Mapecolor Paste**):	0.6 kg/m²
Quartz 0.25:	0.04 kg/m²

* If pre-coloured **Mapefloor I 300 SL** is used, **Mapecolor Paste** is not required.

2. *Multi-layered non-slip coating - average thickness 3 mm (****Mapefloor System 32****)*
1° layer:

Primer SN (A+B)	0.7 kg/m²
Quartz 0.5:	0.14 kg/m²
Broadcast in excess with **Quartz 0.5**:	3.0 kg/m²

2° layer:

Mapefloor I 300 SL (A+B + **Mapecolor Paste**):	0.9 kg/m²
Quartz 0.5:	0.34 kg/m²
Broadcast in excess of **Quartz 0.5**:	3.0 kg/m²

* If pre-coloured **Mapefloor I 300 SL** is used, **Mapecolor Paste** is not required.

Finish:

Mapefloor I 300 SL (A+B + **Mapecolor Paste**):	0.6 kg/m²
Quartz 0.25	0.04 kg/m²

* If pre-coloured **Mapefloor I 300 SL** is used, **Mapecolor Paste** is not required.

3. *Smooth self-levelling coating - average thickness 2 mm (**Mapefloor System 33**)*
1° layer:

Primer SN (A+B)	0.7 kg/m²
Quartz 0.5:	0.14 kg/m²
Lightly broadcast with **Quartz 0.5**:	0.7-1 kg/m²

Self-levelling layer:

Mapefloor I 300 SL (A+B + **Mapecolor Paste**)	2.0 kg/m²
Quartz 0.25	2.0 kg/m²
resin: sand ratio	*1:1 by weight*

* If pre-coloured **Mapefloor I 300 SL** is used, **Mapecolor Paste** is not required.

The consumption rates mentioned above are theoretical values only and refer to the use of **Quartz 0.5** to broadcast the surface and to the mixing ratios for **Mapefloor I 300 SL** and **Quartz 0.25** and **Quartz 0.5** as indicated in the list above. These factors and, as a result, the relative consumption rates for the materials, are influenced by the actual conditions of the surfaces to be coated, such as absorbency and roughness, surrounding conditions, type of site, etc.

Cleaning tools

Clean tools used to prepare and apply **Mapefloor I 300 SL** with ethanol or thinners immediately after use. Once hardened, the product may only be removed using mechanical means.

PACKAGING

20 kg kit (component A = 15 kg; component B = 5 kg).

STORAGE

24 months in its original sealed packaging, in a dry place at a temperature between +5°C to +35°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 heat. After mixing components A and B, we recommend applying the product as soon as possible and never leaving the container unattended until it is completely empty.
PRODUCT FOR PROFESSIONAL USE

TECHNICAL DATA (typical values)			
PRODUCT IDENTITY			
		component A	component B
Colour:		neutral or RAL colours	straw yellow
Consistency:		liquid	liquid
Density (g/cm³):		1.5	1.0
Viscosity at +23°C (mPa·s):		4000 ± 1 000 (# 4 - 20 rpm)	200 ÷ 300 (# 2 - 50 rpm)
APPLICATION DATA (at +23°C and 50% R.H.)			
Mixing ratio:		comp. A : comp. B = 3 : 1	
Colour of mix:		neutral or RAL colours	
Consistency of mix:		fluid	
Density of mix (kg/m³):		1,340	
Viscosity of mix at +23°C (mPa·s):		800 ÷ 1200 (# 4 - 50 rpm)	
Workability time at +20°C:		35 mins.	
Application temperature:		from +8°C to +35°C (refers to the surroundings, material and substrate)	
Recoat time at +23°C and 50% R.H.: – on Primer SN broadcast with quartz sand: – on Primer SN lightly broadcast with quartz sand:		min. 12 hours no maximum limit* min. 18 hours max. 24 hours *surfaces must be dry and clean with no dust	
Hardening time at +23°C and 50% R.H.: – dust dry: – set to foot traffic: – complete hardening:		2-4 hours approx. 24 hours approx. 7 days	
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.)			
FINAL PERFORMANCE			
Compressive strength (N/mm²) (EN 196-1):		67 (product fillerized with 1:1 by weight of **Quartz 0.25**)	
Flexural strength (N/mm²) (EN 196-1):		28 (product fillerized with 1:1 by weight of **Quartz 0.25**)	
Taber Test after 7 days (EN ISO 5470-1) (at +23°C, 50% R.H, 1,000 cycles/1,000 g, CS17 disk) (mg):		approx. 70	
Shore D (DIN 53505)		78	
Essential characteristics	Test method	Requirements according to EN 13813 for synthetic resin-based screeds	Typical values

BCA wear resistance:	EN 13892-4	≤ 100 µm	10 µm
Adhesion strength:	EN 13892-8; 2004	≥ 1.5 N/mm²	3.10 N/mm² (failure of concrete)
Impact strength:	EN ISO 6272	≥ 4 Nm	20 Nm
Capillary absorption and water permeability:	EN 1062-3	value declared	w 0.002 (kg/m²·$h^{0.5}$)
Reaction fire:	EN 13501-1	value declared	B_{FL}-s1
Performance characteristic gas Radon		**Test method**	**Typical values**
Determination of the Radon diffusion coefficient:		DIN ISO/TS 11665-13	R > 3

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

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