



# Mapecoat I 24

**Two-component epoxy paint for anti-acid coating of concrete surfaces**



## WHERE TO USE

Protection of floors, reservoirs and concrete pipes in contact with aggressive chemical agents such as acids, caustic solutions and hydrocarbons.

### Some application examples

- Anti-acid protection of sewage pipes.
- Protective coating of purification tanks.
- Chemical and mechanical protection of industrial floorings.
- Protection of exhaust tanks for oil and hydrocarbons.

## TECHNICAL CHARACTERISTICS

**Mapecoat I 24** is a two-component epoxy-resin based paint with special pigments that provide excellent covering capability, prepared according to a formula developed in the MAPEI Research Laboratories. After drying completely, **Mapecoat I 24** resists the aggressive action of acids, alkalis, salts, oils, hydrocarbons and solvents, as shown in Table 1 overleaf. **Mapecoat I 24** resists frost, maintaining the appearance of the surface treated.

**Mapecoat I 24** complies with principles defined by 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 standards ("Protection systems for concrete surfaces") for class: products for protecting surfaces - coating (C) - protection against ingress (PI) + moisture control (MC) + physical resistance/surface improvement

(PR) + resistance to chemicals (RC) + increasing resistivity by limiting moisture content (IR).

## RECOMMENDATIONS

- Do not use **Mapecoat I 24** on damp surfaces if **Triblock P** has not previously been applied.
- Do not dilute **Mapecoat I 24** with solvents or water.
- Do not apply **Mapecoat I 24** if rain is imminent.
- Do not apply **Mapecoat I 24** at temperatures below +5°C.
- Do not apply **Mapecoat I 24** on hot surfaces or surfaces exposed to direct sunlight.
- During hot weather, before mixing the two parts, avoid their exposure to direct sun. It is recommended to store them for at least 24 hours at +10°C.
- Do not apply **Mapecoat I 24** on dusty or crumbly surfaces.
- Do not apply **Mapecoat I 24** on surfaces subject to rising damp (consult our Technical Service).

## APPLICATION PROCEDURE

### Preparing the substrate

The surfaces to be coated must be completely clean, solid and dry.

Sandblast surfaces to remove loose particles, dust, grease, and traces of form-release oils and paint. Seal cracks or deteriorated areas with products from the **MapegROUT** line.

Porosities and small surface imperfections can be levelled with **Mapefinish** smoothing compound. In case of damp substrates **Mapecoat I 24** must be used after applying **Triblock P**, three-component epoxy-cementitious primer (consult the technical data sheet for **Triblock P**).

# Mapecoat I 24



Mixing component B with component A



Applying Mapecoat I 24 with roller



Applying first coat of Mapecoat I 24 on concrete

**Triblock P**, diluted with water, can be used as it is, or with sand, such as **Quartz 0.25** or **Quartz 0.5**, which should be added when a smoothing compound suitable on irregular concrete surfaces is desired.

**Mapecoat I 24** can only be applied when the complete curing of the substrate has occurred.

## Preparing the paint

The two components which make up **Mapecoat I 24** must be mixed together. Pour component B (hardener) into component A (resin) and mix with a stirrer

at low speed to avoid the formation of air bubbles, until a homogeneous paste is obtained.

Do not use partial quantities of the components, thus avoiding accidental errors in dosage that would compromise the hardening of **Mapecoat I 24**.

