

# MAPEFLOOR I 500 W

Two-component multi-purpose neutral-coloured epoxy formulate in water dispersion to create vapour-permeable coatings on industrial floors



## WHERE TO USE

**Mapecfloor I 500 W** is a two-component epoxy formulate in water dispersion used to create self-levelling and/or multi-layered resin coatings permeable to water vapour with an attractive, smooth or non-slip finish on industrial floors.

### Some application examples

- Coating floors in the chemical and pharmaceutical industries.
- Coating floors in the foodstuffs industry.
- Coating floors in laboratories.
- Coating floors in mechanised warehouses.
- Coating floors in shopping centres.
- Coating floors with no vapour barrier.
- Coating floors in underground car-parks.

## TECHNICAL CHARACTERISTICS

**Mapecfloor I 500 W** is a two-component fillerized epoxy resin formulate according to a formula developed in the MAPEI R&D laboratories.

**Mapecfloor I 500 W** is highly versatile and is used to create protective coatings permeable to water vapour. It is suitable for use, therefore, on damp substrates or on substrates with capillary rising damp.

Even though **Mapecfloor I 500 W** is a water-based product it does not shrink, and the thickness of a dry layer is virtually the same as that of a wet layer.

Also, since **Mapecfloor I 500 W** is a water-based product, it is safe for the environment and so particularly suitable for the foodstuffs industry. After application, surfaces are seamless and flat with a highly attractive finish.

**Mapecfloor I 500 W** hardens even at low temperatures (around +5°C) and may be applied on concrete after only 4 days of curing.

**Mapecfloor I 500 W** is strong, has excellent resistance to chemicals and abrasion and may be used in both self-levelling and multi-layered coating systems.

## RECOMMENDATIONS

- Do not dilute **Mapecfloor I 500 W** with solvent.
- Do not apply **Mapecfloor I 500 W** on dusty, crumbling or weak surfaces.
- Do not apply **Mapecfloor I 500 W** on substrates with oil or grease stains or stains in general.
- 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.
- Coatings made from **Mapecfloor I 500 W** may change colour or fade if exposed to sunlight but this has no effect on its performance characteristics.
- The coating may also change colour if it comes into contact with aggressive chemicals. A change in colour, however, does not mean that it has been damaged by the chemical.

- Remove aggressive chemicals as soon as possible after they come into contact with **Mapecolor I 500 W**.
- Use suitable specific cleaning equipment and detergent to clean the product, depending on the type of dirt or stain to be removed.
- Protect the product from water for at least 24 hours after application.

## APPLICATION TECHNIQUE

### Preparation of the substrate

The surface of concrete floors must be flat or with a maximum slope of 1.5%, dry, clean and sound and have no crumbling or detached portions. The substrate concrete must have been poured at least 10 days before applying the coating, its compressive strength must be at least 25 N/mm<sup>2</sup> and its tensile strength must be at least 1.5 N/mm<sup>2</sup>. The strength of the substrate must also be suitable for its final use and the types of load to which it will be subjected.

The surface of the floor must be prepared with a suitable mechanical process (e.g. shot-blasting or grinding with a diamond disk) to remove all traces of dirt and cement laitance and crumbling or detached portions, and to make the surface slightly rough and absorbent. Before applying the coating, remove all dust from the surface with a vacuum cleaner.

Any cracks must be repaired by filling them with **Eporip**, while any deteriorated areas of the concrete must be repaired with **Mapecolor EP19**, a cementitious mortar from the **Mapecolor** range or with **Planitop 400**.

### Application of primer

The substrate on which **Mapecolor I 500 W** is to be applied must be wetted just before applying the product. Do not allow puddles or standing water to form on the surface. **Mapecolor I 500 W** must only be applied on damp, matt substrates. If the substrate also needs to be consolidated, apply a coat of **Mapecolor I 600 W** water-based epoxy primer. Priming the substrate is always recommended before applying **Mapecolor System 53** self-levelling coatings.

### Preparation of Mapecolor I 600 W primer

Pour component A into component B and carefully blend together with a low-speed mixer with a spiral mixing attachment until a smooth, even mix is obtained. Slowly dilute the product with water at a rate of up to 1:1 in weight and keep mixing. Spread the mix on the substrate with a medium-piled roller to form an even coat then lightly broadcast with **Quartz 0.5** to ensure that the next coating of resin adheres perfectly.

### Preparation of the product

Mix component A thoroughly and add the contents of component B. Add **Mapecolor Paste** (1.4 kg of colouring paste for each 26 kg kit of **Mapecolor I 500 W**) and mix again with an electric mixer at low speed to prevent entraining air into the mix (300-400 revs/min); add 2 litres of clean water while mixing. In cold weather the amount of water added to dilute the mix may be increased to up to 3 litres.

