



Mapefloor CPU/MF



Three-component high-strength polyurethane/cement-based self-levelling mortar with high resistance to chemicals for coating industrial floors in layers from 3 to 6 mm thick. Complies with standards applied in the foodstuffs sector



WHERE TO USE

Mapefloor CPU/MF is a three-component polyurethane/cement-based formulate used to create protective coatings on industrial floors subjected to medium to heavy traffic and high chemical aggression.

Some application examples

- Coating floors in the chemical and pharmaceutical industries.
- Coating floors in the foodstuffs industry.
- Coating floors in wineries, breweries and beverage industry in general.

TECHNICAL CHARACTERISTICS

Mapefloor CPU/MF is a three-component formulate made from cement, selected aggregates and polyurethane resin according to a formula developed in the MAPEI research laboratories.

Mapefloor CPU/MF complies with standards applied in the foodstuffs sector EN 1186, EN 13130 and prCEN/TS 14234, as well as the Decree Of Consumer Goods that represent the conversion of European directive 89/109/EEC, 90/128/EEC and 2002/72/EC regarding contact with foodstuffs.

Mapefloor CPU/MF is used to create seamless coatings from 3 to 6 mm thick characterised by high resistance to chemicals such as acids, basic solutions, grease, saline solutions, hydrocarbons, etc. A 6 mm thick coat of **Mapefloor CPU/MF** has excellent resistance to thermal shocks of up to +70°C, such as when cleaning with hot water is carried out. The in-service temperature for a 6 mm thick coating of **Mapefloor CPU/MF** varies from -40°C to +70°C. Thanks to its high mechanical strength and resistance

to abrasion, **Mapefloor CPU/MF** is suitable for floors subjected to heavy traffic. Coatings made from **Mapefloor CPU/MF** are easy to clean and have a smooth finish or, if required, a rough, non-slip finish.

COLOURS AVAILABLE

Mapefloor CPU/MF is a neutral colour and must be coloured on site at the moment it is applied by adding **Mapecolor CPU** which is available in grey, beige, oxide red, green and ochre yellow.

RECOMMENDATIONS

- Do not apply **Mapefloor CPU/MF** on substrates with a film of surface water or on concrete within 10 days of pouring.
- Do not dilute **Mapefloor CPU/MF** with solvent or water.
- Do not apply **Mapefloor CPU/MF** on dusty or crumbling substrates.
- Do not apply **Mapefloor CPU/MF** on substrates with oil or grease stains or stains in general.
- Do not apply **Mapefloor CPU/MF** on substrates that have not been prepared according to specification.
- 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.
- Do not apply **Mapefloor CPU/MF** on ceramic substrates or stone materials in general.
- **Mapefloor CPU/MF** coatings change colour if exposed to sunlight but this has absolutely no effect on their 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 if they come into contact with **Mapefloor CPU/MF**.
- Use suitable specific cleaning equipment and detergent to clean the coating, depending on the type of dirt or stain to be removed.
- Protect the coating from water for at least 24 hours after application.
- The temperature of the substrate must be at least 3°C higher than the dew-point temperature.

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. Concrete must have been poured at least 10 days before applying the coating, its compressive strength must be at least 25 N/mm² and its tensile strength must be at least 1.5 N/mm². The strength of the substrate must also be suitable for its final use and the types of load to which it will be subjected.

The surface of the floor must be prepared with a suitable process (e.g. shot-blasting or grinding) to remove all traces of dirt and cement laitance and crumbling or detached portions, and to make the surface rough and absorbent. Before applying the coating, remove all dust from the surface with a vacuum cleaner.

Repair cracks by filling them with **Eporip** and repair areas of the concrete in poor condition with **Mapefloor CPU/MF**, **Mapefloor EP19** or with a cementitious mortar from the **Mapegrout** line.

Before applying **Mapefloor CPU/MF** remove all traces of dust from the surface with a vacuum cleaner.

Create anchoring grooves around the edge of the area to be coated and in proximity to all vertical elements such as walls, pillars, cable troughs, drains, etc. Grooves must also be created if application of the coating is interrupted, such as alongside joints when work finishes for the day or when starting work again. The width and depth of the grooves must be around twice the thickness of the **Mapefloor CPU/MF** coating to be applied.