**Mapecoat I 24** is available in the following colours: white, grey (RAL 7001) and neutral. Under request the neutral **Mapecoat I 24** may be coloured with **Mapecolor Paste** while preparing the product. For each 5 kg **Mapecoat I 24** packaging, 0.7 kg of

## CHEMICAL RESISTANCE OF MAPECOAT I 24

CHEMICAL PRODUCTS	Concentration (%)	EXPOSURE	
		PERMANENT	SPORADIC
ACIDS			
Acetic acid	2.5	+	+
Hydrochloric acid	37	(+)	+
Chromic acid	20	-	-
Citric acid	10	+	+
Formic acid	2.5	+	+
Lactic acid	2.5	+	+
Lactic acid	5	+	+
Lactic acid	10	+	+
Nitric acid	25	-	(+)
Nitric acid	50	-	-
Pure oleic acid	100	(+)	+
Phosphoric acid	50	+	+
Phosphoric acid	75	+	+
Sulphuric acid	1.5	+	+
Sulphuric acid	50	(+)	+
Sulphuric acid	96	-	-
Tannic acid	10	+	+
Tartaric acid	10	+	+
Oxalic acid	10	+	+
ALKALIS			
NH <sub>3</sub> in water solution	25	+	+
Caustic soda	50	+	+
Hypochlorite, Na sol. (active chlorine 6,4 g/l)		+	+
SATURATED SOLUTIONS			
Sodium hyposulphite		+	+
Calcium chloride		+	+
Ferric chloride		+	+
Sodium chloride		+	+
Sodium chromate		+	+
Sugar		+	+
Aluminium sulphate		+	+
Potassium hydroxide	50	+	+
Hydrogen peroxide	1	+	+
Hydrogen peroxide	10	+	+
Sodium bisulphite	10	+	+
OILS and FUELS			
Petrol, fuels		+	+
Oil of turpentine		+	+
Diesel oil		+	+
Coal tar oil		(+)	+
Olive oil		+	+
Light fuel oil		+	+
Heavy fuel oil		+	+
Petroleum		+	+
SOLVENTS			
Ethylene glycol		+	+
Glycerine		+	+
Methylcellosolve		-	-
Perchloroethylene		-	(+)
Carbon tetrachloride		(+)	+
Trichloroethylene		-	-
Chloroform		-	-
Methylene chloride		-	-
Tetrahydrofuran		-	-
Toluene		(+)	+
Carbon sulphide		-	+
Benzene		+	+
Trichloroethane		(+)	+
Xylene		(+)	+
Benzol		(+)	+
+ EXCELLENT RESISTANCE	(+) GOOD RESISTANCE	- POOR RESISTANCE	

## TECHNICAL DATA (typical values)

### PRODUCT IDENTIFICATION

	component A	component B
<b>Colour:</b>	white, grey (RAL 7001) and neutral	transparent
<b>Consistency:</b>	thick paste	fluid
<b>Density (g/cm³):</b>	1.43	1.003
<b>Viscosity (mPa·s):</b>	2,500 (5 shaft, 20 rev.)	500 (2 shaft, 50 rev.)
<b>Storage:</b>	24 months in original packaging	
<b>Hazard classification according to EC 1999/45:</b>	irritant, flammable, hazardous to the environment Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet	corrosive, flammable, hazardous to the environment
<b>Customs class:</b>	3907 30 00	

### COMPOSITION AND PROPERTIES OF THE MIXTURE (at +23°C and 50% R.H.)

<b>Mixing ratio:</b>	component A : component B = 4 : 1
<b>Density (A+B) (kg/m³):</b>	1,300
<b>Viscosity (A+B) (mPa·s):</b>	1,500 (3 shaft - 10 rev.)
<b>Colour (A+B):</b>	white grey (RAL 7001) and neutral
<b>Application temperature:</b>	from +5°C to +30°C
<b>Pot life:</b>	30'-40'
<b>Setting time of film:</b>	4-5 hours
<b>Interval between coats:</b>	6-24 hours
<b>Final hardening time:</b>	3 days

**Mapecolor Paste** (colourer in paste form) must be added.

### Applying the paint

**Mapecoat I 24** can be applied with traditional methods, that is with brush, roller, or airless spray gun in 2 coats.

The second coat can be applied from 6 to 24 hours later, depending on ambient conditions. Protect the coated surface from rain for at least 12 hours.

