MAPEFLOOR SYSTEM 53

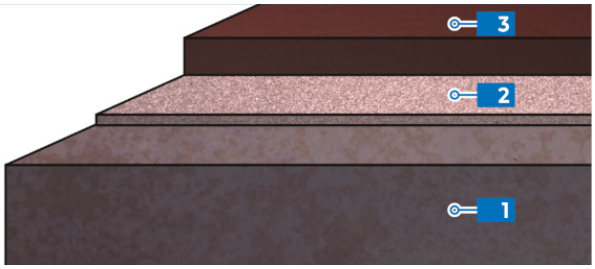
Self-levelling vapour-permeable epoxy coating system in water dispersion with a smooth matt finish for industrial floors; thickness 4 mm

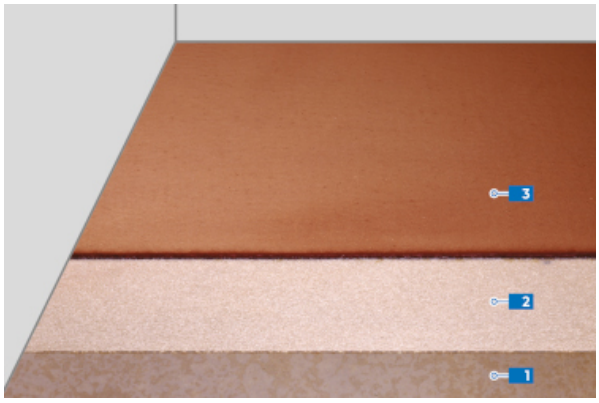
PRODUCTS USED FOR THE SYSTEM

MAPECOAT I 600 W - MAPEFLOOR I 500 W - QUARTZ 0.5

DESCRIPTION

MAPEFLOOR SYSTEM 53 is a self-levelling epoxy system used to form coatings on industrial floors that is highly resistant to chemical products, resistant to frequent cleaning operations and wear from moving trolleys and vehicles, and impermeable to oil and aggressive substances.
Coatings made from **MAPEFLOOR SYSTEM 53** also have an attractive finish.





1 Concrete
2 **Mapecoat I 600 W**
3 **Mapefloor I 500 W**

WHERE TO USE

Coating industrial floors subjected to medium to heavy traffic such as warehouses, storage areas, garages, covered parking lots, pedestrian zones, areas where forklifts are used and in food processing plants.
THE SYSTEM IS ALSO SUITABLE FOR FLOORS IN INDUSTRIAL ENVIRONMENTS WITHOUT A VAPOUR BARRIER AND MAY BE APPLIED ON CONCRETE AFTER ONLY 4 DAYS OF CURING. THE COATING HAS A SMOOTH FINISH.

MAPEFLOOR SYSTEM 53 is suitable for the following:

- processing and storage areas in the chemical and pharmaceutical industries;
- processing, storage and handling areas in the foodstuffs industry for surfaces subjected to medium to heavy traffic (as long as no water is present due to its smooth surface);
- all areas of mechanised warehouses;
- shopping centres in areas with intense pedestrian traffic and storage areas where goods are frequently moved with wheeled vehicles;

- underground car parks.

PERFORMANCE AND ADVANTAGES

- Smooth finish.
- Water-based, contains no solvents.
- Durable, characterised by its high resistance to wear and abrasion from continuous pedestrian traffic and frequent cleaning operations.
- Resistant to most chemical products such as diluted acids, base products, oil and fuel.
- Easy to clean and sterilize which makes it suitable for use in the foodstuffs industry, especially in areas with heavy traffic.
- Forms an attractive, seamless, highly functional surface.
- Guarantees an excellent cost-performance ratio.

CHEMICAL RESISTANCE

At room temperature, floors coated with **MAPEFLOOR SYSTEM 53** are resistant to:

- diluted mineral acids such as hydrochloric, nitric, phosphoric and sulphuric acids and limited resistance to organic acids (refer to the chemical resistance table in the MAPEFLOOR I 500 W Technical Data Sheet);
- alkalis, including sodium hydroxide at a concentration of 50%, and detergents normally used for cleaning floors up to a concentration of 20-30%, as long as they do not contain abrasive granules;
- sugars, including when in frequent contact with the floor.

