

Mapecoat System 31

MULTI-LAYERED EPOXY SYSTEM WITH HIGH SOLIDS CONTENT FOR INDUSTRIAL FLOORS; THICKNESS FROM 0.8 TO 1.2 mm

Products used for the system:

Primer SN - Mapecoat I 300 SL - Mapecoat I 302 SL - Quartz 0.5 - Quartz 0.25

DESCRIPTION

MAPECOAT SYSTEM 31 is a multi-layered epoxy system used to make coatings on industrial floors with a pronounced slip-resistant finish 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 **MAPECOAT SYSTEM 31** also have an attractive finish.

AREAS OF USE

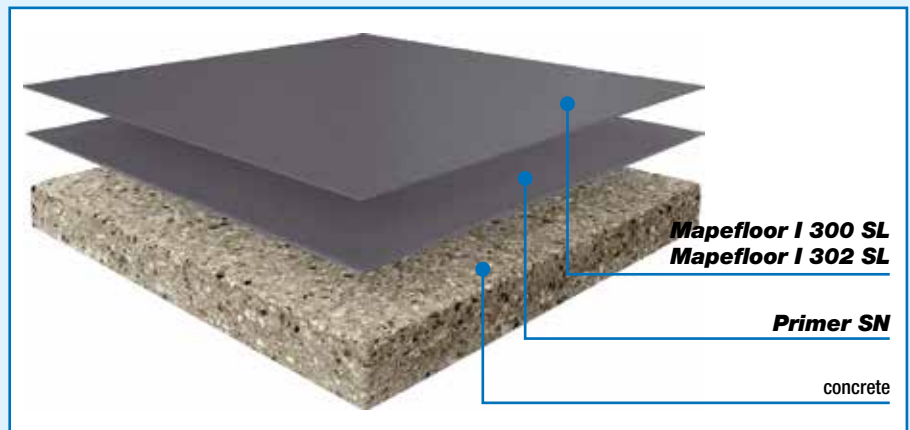
Coating industrial floors subjected to light to medium traffic such as warehouses, storage areas, garages, covered parking areas, pedestrian zones and areas where forklifts are used.

MAPECOAT SYSTEM 31 is suitable for the following:

- storage areas in the chemical and pharmaceutical industries;
- processing and storage areas in the foodstuffs industry, transit areas between different sectors and in areas where light vehicles are used;
- all areas of mechanised warehouses;
- storage areas and in areas where a slip-resistant surface is required;
- shopping centres in areas with intense pedestrian traffic and in areas where goods are stored.

PERFORMANCE AND ADVANTAGES

- Non-slip finish.
- High solids content.
- Durable, characterised by its high resistance to wear and abrasion from continuous pedestrian traffic.
- Resistant to a large number of 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 used by light to medium traffic or for walkways.
- Forms an attractive, flat, seamless, highly functional surface.



Mapefloor System 31

- Reduces the time required to carry out work so lower down times of equipment and machinery.
- Guarantees an excellent cost-performance ratio.

CHEMICAL RESISTANCE

At room temperature, floors coated with **MAPEFLOOR SYSTEM 31** are temporarily 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 300 SL - MAPEFLOOR I 302 SL** 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;
- mineral oils, diesel, kerosene and petrol.

Floors coated with **MAPEFLOOR SYSTEM 31** are not suitable for constant exposure to high temperatures and thermal shock.

COLOURS AVAILABLE

MAPEFLOOR SYSTEM 31 is available in 19 colours from the RAL colour chart: refer to the colours in the **MAPECOLOR PASTE** range for **MAPEFLOOR I 300 SL - MAPEFLOOR I 302 SL**.

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 with a diamond grinding wheel or by light shot-blasting. Rougher surfaces, or application at lower temperatures, will lead to an increase in consumption and longer hardening times.

The consumption rate for **PRIMER SN** in particular may vary, depending on the type and depth of the method used to prepare the substrate.