In order to obtain a homogeneous colour finishing, dilute **Mapecolor I 500 W** with the same amount of water in all areas of the site. However, the pressure of water can cause light colour differences. Mix for at least 2 minutes until it is completely blended.

Pour the mix into a clean container and briefly mix again.

Do not mix the product for too long to prevent entraining too much air into the mix.

Mix occasionally the material being left in the container during pouring phase.

### Application of the product

**Mapecolor I 500 W** may be used to create non-slip coatings (3 to 5 mm thick) and self-levelling coatings (2 to 4 mm thick). Apply the mix within the pot life indicated in the table (refers to a temperature of +20°C). Higher surrounding temperatures will reduce the pot life of the mix, while lower temperatures will increase its pot life.

Application procedures:

#### 1. Multi-layered non-slip coating - thickness approx. 3 mm (Mapecolor System 51)

- Prepare the substrate as specified (we recommend shot-blasting or rough grinding with a diamond disk) and remove all dust with a vacuum cleaner.
- Wet the surface with **Mapecolor I 600 W** or apply an even coat of the product over the entire surface using a medium-piled roller then lightly broadcast with **Quartz 0.5** so that the next coat of resin adheres perfectly.
- Prepare the **Mapecolor I 500 W** mix, pour it on the floor and spread it out evenly with a straight trowel or notched rake.
- Fully broadcast with **Quartz 0.5**. For particular requirements, such as if a higher degree of non-slip finish is required, sand with a larger particle size may be used. In such cases the consumption rate of the next coat will be higher.
- When the product has hardened remove any excess sand, sand the surface and remove the last grains of sand with an industrial-grade vacuum cleaner. Prepare the **Mapecolor I 500 W** mix, pour it on the floor and spread it out evenly with a straight trowel or notched rake. Go over the surface of the resin if required to even out the finish.

#### 2. Multi-layered non-slip coating - thickness approx. 5 mm (Mapecolor System 52)

- Prepare the substrate as specified (we recommend shot-blasting or rough grinding with a diamond disk) and remove all dust with a vacuum cleaner.
- Wet the surface with **Mapecolor I 600 W** or apply an even coat of the product over the entire surface using a medium-piled roller. Then lightly broadcast with **Quartz 0.5** so that the next coat of resin adheres perfectly.
- Prepare the **Mapecolor I 500 W** mix, pour it on the floor and spread it out evenly with a straight trowel or notched rake.
- Fully broadcast with **Quartz 0.5**. For particular requirements, such as if a higher degree of non-slip finish is required, sand with a larger particle size may be used. In such cases the consumption rate of the next coat will be higher.
- When the product has hardened remove any excess sand, sand the surface and remove the last grains of sand with an industrial-grade vacuum cleaner. Prepare the **Mapecolor I 500 W** mix, pour it on the floor and spread it out evenly with a straight trowel or notched rake, then fully broadcast with the same quartz sand used for the previous layer.

- When the product has hardened remove any excess sand, sand the surface and remove the last grains of sand with an industrial-grade vacuum cleaner. Prepare the **Mapecolor I 500 W** mix, pour it on the floor and spread it out evenly with a straight trowel or notched rake. Go over the surface of the resin if required to even out the finish.

### 3. Smooth self-levelling coating - thickness approx. 2-4 mm (Mapecolor System 53)

- Prepare the substrate as specified (we recommend shot-blasting or rough grinding with a diamond disk) and remove all dust with a vacuum cleaner.
- Wet the surface with **Mapecolor I 600 W** or apply an even coat of the product over the entire surface using a medium-piled roller then lightly broadcast with **Quartz 0.5** so that the next coat of resin adheres perfectly.
- Prepare the **Mapecolor I 500 W** mix, pour it on the floor and spread it out evenly to the thickness required with a straight trowel or notched rake (with "V" shaped teeth).
- Backroll intensively with a spiked roller while the product is still wet to even out the thickness of the coat and to remove any air entrapped in the product.

It is possible to increase the resistance to abrasion of the surface and make it easier to clean by applying a coat of finish from the **Mapecolor Finish** range of aliphatic polyurethane products. Please contact Mapei Technical Services in such cases.

In order to reach the best surface colour homogeneity apply one coats of pre-pigments **Mapecolor Finish 58 W**.

