



Mapefloor Finish 415



Two-component aromatic polyurethane topcoat for parking areas



WHERE TO USE

Mapefloor Finish 415 is a flexible polyurethane topcoat especially developed for indoor use on surfaces exposed to medium to high mechanical wear. Suitable areas of application are floors in parking areas. **Mapefloor Finish 415** is normally applied on concrete and other cement-based substrates.

TECHNICAL CHARACTERISTICS

Mapefloor Finish 415 is a formulated two-component flexible polyurethane-based coating for use on surfaces in areas with medium to high mechanical wear. **Mapefloor Finish 415** has excellent impact resistance and good chemical resistance. **Mapefloor Finish 415** is available in colours shown in the provided colour guide. **Mapefloor Finish 415** is not UV-stable and will most likely become yellow in contact with sunlight, without this having any negative influence on the properties. **Mapefloor Finish 415** has low viscosity and is easy to apply. **Mapefloor Finish 415** does not contain any solvents.

Mapefloor Finish 415 complies with the principles defined in EN 1504-9 standards (*"Products and systems for protecting and repairing concrete structures. Definitions, requirements, quality control and conformity assessment. General principles for the use and application of systems"*), and the requirements of EN 1504-2 (*"Protection systems for concrete surfaces"*) for class: products for protecting surfaces - coating (C) - PI, MC, PR and IR.

Mapefloor Finish 415 complies with EN 13813.

APPLICATION PROCEDURE

Preparation of the substrate

The concrete must be sound, clean, dust-free and have a smooth permanent surface. Normal cleaning methods

such as milling, grinding or shot blasting can be used. The substrate's surface temperature should be at least +10°C and at least +3°C above the applicable dew point during product application.

Preparation of the product

Components A and B should have a temperature of +15°C or more when mixed together. Mix component A first, using a slow drill whisk, then add component B and mix well for at least 3 minutes until it reaches a homogeneous consistency.

The product must not be thinned!

Application of the product

The relative humidity in the air should be less than 75% RH during both installation and curing. The uncured product must not come into contact with water or moisture.

Please Note: Be especially observant that the substrate is dry and that only dry aggregates are used as spreading material.

Single layer non-slip coating for parking areas - thickness 1.5 - 2.5 mm

a. Primer/basecoat

The surface should always be cleaned and prepared with **Primer SN** before applying **Mapefloor Finish 415**. The primer is mixed 1:0.5 with quartz 0.1-0.5 mm, and is best applied using a leveling rake or a v-toothed spattle in desired thickness of at least 0.6 mm. Immediately after application of the primer the surface must be scattered with a layer of dry quartz of grain size 0.4-0.8 mm or 0.7-1.2 mm in order to ensure a non-slip surface and good adhesion for the subsequent coating.

b. Topcoat

Aggregates that did not adhere to the surface must

Mapefloor Finish 415

be removed from the dry and cured primer/basecoat, and a top layer of **Mapefloor Finish 415** is applied using a roller and a rubber squeegee. Depending on the color - sometimes a second application is necessary. A second application should be done within 24 hours to ensure good adhesion.

Flexible multi-layer non-slip coating for parking areas - thickness 2.5-4.5 mm

a. Primers

The surface should always be cleaned and prepared with e.g. **Primer SN** before applying **Mapefloor PU Flexibinder / Mapefloor PU 410**. The primer is best applied using a smooth trowel or rake. After application all pores or air holes on the surface of the concrete should be filled and the surface to be sealed should have no dry spots. Immediately after application of the primer the surface must be scattered with a layer of dry quartz of grain size 0.4-0.8 mm or 0.7-1.2 mm (grain-to-grain) in order to ensure good adhesion for the subsequent coating.

b. Multi-layer coating

A self-levelling coating of **Mapefloor PU Flexibinder / Mapefloor PU 410** (optional - mixed with 20 - 30 % quartz 0.1-0.3 mm) is applied using a levelling rake or a v-toothed spatula at desired thickness of at least 1 mm, and covered to complete saturation using dry sand with a grain size of 0.4-0.8 mm or 0.7-1.2 mm. More wear resistant aggregates like **Dynagrip, Emery, Bauxit** or **Granite** can also be used to increase wear resistance.

c. Topcoat

Aggregates that did not adhere to the surface must be removed from the dry and cured wearcoat, and a top layer of **Mapefloor Finish 415** is applied using a roller and a rubber squeegee. Depending on the colour - sometimes a second application is necessary. A second application should be done within 24 hours to ensure good adhesion.