Floors coated with **MAPEFLOOR SYSTEM 53** are not suitable for constant exposure to high temperatures.

COLOURS AVAILABLE

MAPEFLOOR SYSTEM 53 is available in 19 colours from the RAL colour chart: refer to the colours in the **MAPECOLOR PASTE** range for **MAPEFLOOR I 500 W**.

YIELD

The consumption levels indicated below are for a cycle applied at a temperature of +15°C to +25°C on a smooth, compact concrete surface with a dry shake hardener prepared with a diamond grinding disk or by shot-blasting. Rougher surfaces, or application at lower temperatures, will lead to an increase in consumption and longer hardening times.

MAPEFLOOR SYSTEM 53 average thickness 2 mm

Primer

MAPECOAT I 600 W (A+B): 0.4 kg/m²
Lightly broadcast with **QUARTZ 0.5** on wet product: 0.5 kg/m²

Self-levelling layer

MAPEFLOOR I 500 W (A+B + **MAPECOLOR PASTE**): 4.0 kg/m²

Note: *If **MAPEFLOOR I 500 W** is available in the colour required, do not add **MAPECOLOR PASTE**.*

SURFACE PREPARATION

1. Characteristics of the substrate

Before applying the **MAPEFLOOR SYSTEM 53** cycle, the substrate on which the coating is to be applied must be carefully analysed.
The concrete screed for the substrate must be sound, compact, strong and clean and must be dimensioned according to the static and dynamic loads to which it will be subjected when in service. The flatness must be defined according to the final use.
To get the best results, the following must be checked:

- The roughness of the substrate must be a maximum of 0.3 mm.
- There must be no materials or debris on the substrate which could potentially impede adhesion of the coating, such as:
  - cement laitance;
  - dust or detached or loose material;
  - protective wax, curing products, paraffin or efflorescence;
  - oil stains or layers of dirty resin;
  - traces of paint or chemical products.
- Any other kind of material or substance that could affect adhesion of the coating must be removed before starting work. If such materials or substances are present, the substrate must be prepared by carrying out a specific preparation cycle. Please contact MAPEI Technical Services Department for advice and information.
- The pull-off strength of the substrate must be more than 1.5 MPa.

If all the above conditions are met, **MAPEFLOOR SYSTEM 53** may be applied on concrete industrial floors, conventional or polymer-modified cementitious screeds and shrinkage-compensated screeds such as those made from **MAPECEM** or **TOPCEM**.

2. Substrate preparation

It is very important that the surface is prepared as specified to guarantee correct application and the best performance of the **MAPEFLOOR SYSTEM 53** epoxy cycle.
The most suitable method to prepare the surface is shot-blasting, being careful to not go too deep down into the substrate. Do not use chemical preparation methods, such as acid rinsing, or aggressive percussion tools, to prevent damaging the substrate. Any defects present, such as holes, pitting, cracking, etc., must be repaired beforehand using either **EPORIP**, **PRIMER SN** or **MAPEFLOOR I 500 W**, depending on the width and depth of the defects and cracks.
If the substrate needs to be consolidated, use diluted **MAPECOAT I 600 W** (the dilution and, consumption rates depend on the porosity). If deep hollows or highly deteriorated areas are present on the substrate, repair these areas beforehand using **MAPEFLOOR EP19** three-component epoxy mortar or with products from the **MAPEGROUT** range, which may also be used to integrate damaged joints.
If any of the above conditions are not strictly adhered to, the quality of the coating may be poor.

3. Preliminary checks before application

Make sure that all the checks indicated in point 1 “Characteristics of the substrate” have been carried out, and that all the operations indicated in point 2 “Substrate preparation” have been carried out correctly.
The surrounding temperature must be higher than +8°C (the ideal application temperature is +15°C to +25°C) and the temperature of the substrate must at least 3°C higher than the dew-point temperature.