**Mapecoat I 24** is ready for light foot traffic after 24 hours.

### Maintenance during application

The surface coated with **Mapecoat I 24** can be washed with water and detergents (after a preliminary test, given the large number of cleaning products on the market).

### Cleaning

Brushes, rollers and airless spray guns can be cleaned with ethyl alcohol before **Mapecoat I 24** dries.

### CONSUMPTION

400-600 g/m² per coat.

### PACKAGING

**Mapecoat I 24** is available in 5 kg units (component A kg 4 + component B kg 1).

### STORAGE

**Mapecoat I 24** can be stored for 24 months in a dry place, away from heat and flame, at temperatures between +5°C and +30°C.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Mapecoat I 24** component A is flammable and irritant for eyes and skin; component B is corrosive, can cause burns and is harmful by inhalation. Both component A and B can cause allergic reactions to those predisposed.

Use gloves and protective clothing and goggles. Do not smoke - avoid formation of flames and sparks. In case of contact with eyes, wash immediately with plenty of water and consult a doctor.

**Mapecoat I 24** (component A and B) is hazardous for aquatic life - do not release the product to the environment.

For further information refer to the Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

### WARNING

*Although the technical details and recommendations contained in this 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 applications; 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.*



Spreading dry sand on fresh Mapecoat I 24



Finished surface

# Mapecoat I 24



## PERFORMANCE CHARACTERISTICS IN COMPLIANCE WITH CE-CERTIFICATION EN 1504-2 - Table ZA.1d and ZA.1g (Coating C, PI-MC-PR-RC-IR)

Performance characteristics	EN 1504 Test Method	Requirements	Product performance
Abrasion resistance (TABER test) Note: Testing methods according to EN 13813 for flooring systems are also acceptable	EN ISO 5470-1	Loss in weight less than 3000 mg after 1000 cycles with an H22 abrasive disk with a load of 1,000 g	919 mg
Permeability to CO <sub>2</sub>	EN 1062-6 (sample treated according to EN 1062-11)	Permeability to CO <sub>2</sub> S <sub>D</sub> > 50 m	S <sub>D</sub> 1255 m
Permeability to water vapour	EN ISO 7783-1-2	Class I: S <sub>D</sub> > 5 m (permeable to water vapour) Class II: 5 m ≤ S <sub>D</sub> ≤ 50 m Class III: S <sub>D</sub> > 50 m (not permeable to water vapour)	Class III
Capillary absorption and permeability to water	EN 1062-3	w < 0.1 kg/m <sup>2</sup> ·h <sup>0.5</sup>	0.02 kg/m <sup>2</sup> ·h <sup>0.5</sup>
Resistance to thermal shock (1x)	EN 13687-5	≥ 2 MPa	3.5 MPa
Resistance to severe chemical attack Class I: 3 days with no pressure Class II: 28 days with no pressure Class III: 28 days with pressure We recommend using test liquids for the 20 classes indicated in EN 13529, which cover all types of the most commonly-used chemical agents. Other test liquids may be agreed upon between those interested in the tests	EN 13529	Reduction of hardness less than 50% when measured according to the Buchholz method (EN ISO 2815) or the Shore method (EN ISO 868), 24 hours after removing the dressing material from immersion in the test liquid	No variation in performance. Bubbles with 10% acetic acid after 28 days
Resistance to impact measured on MC (0.40) coated concrete samples according to EN 1766. Note: The forecast thickness and impact load influence which class is chosen	EN ISO 6272-1	No cracks or delamination after loading Class I: ≥ 4 Nm Class II: ≥ 10 Nm Class III: ≥ 20 Nm	Class I
Direct traction adherence test. Reference substrate: MC (0.4) as specified in EN 1766 curing: – 28 days for single component systems containing concrete and PCC systems – 7 days for systems with reactive resin	EN 1542	Average (N/mm <sup>2</sup> ) Cracking or flexible systems with no traffic: ≥ 0.8 (0.5) <sup>9)</sup> with traffic: ