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MAPEFLOOR PU 400 LV

Two-component self-levelling, fillerized, low viscosity, highly elastic polyurethane binder



WHERE TO USE

Thanks to its special formulation **Mapefloor PU 400 LV** is used for internal and external car-parks and concrete substrates with cracks or risk of cracking that require a coating with a high degree of elasticity.

Mapefloor PU400 LV is used in the **Mapefloor Parking System HE** cycle to form an elastic protective and waterproof coating on road surfaces in multi-storey car-parks and on roofs and surfaces with vehicle access, including external surfaces.

Mapefloor PU 400 LV is also used in the **Mapefloor Parking System ME** cycle to form an elastic protective and waterproof coating on road surfaces for the intermediate levels in multi-deck car parks.

TECHNICAL CHARACTERISTICS

Mapefloor PU 400 LV is a two-component, coloured, fillerized polyurethane resin-based formulate, according to a formula developed in the MAPEI research laboratories.

Mapefloor PU 400 LV has excellent crack-bridging capacity for cracks that have already appeared or that could potentially form in substrates, even at temperatures down to -20°C.

Refer to the **Mapefloor Parking System HE** and **Mapefloor Parking System ME** Technical Data Sheets for their respective crack-bridging classes.

Mapefloor PU 400 LV also has good resistance to mechanical stresses and loads.

RECOMMENDATIONS

- Do not apply **Mapefloor PU 400 LV** on substrates not adequately prepared and primed as specified.
- Do not apply **Mapefloor PU 400 LV** on substrates with more than 4% moisture content or on substrates with capillary rising damp (consult Mapei Technical Services).
- Do not dilute **Mapefloor PU 400 LV** with solvent or water.
- Do not apply **Mapefloor PU 400 LV** on dusty or crumbling substrates.
- Do not apply **Mapefloor PU 400 LV** on substrates with oil or grease stains or with stains in general.
- Do not mix partial quantities of the components to avoid mixing errors; the product may not harden correctly.
- Protect the product from water for at least 24 hours after application.
- The temperature of the substrate must be at least 3°C above dew point to reduce the risk of condensation.
- Do not expose the mixed product to sources of heat.
- If areas where the product is being applied need to be warmed up, use electric heaters only (heaters that run on fossil fuels give off carbon dioxide and water vapour that could affect the finish of the coating).

APPLICATION PROCEDURE

Substrate preparation

The surface of concrete must be dry, clean and sound and have no crumbling or detached areas. The compressive strength of the concrete used for the substrate 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 level of moisture in the substrate must be a maximum of 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 equipment (e.g. shot-blasting or grinding with a diamond disk) to remove all traces of dirt, cement laitance and crumbling or detached areas and to make the surface slightly rough and absorbent. Before applying the product remove all dust from the surface with a vacuum cleaner.

Any cracks must be repaired by filling them with **Eporip**, while any deteriorated areas of the concrete must be repaired with **Mapefloor EP19**.

Before applying **Mapefloor PU 400 LV**, remove all traces of dust from the surface with a vacuum cleaner.

Application of Primer SN

Apply an even coat of neat **Primer SN** or mixed with **Quartz 0.5** on the substrate after it has been prepared as specified with a straight steel trowel or rake.

Immediately after applying **Primer SN** broadcast the surface in excess with **Quartz 0.5** while still wet to ensure the resin coating adheres perfectly. Once the primer has hardened, remove all excess sand before applying **Mapefloor PU 400 LV**.

Preparation of the product

The two components which make up **Mapefloor PU 400 LV** must be blended together just before application. Mix component A thoroughly and add the contents of component B. Mix again with a suitable electric mixer at low speed (300-400 revs/min) to prevent entraining air into the product for at least 2 minutes until the mix is completely blended. Then, while mixing, add 20-30% by weight of **Quartz 0.25** and keep mixing until it is evenly blended.

Pour the mix into a clean container and briefly mix again.

Do not overmix 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 +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

Pour the product on the surface and spread it out evenly over the entire surface to be treated with a notched spreader; then go over the surface with a spiked roller. When applying the **Mapefloor Parking System ME** cycle, broadcast the surface in excess with **Quartz 0.9** or **Quartz 1.2** according to the degree of non-slip finish required. Once the product has hardened, remove all excess sand before applying the finishing coat.

CONSUMPTION

From 1.5 to 2 kg/m² of **Mapefloor PU 400 LV**, depending on the condition of the substrate.

PACKAGING

20 kg kit:

· component A = 8 kg;

· component B = 12 kg.

STORAGE

12 months in its original, sealed packaging at a temperature of +10°C to +30°C.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapefloor PU 400 LV part A and part B can cause sensitization if they come in contact with the skin of those subjects predisposed.

Furthermore, **Mapefloor PU 400 LV** part B is irritant for the eyes, is harmful and can cause sensitization if inhaled. While using wear protective gloves and goggles and take the usual precautions for the handling of chemicals. In case of contact with the eyes or skin wash immediately with plenty of water and seek medical attention.