4. Preparation and application of the products

Carefully follow the preparation instructions contained in the Technical Data Sheet for each single product used to form the complete system: **MAPECOAT I 600 W** and **MAPEFLOOR I 500 W**.

Smooth self-levelling coating – thickness 2 mm

Before applying the cycle wet the surface to be treated, taking care not to form puddles or to leave standing water.

- *Primer* (*MAPECOAT I 600 W*)
  Pour component A (2.3 kg) into component B (3.6 kg) and mix with a drill at low speed with a spiral mixing attachment to form a smooth, homogenous paste. Dilute with water up to a maximum ratio of 1:1 according to the porosity of the substrate and keep mixing to form an even compound. Pour the compound onto the floor to be coated and spread it out evenly and uniformly using a medium-haired roller. While the product is still wet, lightly broadcast the surface with QUARTZ 0.5 (approximately 0.5 kg/m²).
- *Self-levelling coating* (*MAPEFLOOR I 500 W*)
  Pour component A (2 kg) into component B (24 kg), add **MAPECOLOR PASTE** (1.4 kg of **MAPEFLOOR PASTE** for each kit of **MAPEFLOOR I 500 W**) and mix with a low-speed drill with a spiral mixing attachment to form a smooth, homogenous paste. Slowly add 2 litres of water while mixing and keep mixing to form an even compound. Pour the compound onto the floor to be coated and spread it out evenly and uniformly with a straight trowel or notched rake, then immediately backroll with a spiked-roller to help remove any air entrapped in the product during mixing.

N.B.: *it is possible to increase the resistance to abrasion of* ***MAPEFLOOR SYSTEM 53*** *and make it easier to clean by applying a coat of finish from the* ***MAPEFLOOR FINISH*** *range of products.*
It is also possible to obtain a slightly non-slip finish to the system by adding from 5 to 10% in weight of ***MAPEFLOOR FILLER*** *to the* ***MAPEFLOOR FINISH****, depending on the degree of non-slip finish required.*

5. Hardening and step-on times

At +25°C, **MAPEFLOOR SYSTEM 53** sets to foot traffic after 16 hours, may be used by light loads after 1 to 2 days and is ready for final use once fully hardened after approximately 7 days. Lower temperatures lead to longer hardening and step-on times.

CLEANING AND MAINTENANCE

Regular cleaning and maintenance operations increase the life of the treated floor, improves its aesthetic properties and reduces its tendency to collect dirt. Floors created using **MAPEFLOOR SYSTEM** are generally easy to clean with neutral detergents, or with alkali detergents diluted at a concentration of from 5 to 10% in water. Special detergents and cleaning tools are readily available for cleaning resin floors. Manufacturers of these detergents supply all the information required for the cleaning procedures to apply. If **MAPEFLOOR SYSTEM 53** is applied in civil environments, we recommend waxing the floor with special metallic wax: Our Technical Services Department is available for any information required.

TECHNICAL DATA

TECHNICAL DATA (after 7 days at +23°C)	
Adhesion (EN 13892-8; 2004)	> 1.5 N/mm² - failure of concrete
TABER abrasion resistance (CS 17 disk - 1000 revs - 1000 g)	110 mg
Coefficient of thermal expansion (DIN 53752)	$16x10^{-5}$ m/°K
Compressive strength (EN 196-1)	30 N/mm²
Flexural strength (EN 196-1)	12 N/mm²
BCA wear-resistance (EN 13892-4)	20 µm
Permeability to water vapour (EN 12086)	1199 µ
Impact strength (EN ISO 6272)	20 Nm
Service temperature (air temperature)	-20°/+60°C
Finish	matt

NOTES

Recommendations regarding safe use and handling of the products are contained in the Material Safety Data Sheet for each single material in the cycle. However, the use of protective gloves and goggles is recommended when mixing and applying the products.

If the cycle is applied on surfaces, in climatic conditions and/or for final uses not mentioned above, please contact the Technical Services Department at MAPEI S.p.A.

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