Elastic multilayer non-slip coating for parking areas - thickness 3-4 mm

a. Primers

The surface should always be cleaned and prepared with e.g. **Primer SN** before applying **Mapefloor PU M / Mapefloor PU 400**. The primer is best applied using a smooth trowel or rake. After application all pores or air holes on the surface of the concrete should be filled and the surface to be sealed should have no dry spots. Immediately after application of the primer the surface must be scattered with a layer of dry quartz of grain size 0.4-0.8 mm or 0.7-1.2 mm (grain-to-grain) in order to ensure good adhesion for the subsequent coating.

b. Multi-layer coating

A self-levelling coating of **Mapefloor PU M / Mapefloor PU 400** (optional - mixed with 20-30 % quartz 0.1-0.3 mm) is applied using a leveling rake or a v-toothed spatula at a thickness of at least 1.5 mm, and covered to complete saturation using dry sand with a grain size of 0.4-0.8 mm or 0.7-1.2 mm. More wear resistant aggregates like **Dynagrip, Emery, Bauxit** or **Granite** can also be used to increase wear resistance.

c. Topcoat

Aggregates that did not adhere to the surface must be removed from the dry and cured wearcoat, and a top layer of **Mapefloor Finish 415** is applied using a roller and a rubber squeegee. Depending on the colour - a second application may be necessary. A second application should be done within 24 hours to ensure good adhesion.

Multi-layer non-slip coating with separate membrane layer for parking areas - thickness 4.5-6.5 mm

a. Primers

The surface should always be cleaned and prepared with e.g. **Primer SN** before applying **Mapefloor PU M / Mapefloor PU 400 / Purtop 1000**. The primer is best applied using smooth trowel or rake. After application all pores or air holes on the surface of the concrete should be filled and the surface to be sealed should have no apparent dry spots. Immediately after application of the primer the surface must be scattered with a layer of dry quartz of grain size 0.4-0.8 mm or 0.7-1.2 mm (grain-to-grain) in order to ensure good adhesion for the subsequent coating.

b. Membrane

A self-levelling membrane layer of **Mapefloor PU M / Mapefloor PU 400** is applied using a leveling rake or a v-toothed spatula at a thickness of at least 1.5 mm. If a faster application and higher performance is needed use a membrane from the **Purtop**-line (eg. **Purtop 1000**). This membrane has to be applied with a bi-component high pressure reactor pump in at least 2 mm thickness.

c. Multi-layer coating

A self-levelling coating of **Mapefloor PU Flexibinder / Mapefloor PU 410** (optional - mixed with 20-30 % quartz 0.1-0.3 mm) is applied within 24 hours (2 hours if using membrane from **Purtop**-line) using a leveling rake or a v-toothed spatula at desired thickness of at least 1 mm, and covered to complete saturation using dry sand with a grain size of 0.4-0.8 mm or 0.7-1.2 mm. More wear resistant aggregates like **Dynagrip, Emery, Bauxit** or **Granite** can also be used to increase wear resistance.

c. Topcoat

Aggregates that did not adhere to the surface must be removed from the dry and cured wearcoat, and a top layer of **Mapefloor Finish 415** is applied using a roller and a rubber squeegee. Depending on the colour - a second application may be necessary. A second application should be done within 24 hours to ensure good adhesion.

Cleaning

Tools and equipment must be washed immediately after use with a thinner or some other cleaning agent suited for polyurethane. **Please Note:** Technical alcohol may not be used! Once it has set, the product can only be removed mechanically.