Application of primer

Before applying **Mapefloor CPU/MF**, treat the surface with a coat of primer to saturate the porosity of the substrate. Use **Primer SN** mixed with 20-30% in weight of **Quartz 0.5** for this operation. Pour the mixture on the surface of the clean, de-dusted floor and spread it to a feather edge with a smooth steel trowel. Immediately after applying the primer, broadcast with 0.3 mm-0.9 mm quartz sand. Wait until **Primer SN** has completely hardened before removing any excess sand and applying **Mapefloor CPU/MF**. Please refer to the **Primer SN** Technical Data Sheet for further information on its use and application.

As an alternative to **Primer SN**, apply a thin layer of **Mapefloor CPU/MF** skimmed

to a feather edge. The product must be completely hardened before applying the final coat of **Mapefloor CPU/MF**. Wait at least 12 hours at +20°C, depending on the actual site conditions; the scratch coat of **Mapefloor CPU/MF** must never be sticky. A coat of primer or skim coat is not required on substrates that are not particularly porous if the coat of **Mapefloor CPU/MF** is broadcast with quartz sand to obtain a non-slip finish.

Preparation of the product

Pour component A into a large, clean container and, after mixing it, add component B and mix again with an electric mixer at low speed until it is completely blended. Then add **Mapecolor CPU** powder colouring agent slowly and gradually (one 5 kg bag of **Mapecolor CPU** for every kit of **Mapefloor CPU/MF A+B**) and then slowly and gradually add all the content of component C and continue mixing until an even coloured mix is obtained. We recommend a specific low speed mortar mixer for this operation, such as a vertical mixer or a mixer with static blades and a rotating mixing drum. Apply the mix within the pot life indicated in the table (refers to a temperature of +20°C). Higher surrounding temperatures will reduce the pot life of the mix, while lower temperatures will increase its pot life.

Application of the product

Smooth self-levelling coating

Pour **Mapefloor CPU/MF** onto the floor and spread it out evenly to the thickness required, from 3 to 6 mm, with a smooth or notched trowel or a float with spacers. Immediately after applying **Mapefloor CPU/MF**, backroll intensively with a spiked-roller to remove entrapped air and reach an even surface.

Rough broadcast coating

Pour **Mapefloor CPU/MF** onto the floor and spread it out evenly to the thickness required, from 3 to 6 mm, with a smooth or notched trowel or a float with spacers. Immediately after spreading **Mapefloor CPU/MF**, broadcast with **Quartz 0.5** to obtain a rough surface finish. To obtain an even rougher finish with better non-slip properties, quartz sand with a larger particle size may be used. When the **Mapefloor CPU/MF** has completely hardened, remove the excess sand and saturate the surface by applying **Mapefloor CPU/TC** polyurethane/cement-based free-flowing coloured mortar with a roller or trowel. We recommend using **Mapefloor CPU/TC** in the same or a similar colour to the **Mapefloor CPU/MF** undercoat to get the best cover and most regular, evenly coloured finish possible.

We recommend applying the product so that each batch is applied immediately after the previous one while it is still wet and workable to reduce the number of joint marks.

CONSUMPTION

1. Smooth self-levelling coating - thickness 3-6 mm

Primer:

Primer SN (A+B

+ **Quartz 0.5):**

Broadcast of 0.3-0.9 mm

with quartz sand while still wet: 3 kg/m²

0.7-0.8 kg/m²

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

	base			pigment
	comp. A	comp. B	comp. C	Mapecolor CPU
Colour:	milky white	amber	whitish	grey - beige - red - green - ochre yellow
Appearance:	liquid	liquid	powder	powder
Density (g/cm³):	1.05	1.2	-	-
Bulk density (g/cm³):	-	-	1.15	1.350÷1.450
Viscosity at +23°C (mPa s):	800 ± 100 (# 2 - 20 rpm)	110 (# 1 - 5 rpm)	-	-

APPLICATION DATA

Mixing ratio:	A + B + C + Mapecolor CPU : 5.2 / 5.4 / 20 / 5
Colour of mix (including Mapecolor CPU):	grey - beige - red - green - ochre yellow
Consistency of mix:	fluid, self-levelling
Density of mix (kg/m³):	1,700
Pot life of mix at +20°C:	15 mins.
Surface temperature:	from +8°C to +30°C