Mapefloor PU 400 LV part A is hazardous for aquatic life. Do not dispose of the product in the environment.

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

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

DATI IDENTIFICATIVI DEL PRODOTTO

	component A	component B
Colour:	grey-beige	straw yellow
Appearance:	pasta	thick liquid
Density (g/cm ³):	1.5	1.05
Viscosity at +23°C (mPa·s):	2,500 (# 3 - rpm 10)	6,500 (# 5 - rpm 20)
APPLICATION DATA (at +23°C and 50% R.H.)		
Mixing ratio:	component A : component B = 40 : 60	
Colour of mix:	grey-beige	
Density of mix (kg/m ³):	1,250	
Viscosity of mix at +23°C (mPa·s):	4,500 (# 4 - 50 rpm)	
Consistency of mix:	self-levelling paste	
Pot life at +23°C:	20 mins.	
Application temperature:	+8°C to +30°C	
FINAL PERFORMANCE (at +23°C – 50% R.H.)		
Dust dry:	6 hours	
Set to foot traffic:	8 hours	
Complete hardening time:	16 hours	
Elongation applied neat after 7 days (DIN 53504) (%):	750	
Elongation fillerized with 30% Quartz 0.25 after 28 days (DIN 53504) (%):	450	
Shore D hardness applied neat after 7 days at +23°C (DIN 53505):	55	
Shore A hardness fillerized with 30% Quartz 0.25 after 28 days at +23°C (DIN 53505):	73	
Tensile strength applied neat after 7 days at +23°C (DIN 53504) (N/mm ²):	8	
Tensile strength fillerized with 30% Quartz 0.25 after 28 days at +23°C (DIN 53504) (N/mm ²):	2.6	
Tear strength applied neat after 7 days at +23°C (DIN 53515) (N/mm):	32	
Tear strength fillerized with 30% Quartz 0.25 after 28 days at +23°C (DIN 53515) (N/mm):	27	
Shore A hardness applied neat after 28 days (DIN 53505):	70	

ESSENTIAL CHARACTERISTICS IN COMPLIANCE WITH CE-CERTIFICATION EN 1504-2 - Table ZA.1d and ZA.1g (coating C, principles PI-MC-PR-IR)

Essential characteristics	EN 1504 Test Method	Requirements	Product performance
Abrasion resistance (TABER test) Note: Testing methods according to EN 13813 for flooring systems are also acceptable	EN ISO 5470-1	Loss in weight less than 3000 mg after 1000 cycles with an H22 abrasive disk with a load of 1,000 g	< 3000 mg
Permeability to CO ₂	EN 1062-6	S _d > 50 m	S _d 220 m
Permeability to water vapour	EN ISO 7783-2	Class I: S _d < 5 m (permeable to water vapour) Class II: 5 m ≤ S _d ≤ 50 m Class III: S _d > 50 m (not permeable to water vapour)	Class III
Capillary absorption and permeability to water	EN 1062-3	W < 0.1 kg/m ² ·h ^{0,5}	0,04
Resistance to impact measured on MC (0.40) coated concrete samples according to EN 1766. Note: The forecast thickness and impact load influence which class is chosen	EN ISO 6272-1	No cracks or delamination after loading Class I: ≥ 4 Nm Class II: ≥ 10 Nm Class III: ≥ 20 Nm	Class II
Direct traction adherence test Reference substrate: MC (0.4) as specified in EN 1766 curing: – 28 days for single component systems containing concrete and PCC systems; – 7 days for systems with reactive resin	EN 1542	Average (N/mm ²) Cracking or flexible systems with no traffic: ≥ 0.8 (0,5) ^{b)} with traffic: ≥ 1.5 (1,0) ^{b)} Rigid systems ^{c)} with no traffic: ≥ 1.0 (0,7) ^{b)} with traffic: ≥ 2.0 (1,0) ^{b)}	3.62 N/mm ² flexible system with traffic
Resistance to thermal shock (1x)	EN 13687-5	After thermal cycling a) no bubbles, cracks and delamination b) Pull-off test Average (N/mm ²) Cracking or flexible systems with no traffic: ≥ 0.8 (0,5) ^{b)} with traffic: ≥ 1.5 (1,0) ^{b)} Rigid systems ^{c)} with no traffic: ≥ 1.0 (0,7) ^{b)} with traffic: ≥ 2.0 (1,0) ^{b)}	1.2 N/mm ² flexible system with traffic
Crack bridging ability After conditioning in according to EN 1062-11:2002 4.1-7 days at -70°C for reactive resin system 4.2-UV radiation and humidity for dispersion system	EN 1062-7	The required classes and the tests conditions are given in talbe 6 and 7. the required crac bridging ability shall be selected by the designer with respect to local conditions (climate, crack widths and ckack movement). After testing the required class no failures may occur	Static at -10°C: > A5 Dynamic at +23°C: > B 4.2 Dynamic at -20°C: > B4.1
Reaction to fire:	EN 13501-1	Euroclasses	C _{FL} -s1

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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