MAPEFLOOR SYSTEM 51

Multi-layered vapour-permeable epoxy coating system in water dispersion, with a matt non-slip finish for industrial floors; thickness 3 mm

PRODUCTS USED FOR THE SYSTEM

MAPEFLOOR I 500 W - MAPECOLOR PASTE - QUARTZ 0.5

DESCRIPTION

MAPEFLOOR SYSTEM 51 is a multi-layered epoxy coating system used to make industrial floors with a pronounced non-slip finish that are moderately 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 also have an attractive finish.
Floors prepared with **MAPEFLOOR SYSTEM 51** also have an attractive finish.

1	Concrete
2	**Mapefloor I 500 W** + **Mapecolor Paste** - **Quartz 0.5**
3	**Mapefloor I 500 W** + **Mapecolor Paste**

WHERE TO USE

Coating industrial floors subjected to light to medium traffic such as warehouses, storage areas, garages, covered parking lots, pedestrian zones, areas where forklifts are used and in the foodstuffs industry.
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.

MAPEFLOOR SYSTEM 51 is suitable for the following:

- storage areas in the chemical and pharmaceutical industries;
- all areas of mechanised warehouses;
- underground car parks;
- shopping centres in areas with intense pedestrian traffic and in areas where goods are stored;

- processing and storage areas in the foodstuffs industry, transit areas between different sectors and in areas where light vehicles are used;
- basements and store rooms with a high level of moisture in the substrate.

PERFORMANCE AND ADVANTAGES

- Non-slip finish.
- Permeable to water vapour.
- 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 particularly recommended for use in the foodstuffs industry, especially in areas used for walkways or for the passage of normal traffic and fork-lift trucks.
- Forms an attractive, seamless, highly functional surface.
- Quick, easy installation to reduce losses caused by machinery and equipment down times.
- Guarantees an excellent cost-performance ratio.

CHEMICAL RESISTANCE

At room temperature, floors coated with **MAPEFLOOR SYSTEM 51** 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 51** are not suitable for constant exposure to high temperatures.

COLOURS AVAILABLE

MAPEFLOOR SYSTEM 51 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 broadcast with quartz sand and prepared by shot-blasting. Rougher surfaces, or application at lower temperatures, will lead to an increase in consumption and longer hardening times.
The consumption rate for the first coat in particular may vary, depending on the type and depth of the method used to prepare the substrate.

MAPEFLOOR SYSTEM 51 average thickness 3 mm

1st coat:

MAPEFLOOR I 500 W (A + B + **MAPECOLOR PASTE**): 2.5 kg/m²
Broadcast on wet product **QUARTZ 0.5**: 5.0 kg/m²

Finishing coat:

MAPEFLOOR I 500 W (A + B + **MAPECOLOR PASTE**): 0.7 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 51** 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 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 51 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 51** 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** according to 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, therefore, consumption rates depend on the porosity). If there are deep hollows or badly deteriorated areas on the substrate, repair these areas beforehand using **MAPEFLOOR EP19** three-component epoxy mortar, 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: **MAPEFLOOR I 500 W**.

Non-slip multi-layered coating - 3 mm

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

1st coat (MAPEFLOOR I 500 W)

Pour component A (2 kg) into component B (24 kg), add **MAPECOLOR PASTE** and mix with a drill at low speed with a spiral mixing attachment to form a smooth, even paste. Slowly add 2 litres of water while mixing and keep mixing to form an even compound. Pour the mix onto the floor to be coated and spread it out evenly and uniformly with a smooth trowel or notched spreader. Fully broadcast the product while it is still wet with **QUARTZ 0.5**. For particular requirements, such as if a higher degree of non-slip finish is required, use **QUARTZ 0.9** or even larger. In such cases the consumption rate of the next coat will be higher.
Once **MAPEFLOOR I 500 W** has hardened remove all excess sand with an industrial vacuum cleaner, sand the surface and remove all traces of dust with a vacuum cleaner.

Finishing coat (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 drill at low speed with a spiral mixing attachment to form a smooth, even paste. Slowly add 2 litres of water while mixing and keep mixing to form an even compound. Pour the mix onto the floor to be coated and spread it out evenly and uniformly with a smooth trowel or spreader, then immediately pass over the surface with a medium-piled roller to even out the finishing coat.

5. Hardening and step-on times

At +25°C, **MAPEFLOOR SYSTEM 51** 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 a coated floor, improves its aesthetic properties and reduces its tendency to collect dirt. Floors created using the **MAPEFLOOR SYSTEM** are generally easy to wash with neutral detergents, or with alkali detergents diluted at a concentration of 5 to 10% in water.
MAPEFLOOR MAINTENANCE KIT is available for maintenance operations and includes **MAPELUX LUCIDA**, metallic wax, **MAPEFLOOR WAX REMOVER** and **MAPEFLOOR CLEANER ED**, detergent for daily cleaning operations.
Our Technical Services Department is available for any information required.

TECHNICAL DATA

TECHNICAL DATA (after 7 days at +23°C)	
Adhesion (EN 13892-8)	> 1.5 N/mm² - failure of substrate
TABER abrasion resistance (CS 17 disk - 1000 revs - 1000 g) (EN ISO 5470-1)	85 mg
Compressive strength (EN 196)	75 N/mm²
Flexural strength (EN 196)	30 N/mm²
Service temperature (air temperature)	-20°C / +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.

Mapei S.p.A.

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