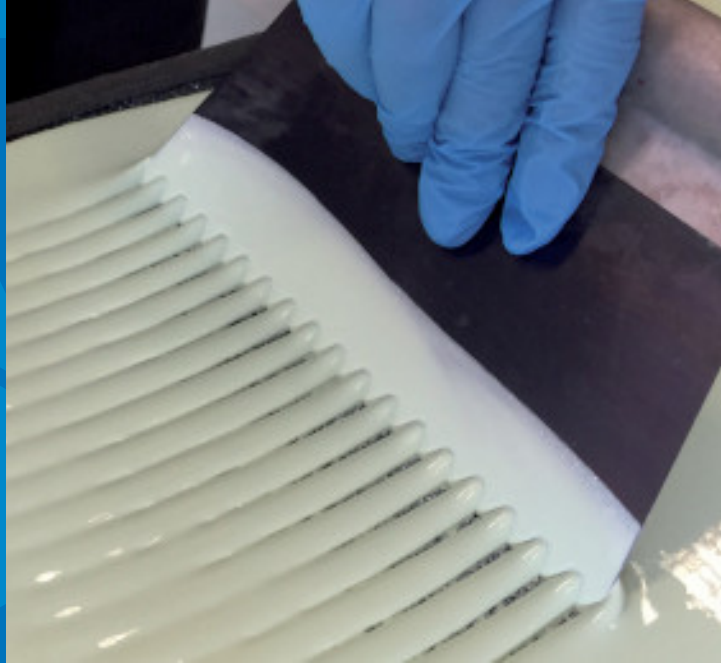
MAPEFLOOR PU 461

Two-component, self-levelling aliphatic polyurethane resin, coloured, elastic, to be used for Mapefloor Comfort System AL and Mapefloor Comfort System AL/X





DESCRIPTION

Mapefloor PU 461 is a two-component, high solid content, aliphatic polyurethane resin, coloured, developed in the MAPEI R&D laboratories. It is used to make elastic self-levelling system with high aesthetic aspect.
Mapefloor PU 461 can be combined with the rubber granule mat **Mapecomfort FL**.

TECHNICAL CHARACTERISTICS

The resin systems made with **Mapefloor PU 461** are elastic, UV resistant, impermeable to liquid in general, resistant to pedestrian traffic and minimal chemical aggressions.
Mapefloor PU 461 combined with the rubber granule mat of 4 mm thickness **Mapecomfort FL** to make **Mapefloor Comfort System AL/X**, characterized by high walking comfort and reduction of impact noise and noise transmission (16 dB according to EN ISO 10140).
Mapefloor PU 461 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;
- UV resistant, not yellowing;
- does not smell unpleasant during the application;
- can be finished with a transparent topcoat, allowing to obtain countless aesthetic and decorative effects of the self-levelling layer thanks to the wide range of colours available and the possible combination with coloured flakes;
- 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 **Mapefloor PU 461** are particularly suitable for internal flooring in the residential and tertiary sectors, such as:

- schools, kindergarten, offices, public areas, etc.;
- hospitals and nursing homes;
- libraries, museums, showrooms, etc;
- apartments;
- shopping areas in general.

RECOMMENDATIONS

- Do not apply **Mapefloor PU 461** on cementitious substrates with a moisture content higher than 4% or with capillary rising damp.
- Do not dilute **Mapefloor PU 461** with solvents or water.
- Do not apply **Mapefloor PU 461** on dusty or crumbling substrates.
- Do not apply **Mapefloor PU 461** on substrates with oil or grease stains or stains in general.
- Do not apply **Mapefloor PU 461** 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.
- To ensure uniformity of the finishing colour, it is recommended to use **Mapefloor PU 461** from the same production batch.
- 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 461 can be laid on cementitious substrates after applying a coat of **Primer SN** (for **Mapefloor Comfort System AL**) or over **Mapecomfort FL** rubber mat bonded and skimmed with **Mapefloor Pore Filler** (for Mapefloor **Comfort System AL/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 AL)

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 AL/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 as previously described, 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 mixture into a clean container and briefly mix again.
Apply the product within the pot life indicated in the data table (referred to a temperature of +23°C). Higher surrounding temperatures will reduce the pot life, while lower temperatures will increase it.

