MAPEFLOOR PU 460

Two-component elastic, coloured, aromatic, self-levelling polyurethane resin used to create Mapefloor Comfort System AR and Mapefloor Comfort System AR/X





DESCRIPTION

Mapefloor PU 460 is a two-component, high solid content, aromatic polyurethane resin, coloured, developed in the MAPEI R&D laboratories. R&S di Mapei. It is used to make elastic self-levelling system with high aesthetic aspect.
Mapefloor PU 460 can be combined with the rubber granule mat **Mapecomfort FL**.

TECHNICAL CHARACTERISTICS

The resin systems made with **Mapefloor PU 460** are elastic, UV resistant, impermeable to liquid in general, resistant to pedestrian traffic and minimal chemical aggressions.
It can be used combined with the rubber granule mat of 4 mm thickness **Mapecomfort FL** to make **Mapefloor Comfort System AR/X**, characterized by high walking comfort and reduction of impact noise and noise transmission (16 dB according to EN ISO 10140).
Mapefloor PU 460 complies with the principles defined by EN 13813 “Screeds and materials for screeds - Properties and requirements”, which specifies the requirements for screed materials used in the construction of internal floors.

ADVANTAGES

- easy to work;
- does not smell unpleasant during the application;
- high aesthetic attractiveness of the treated surfaces, thanks also to the wide choice of colours available
- low VOC emission;
- it creates smooth, seamless and joint-free surfaces (except on the structural joints of the substrate), easy to clean and maintain;
- sustainability: it can contribute to LEED credits. EPD (Environmental Product Declaration) compliant.

WHERE TO USE

The resin systems made with with **Mapefloor PU 460** are particularly recommended for internal flooring in the residential and tertiary sectors, such as:

- schools, nurseries, offices, public offices, etc.;
- hospitals and care homes;
- libraries, museums, showrooms, etc.;
- apartments;
- shops in general.

RECOMMENDATIONS

- Do not apply **Mapefloor PU 460** on cementitious substrates with a moisture content higher than 4% or with capillary rising damp.
- Do not dilute **Mapefloor PU 460** with solvents or water.
- Do not apply **Mapefloor PU 460** on dusty or crumbling substrates.
- Do not apply **Mapefloor PU 460** on substrates with oil or grease stains, or stains in general.
- Do not apply **Mapefloor PU 460** on substrates that have not been treated with **Primer SN** or with **Mapecomfort FL** or that 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.
- If rooms where the product is being used need to be warmed up, do not use heaters that burn hydrocarbons; the carbon dioxide and water vapour given off into the air could affect the aspect of the finish. Use electric heaters only.
- Use suitable specific cleaning equipment and detergent to clean the resin system, depending on the type of dirt or stain to be removed.
- Protect the product from water for at least 24 hours after application.
- The temperature of the substrate during the application and the hardening must be at least 3°C higher than the dew-point temperature. The air relative humidity must be max. 80%.

COLOURS

Please contact Mapei Technical Service for a full list of the colours available.

APPLICATION PROCEDURE

Preparation of the substrate

The surface of concrete floors must be dry, clean and sound and have no crumbling or detached areas. The compressive strength of concrete substrates must be at least 25 N/mm² and the 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 moisture content in the substrate must be maximum 4% and there must be no capillary rising damp.
The surface of the floor to be treated must be prepared with a suitable mechanical process (e.g. shot blasting or grinding with a diamond disc) 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 products, thoroughly remove all dust on 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**, **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.
Mapefloor PU 460 can be laid on cementitious substrates after applying a coat of **Primer SN** (for **Mapefloor Comfort System AR**) or over **Mapecomfort FL** rubber mat bonded and skimmed with **Mapefloor Pore Filler** (for Mapefloor **Comfort System AR/X**). For further and more detailed information concerning the characteristics and the method of application of these systems, please refer to the relevant technical data sheets.

Application of Primer SN (for Mapefloor Comfort System AR)

Primer SN, mixed with **Quartz 0.5**, is evenly applied by straight trowel or rake on the properly prepared substrate. immediately after the application of **Primer SN**, on its still wet surface, lightly broadcast the surface with **Quartz 0.5**.

Bonding Mapecomfort FL (for Mapefloor Comfort System AR/X)

Bond the specific rubber granule mat **Mapecomfort FL** with **Mapefloor Pore Filler**, which will be used also as scratch coat on the mat surface to seal all its pores once the **Mapecomfort FL** has fully adhered to the substrate. The surface treated with **Primer SN** or **Mapecomfort FL** skimmed with **Mapefloor Pore Filler** must be totally pore-free, otherwise air bubbles could escape and form pinholes in the subsequent self-levelling layer. If there are any open pores, apply a second skim coat of **Primer SN,** then lightly broadcast with **Quartz 0.5,** or **Mapefloor Pore Filler** ensuring the full saturation of all the porosity.
For further information regarding the application of the **Primer SN**, **Mapecomfort FL** and **Mapefloor Pore Filler** refer to the relevant technical data sheets.