FINAL PERFORMANCE

Dust dry at +23°C and 50% R.H.:	2-4 hours
Set to light foot traffic at +23°C and 50% R.H.:	24 hours
Full hardening time:	4 days
Shore D hardness after 28 days (DIN 53505):	83

Performance characteristic	Test method	Requirements according to EN 13813 for cementitious screeds	Performance of product
Flexural strength after 28 days:	EN 13892-2	declared value	15 N/mm ²
Compressive strength after 28 days:	EN 13892-2	declared value	50 N/mm ²
Bond strength after 28 days:	EN 13892-8; 2004	≥ 1.5 N/mm ²	4.6 N/mm ² (failure of concrete)
Permeability to water:	EN 1062-3	declared value	w 0.021 kg/(m ² ·h ^{0.5}) Class III
Impact strength:	EN ISO 6272	≥ IR 4	IR10 (10 Nm)
Böhme abrasion resistance after 28 days (cm³/50 cm²):	EN 13892-3	declared value	A 6
Taber Test after 28 days (at +23°C, 50% H.R., 1,000 cycles/1,000 g, revs/H22 disk):	EN ISO 5470-1	< 3,000 mg	665 mg
Reaction to fire:	EN 13501-1	da A1 _{fl} a F _{fl}	B _{fl} -s1

Mapefloor CPU/MF



Alternative scratch coat:

Mapefloor CPU/MF
+ **Mapecolor CPU** 3-4 kg/m²
depending on the roughness of the substrate

Self-levelling layer - 3-6 mm

Mapefloor CPU/MF
+ **Mapecolor CPU** 1.7 kg/m² per mm
of thickness

2. Non-slip multi-layered coating - thickness 3-6 mm

Base layer - 3-6 mm

Mapefloor CPU/MF
+ **Mapecolor CPU** 1.7 kg/m² per mm
of thickness

Broadcast with of
Quartz 0.5 while still wet min. 2 kg/m²

Finishing coat:

Mapefloor CPU/TC 0.3-0.6 kg/m²

Consumption rates are highly influenced by the particle size of the sand used for the dry-shake finish on the surface of the **Mapefloor CPU/MF** and the tools used to apply the product.

Consumption is influenced by the condition of the surface to be coated, its absorbency and roughness, site conditions, etc.

Cleaning tools

Clean tools used to prepare and apply **Mapefloor CPU/MF** with polyurethane thinners immediately after use. Once hardened, the product may only be removed using mechanical means.

HARDENING TIME

Floors coated with **Mapefloor CPU/MF** set to light foot traffic after approximately 24 hours at +23°C. They may be opened to light vehicle traffic after approximately 24-36 hours at +23°C. The product develops its full strength after 4 to 5 days at minimum +23°C, although it depends on the actual surrounding conditions on site.

PACKAGING

Mapefloor CPU/MF: 30.6 kg units (component A = 5.2 kg - component B = 5.4 kg - component C = 20 kg). One 5 kg bag of **Mapecolor CPU** colouring powder must also be added to each 30.6 kg kit of **Mapefloor CPU/MF**, which brings the total weight of each batch to 35.6 kg.

STORAGE

Mapefloor CPU/MF may be stored for 12 months in a dry area in its original packaging at a temperature of between +5°C and +30°C. Component C complies with the prescriptions of Reg. (EC) N. 1907/2006 (REACH) - Annex XVII, article 47.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapefloor CPU/MF component B may irritate the eyes, skin and respiratory system. It may also cause irreversible damage if used for lengthy periods and may cause allergic reactions in those subjects sensitive to isocyanates if it comes into contact repeatedly with the skin. Component B is harmful and may cause sensitisation if inhaled at temperatures above +60°C (seek medical attention in the case of sickness or drowsiness).

Mapefloor CPU/MF component C contains cement which, in contact with perspiration or other bodily fluids, provokes an irritating alkaline reaction and, in those subjects sensitive to such products, an allergic rash. It may damage the eyes.

Mapefloor CPU/MF component A is hazardous for aquatic life. Do not dispose of the product in the environment.

When applying the product we recommend using protective clothing, gloves, safety goggles and a safety mask to protect the respiratory system and to work only in well-ventilated areas. If the product comes into contact with the eyes or skin, wash immediately with plenty of clean water and seek medical attention.

For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

PRODUCT ONLY FOR PROFESSIONAL USE.

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



All relevant references for the product are available upon request and from www.mapei.com



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