Application of the product

Pour **Mapefloor PU 461** 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.
If designed, on the fresh surface of the material it is possible to create a broadcast of coloured flakes to obtain a particular aesthetic effect. We recommend using flakes with a maximum size of 3-4 mm. Particular decorative effects can also be obtained by pouring **Mapefloor PU 461** in different colours and mixing them together on the surface, with the fresh-on-fresh technique; in this case the use of the spiked roller will not be possible so as not to alter the desired aesthetic effect and the possible presence of surface bubbles caused by air not completely eliminated must be accepted.
Within maximum 48 hours (at +23°C) from hardening of **Mapefloor PU 461** apply the transparent matt polyurethane topcoat **Mapefloor Finish 59 W TRP** by airless spray or by roller in two directions at right angles to each other.
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 TRP** refer to the relevant technical data sheets.

CONSUMPTION

Approx. 2.8 kg/m² for 2 mm thickness.

CLEANING TOOLS

Tools used for the preparation and the application of **Mapefloor PU 461** with thinner for polyurethane resins immediately after the use. Once hardened, the product may only be removed by mechanical means.

PACKAGING

20 kg unit (A + B):

- component A: 15 kg;
- component B: 5 kg.

STORAGE

12 months in its original sealed packaging, in a dry area at a temperature of between +5°C and +35°C. Protect from frost.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

When the material reacts, it generates considerable heat. After mixing components A and B we recommend applying the product as soon as possible and to never leave the container unguarded until it is completely empty.
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.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY		
	component A	**component B**
Colour:	RAL colours	transparent
Consistency:	fluid paste	clear liquid
Density:	1.35 g/cm³	1.15 g/cm³
Brookfield viscosity at +23°C:	6,000 ± 1,000 mPa·s (# 6 - 50 rpm)	2,500 mPa·s (# 1 - 20 rpm)

APPLICATION DATA (at +23°C and 50% R.H.)	
Mixing ratio:	component A : component B = 75 : 25
Viscosity of mix at +23°C:	3,500 mPa·s (# 5 - 50 rpm)
Colour of mix:	RAL colours
Consistency of mix:	self-levelling
Density of mix:	approx. 1,300 kg/m³
Workability time at +23°C:	approx. 40 mins.
Application temperature:	+10°C to +30°C (refers to the surroundings, material and substrate)

Waiting time between coats at +23°C and 50% R.H.: **– 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 at +23°C and 50% R.H.: **– dust dry:** **– set to foot traffic:** **–complete hardening:**	4 hours 24 hours 7 days	
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 surrounding air, etc.)		

FINAL PERFORMANCE	
Elongation at failure (DIN 53504):	75 %
Tear strength (DIN 53515):	12 N/mm
Tensile strength (DIN 53504):	4 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	IR4
Capillary absorption and permeability to water:	EN 1062-3	$w < 0.1\ kg/m^2 \cdot h^{0,5}$	$w < 0.1\ kg/m^2 \cdot h^{0,5}$
Chemical resistance:	EN 13529	CR Group number (from 1 to 15a) and Class (1 or 2)	CR11 (Class 1) 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 on our website www.mapei.com

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ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

TECHNICAL SPECIFICATIONS

Supply and application of self-levelling aliphatic polyurethane resin, coloured, elastic, (such as **Mapefloor PU 461** 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):	≥ 2,50 N/mm²
Impact resistance (EN ISO 6272):	6 Nm
Elongation at failure (DIN 53504)	75%

Tear strength (DIN 53515)	12 N/mm
Tensile strength (DIN 53504)	4 N/mm^2
Shore A hardness (DIN 53505)	75
Chemical resistance (EN 13529)	CR11 (class 1) CR12 (class 2)
BCA wear resistance (EN 13892-4):	10 µm
Capillary absorption and permeability to water (EN 1062-3):	$w < 0.1\ kg/m^2 \cdot h^{0,5}$
Reaction to fire (EN 13501-1)	B_{FL}-s1
It contributes to obtaining LEED credits and has an EPD (Environmental Product Declaration)	

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