Preparation of the product

Stir the component A thoroughly, then add the content of the component B and mix for at least 2 minutes with a suitable low-speed electric mixer (300-400 rpm) until it is completely blended. Do not overmix the product to avoid entraining too much air into the mixture.
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 it.

Application of the product

Pour **Mapefloor PU 460** on the surface of **Primer SN** or **Mapecomfort FL** skimmed with **Mapefloor Pore Filler** and spread it out evenly with a notched trowel with “V” shaped notches in at least 2 mm thickness. Back-roll the surface with a spiked roller several times while the product is still wet to remove any air entrapped during the mixing phase.
Within maximum 48 hours (at +23°C) from hardening of **Mapefloor PU 460** apply the coloured matt polyurethane topcoat, UV resistant, **Mapefloor Finish 59 W**, by airless spray or by roller in two directions at right angles to each other. It is suggested to use **Mapefloor Finish 59 W** in a similar colour to that of the layer of **Mapefloor PU 460**.
If waiting time exceeds 48 hours (at +23°C), slightly roughen the surface with sandpaper or emery cloth before applying the topcoat. All dust must be thoroughly removed before the application of the polyurethane finish.
For further information regarding technical details and application of the **Mapefloor Finish 59 W** refer to the relevant technical data sheets.

CONSUMPTION

Mapefloor PU 460: approx. 2.5 kg/m² to form a 2 mm thick layer.

CLEANING TOOLS

Tools used for the preparation and the application of **Mapefloor PU 460** with thinner for polyurethane resins immediately after the use. Once hardened, the product may only be removed by mechanical means.

PACKAGING

20 kg unit:
component A: 15 kg;
component B: 5 kg.

STORAGE

12 months in its original container, in a dry place, at temperatures between +5°C and +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.
PRODUCT FOR PROFESSIONAL USE.

TECHICAL DATA (typical values)

PRODUCT IDENTITY	component A	component B
Colour:	RAL colours	brown
Aspect:	fluid paste	clear liquid
Density:	1.26 g/cm³	1.20 g/cm³
Brookfield viscosity at +23°C:	2,000 mPa·s (# 4 - 20 rpm)	300 mPa·s (# 1 - 20 rpm)

APPLICATION DATA (at +23°C and 50% R.H.)		
Mixing ratio:	component A : component B = 75 : 25	
Viscosity of the mixture:	1,400 mPa·s (# 5 - 50 rpm)	
Colour of the mixture:	RAL colours	
Consistency of the mixture:	self-levelling	
Density of the mixture:	approx. 1,250 kg/m³	
Workability time:	approx. 30 min.	
Application temperature:	+10°C to +30°C (refers to the surroundings, material and substrate)	
Waiting time between layers: **– over Primer SN lightly broadcast with Quartz 0.5:** **– over Mapecomfort FL skimmed with Mapefloor Pore Filler:**	 min. 12 hours min. 8 hours	 max. 24 hours max. 24 hours
Hardening time: **– dust dry:** **– set to foot traffic:** **– complete hardening:**	 4 h 24 h 7 gg	
The times above are for indication purposes only and are affected by actual site conditions (e.g. temperature of the surroundings and substrate, relative humidity of the air, etc.)		

FINAL PERFORMANCE	
Elongation at failure (DIN 53504):	115 %
Tear strength (DIN 53515):	35 N/mm
Tensile strength (DIN 53504):	9 N/mm²
Shore A hardness (DIN 53505):	75

Essential characteristics	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
Permeability to water vapour:	EN ISO 7783-1-2	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/m²·$h^{0,5}$	w < 0.1 kg/m²·$h^{0,5}$
Chemical resistance:	EN 13529	CR Group number (from 1 to 15a) and Class (1 or 2)	CR11 (Class 2, slight discoloration) CR12 (Class 2)
Reaction to fire:	EN 13501-1	from $A1_{FL}$ to F_{FL}	B_{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

MAPEI

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TECHNICAL SPECIFICATION

Supply and application of self-levelling aromatic polyurethane resin, coloured, with elastic properties (such as **Mapefloor PU 460** by MAPEI S.p.A.) applied by notched trowel in at least 2 mm thickness, to make elastic resin systems for internal environments, with possible combination of a 4 mm thick rubber granule mat (such as **Mapecomfort FL** by MAPEI S.p.A.) to provide greater elasticity and soundproofing.
The product must have the following characteristics:

Bond strength (EN 13892-4):	≥ 2.0 N/mm^2
Elongation at failure (DIN 53504)	115%
Tear strength (DIN 53515)	35 N/mm
Tensile strength (DIN 53504)	9 N/mm^2
Shore A hardness (DIN 53505)	75
BCA wear resistance (EN 13892-4):	10 µm
Impact strength (EN ISO 6272):	20 Nm
Permeability to water vapour (EN ISO 7783-1-2):	S_D > 60 m
Capillary absorption and permeability to water (EN 1062-3):	w < 0,1 $kg/m^2 \cdot h^{0,5}$
Chemical resistance (EN 13529)	CR11 (class 2, slight discoloration) CR12 (class 2)
Reaction to fire (EN 13501-1)	B_{FL}-s1
It contributes to LEED credits. EPD (Environmental Product Declaration) compliant	

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