MAPEFLOOR SYSTEM 31

average thickness
1 mm

TECHNICAL DATA (after 7 days at +23°C)

Adhesion strength (EN 13892-8; 2004) N/mm ²	≥ 1.5
TABER abrasion resistance (CS17 disk - 1000 revs - 1000 g) mg	55
Service temperature (air temperature) °C	-20 / +50
Finish	shiny

1° coat:

PRIMER SN

(A+B + **MAPECOLOR PASTE**):

0.7 kg/m²

QUARTZ 0.5:

0.14 kg/m²

Broadcast on wet product

QUARTZ 0.5:

3.0 kg/m²

Finishing coat:

MAPEFLOOR I 300 SL - MAPEFLOOR I 302 SL

(A+B + **MAPECOLOR PASTE**):

0.6 kg/m²

QUARTZ 0.25:

0.04 kg/m²

N.B.: If **MAPEFLOOR I 300 SL - MAPEFLOOR I 302 SL - MAPEFLOOR I 302 SL** is available in the colour required, do not add **MAPECOLOR PASTE**.

PREPARATION OF THE SURFACE

1. Characteristics of the substrate

Before applying the **MAPEFLOOR SYSTEM 31** system, 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:

- 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 process. Please contact Mapei Technical Services Department for advice and information.

- The pull-off strength of the substrate must be more than 1.5 MPa.
- The level of moisture in the substrate must be a maximum of 4% and there must be a suitable vapour barrier or no capillary rising damp (check by testing with a sheet of polythene according to ASTM standards). If these conditions are not met, use **MAPEFLOOR SYSTEM 51** or **MAPEFLOOR SYSTEM 52**, otherwise **MAPEFLOOR SYSTEM 31** could detach and/or blisters could form in the coating.

If all the above conditions are met, **MAPEFLOOR SYSTEM 31** 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. Preparation of the substrate

It is very important that the surface is prepared as specified to guarantee correct application and the best performance of the **MAPEFLOOR SYSTEM 31** epoxy system.

The most suitable method to prepare the surface is a diamond grinding wheel followed by removal of all the dust with a vacuum cleaner or by shot-blasting, taking care not to go too deep 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 300 SL - MAPEFLOOR I 302 SL**, depending on the width and depth of the defects and cracks.

If the substrate needs to be

consolidated use **PRIMER MF** or **PRIMER EP** (choose the most suitable product according to the porosity of the substrate, which will also have an effect on the consumption rate). If there are deep hollows or highly deteriorated areas 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 be 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: **PRIMER SN** and **MAPEFLOOR I 300 SL - MAPEFLOOR I 302 SL**.

Non-slip multi-layered coating - 0.8-1.2 mm

- **1° layer (PRIMER SN)** Pour component B (4 kg) into component A (16 kg), add **MAPECOLOR PASTE** and mix with a drill at low speed with a spiral mixing

attachment to form a smooth, even paste. While mixing, add 4 kg of **QUARTZ 0.5** to the mixture prepared as described above, and continue mixing for a few minutes to form a smooth, even paste. Pour the product onto the floor to be coated and spread it out evenly and uniformly using a straight steel trowel. 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 sand with a particle size of 0.3-0.9 mm or even larger. In such cases the consumption rate of the next coat will be higher. Once **PRIMER SN** 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 300 SL - MAPEFLOOR I 302 SL)**

Pour the contents of component B into the container of component A, add the coloured paste **MAPECOLOR PASTE** at a ratio of 7-9% by weight component B (2 kg) into component A (6 kg), add **MAPECOLOR PASTE** (0.7 kg of **MAPEFLOOR PASTE** for each kit of **MAPEFLOOR I 300 SL**) and mix with a drill at low speed with a spiral mixing attachment to form a smooth, even paste. While mixing, add 0.5 kg of **QUARTZ 0.25** to the mixture prepared as described above and mix again to form a smooth, even compound. Apply the compound with a medium-piled roller to form an even, seamless coat, making sure that the roller strokes criss-cross over each other to obtain a defect-free surface. An alternative method

is to apply the compound with a straight steel trowel, spread it down to a feather edge and then backroll with a short-piled roller.

5. Hardening and step-on times

At +25°C **MAPEFLOOR SYSTEM 31** 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. 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. Our Technical Services Department is available for any information required.

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 system 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.