## CONSUMPTION

### 1. Multi-layered non-slip coating - thickness approx. 3 mm (Mapecolor System 51)

Primer (if required):

**Mapecolor I 600 W (A+B):** 0,4 kg/m<sup>2</sup>

broadcast with **Quartz 0.5** on wet primer: 0,5 kg/m<sup>2</sup>

1° coat:

**Mapecolor I 500 W (A+B + Mapecolor Paste):** 2,5 kg/m<sup>2</sup>

broadcast with **Quartz 0.5** while still wet: 5 kg/m<sup>2</sup>

Finishing coat:

**Mapecolor I 500 W (A+B + Mapecolor Paste):** 0,7 kg/m<sup>2</sup>

### 2. Multi-layered non-slip coating - approx. 5 mm thick (Mapecolor System 52)

Primer (if required):

**Mapecolor I 600 W (A+B):** 0,4 kg/m<sup>2</sup>

broadcast with **Quartz 0.5** on wet primer: 0,5 kg/m<sup>2</sup>

1° coat:

**Mapecolor I 500 W (A+B + Mapecolor Paste):** 2,5 kg/m<sup>2</sup>

broadcast with **Quartz 0.5** while still wet: 5 kg/m<sup>2</sup>

2° coat:

**Mapecolor I 500 W (A+B + Mapecolor Paste):** 2,5 kg/m<sup>2</sup>

broadcast with **Quartz 0.5** while still wet 5 kg/m<sup>2</sup>



Finishing coat:

**Mapecolor I 500 W (A+B + Mapecolor Paste):** 0,7 kg/m<sup>2</sup>

### 3. Smooth self-levelling coating - thickness 2-4 mm (**Mapecolor System 53**)

Primer:

**Mapecolor I 600 W (A+B):** 0,4 kg/m<sup>2</sup>

broadcast with **Quartz 0.5** on wet primer: 0,5 kg/m<sup>2</sup>

Smooth self-levelling coating:

**Mapecolor I 500 W (A+B + Mapecolor Paste):** 2 kg/m<sup>2</sup> per mm of thickness (4 kg/m<sup>2</sup> every 2 mm of thickness)

The consumption rates above are theoretical calculated using **Quartz 0.5** for the dry shake finish, and are influenced by the condition of the surface to be treated, absorbency, roughness, the actual conditions on site, etc.

## CLEANING TOOLS

Clean tools used to prepare and apply **Mapecolor I 500 W** with water immediately after use. Once hardened, the product may only be removed using mechanical means.

## PACKAGING

26 kg kits:  
component A = 2 kg; component B = 24 kg.

## STORAGE

The product must be stored in its original packaging in a dry place at a temperature of at least +5°C. 12 months.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Mapecolor I 500 W** component A is irritant for the skin and eyes, can cause sensitisation in those predisposed. **Mapecolor I 500 W** component B is corrosive and may cause damages to eyes. During the application it is recommended to wear protective gloves and goggles and to take the usual precautions for handling chemical products. In case of contact with the eyes or skin wash immediately with plenty of water and seek medical attention. Furthermore, **Mapecolor I 500 W** component A is dangerous for the aquatic life, do not dispose of it in the environment. **Mapecolor I 500 W** component A is harmful for aquatic life. Do not dispose of the product in the environment. 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.

TECHNICAL DATA (typical values)		
PRODUCT IDENTITY		
	component A	component B
Colour:	neutral	straw-yellow

Consistency:	liquid	paste	
Density (g/cm³):	1.14	2.3	
Viscosity at +23°C (mPa·s):	1,600 ÷ 2,700 (# 2 - rpm 10)	70,000 ÷ 90,000 (# 6 - rpm 10)	
APPLICATION DATA (at +23°C and 50% R.H.) (A+B)			
Mixing ratio:	component A : component B = 1 : 12		
Colour of mix:	neutral		
Consistency of mix:	fluid		
Density of mix (kg/m³):	2,150		
Viscosity of mix (A+B) (mPa·s):	60,000 ÷ 70,000 (# 6 - rpm 10)		
Pot life of mix at +20°C:	20 mins.		
Application temperature:	from +8°C to +35°C (refers to the surroundings, material and substrate)		
Waiting time between coats at +23°C and 50% R.H.: – on Mapecoat I 600 W with a light dry-shake finish of quartz sand:	min. 6 hours max. 72 hours *surfaces must be dry with no dust		
Hardening time at +23°C and 50% R.H.: – dust dry: – set to foot traffic: – full hardening time:	3-4 hours approx. 16 hours approx. 7 days		
The times above are for indication purposes only and are influenced by actual site conditions (e.g. temperature of the surroundings and substrate, relative humidity of the surrounding air, etc.).			
FINAL PERFORMANCE			
Taber Test after 7 days (EN ISO 5470-1) (at +23°C, 50% R.H, 1,000 cycles/1,000 g, CS17 disk) (mg):		110	
Performance characteristic	Test method	Requirements according to EN 13813 for synthetic resin-based screeds	Performance of product
BCA wear-resistance:	EN 13892-4	≤ 100 µm	20 µm
Adhesion strength:	EN 13892-8; 2004	≥ 1.5 N/mm²	3.10 N/mm² (failure of concrete)
Impact strength:	EN ISO 6272	≥ 4 Nm	20 Nm
Permeability to water vapour:	EN 12086	none	1199 µ
Reaction to fire:	EN 13501-1	from A <sub>fl</sub> to F <sub>fl</sub>	B <sub>fl</sub> - s1

**WARNING**



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*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](http://www.mapei.com)**

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