CONSUMPTION

Used as a topcoat: approximately 0.6-1.2 kg/m² per coat.
Consumption is dependent on the



Mapefloor Finish 415: Two-component aromatic polyurethane topcoat for parking areas.
The product complies with specification in EN 13813 and EN 1504-2
Coating (C) principles: PI, IR, PR and MC

TECHNICAL DATA (typical values)

PRODUCT IDENTITY	component A	component B	
Color:	coloured	dark brown	
Appearance:	thick liquid	liquid	
Density (g/cm³):	1.56	1.23	
Brookfield viscosity at +23°C (mPa-s):	approx. 5,000	approx. 170	
APPLICATION DATA			
Mixing ratio:	100 : 25 component A : component B		
Color of mixture:	coloured		
Consistency of the mixture:	dense liquid		
Density of the mixture (kg/m³):	1,480		
Brookfield viscosity of the mix (mPa-s):	approx. 2,000		
Application temperature range:	+10°C - +30°C		
Potlife (EN 9514):	30 minutes		
FINAL PROPERTIES (7 days at +50°C)			
Step on time:	24 hours		
Final setting time:	7 days		
Tensile strength (DIN 53504) (N/mm²):	18		
Elongation at break (DIN 53504):	approx. 60%		
Tear resistance (ISO 34-1) (N/mm):	100		
Shore D (ISO 868:2003):	75 (1s)		
Taber abrasion (CS 17 / 1000 g / 1000 cycles):	110 mg		
Performance characteristics for product or system	Test methods	Requirements according to EN 13813 for synthetic resin screeds	Product or system performance
Wear resistance:	EN 13892-4	< AR1	AR 0,5 *
Bond strength:	EN 13892-8:2004	> 1.5 N/mm ²	> 2.0 N/mm ²
Impact resistance:	EN 6272-1	> IR 4	> IR 4
Reaction to fire:	EN 13501-1	Declared value	D _{fl} - s1**

* Correlation to Taber (EN ISO 5470-1)

** System performance

Performance characteristics for product or system	Test methods	Requirements according to EN 1504-2	Product or system performance
Abrasion resistance (Taber test):	EN ISO 5470-1	< 3000 mg H22/1000 cycles/load 1000 g	< 150 mg
Permeability to CO₂:	EN 1062-6	Permeability to CO ₂ S _D > 50 m	S _D > 50 m**
Water vapor permeability:	EN ISO 7783	Class I: S _D < 5 m Class II: 5 m < S _D < 50 m Class III: S _D > 50 m	Class II**
Capillary absorption and permeability to water:	EN 1062-3	w < 0.1 kg/m ² ·h ^{0.5}	w < 0.01 kg/m ² ·h ^{0.5}
Adhesion after thermal compatibility. Reference substrate: MC (0.40) as specified in EN 1766. For outside application with de-icing salts influence. Freeze salt cycling with de-icing salt immersion (50 x) and thunder shower cycling (thermal shock) (10 x):	EN 13687-1 EN 13687-2	After thermal cycling: a) no bubbles, cracks or delamination b) pull-off-test Average (N/mm ²) Crack-bridging or flexible systems With no traffic: ≥ 0.8 (0.5) With traffic: ≥ 1.5 (1.0) Rigid systems With no traffic: ≥ 1.0 (0.7) With traffic: ≥ 2.0 (1.5)	no bubbles, cracks or delamination > 1.5 N/mm ² **
Impact resistance:	EN 6272-1	Class I: > 4 Nm Class II: > 10 Nm Class III: > 20 Nm	Class I**
Pull-off test Reference substrate: MC (0.40) as specified in EN 1766, curing time 7 days:	EN 1542	Average (N/mm ²) Crack-bridging or flexible systems With no traffic: ≥ 0.8 (0.5) With traffic: ≥ 1.5 (1.0) Rigid systems With no traffic: ≥ 1.0 (0.7) With traffic: ≥ 2.0 (1.5)	> 1.5 N/mm ² **
Reaction to fire:	EN 13501-1	Declared value	D _{fl} -s1**

** System performance

temperature and the substrate's coarseness as well as the required degree of anti-slip surfacing.

PACKAGING

12.5 kg packs: component A = 10 kg and component B = 2.5 kg.

STORAGE

Product properties will not change for a period of 24 months for component A and 6 months for component B when stored between +5 and +30°C in unopened original packaging.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapefloor Finish 415 comp. A is not considered dangerous according to the current regulations regarding the classification of mixtures.

Mapefloor Finish 415 comp. B irritates the eyes, the skin and the respiratory tract. It is harmful when inhaled and may cause irreversible damages after prolonged use. It may cause sensitization when inhaled and when in contact with the skin to those who are sensitive to isocyanates. When applying the product, we recommended using protective clothing, gloves, safety goggles, 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

water and consult a doctor.

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 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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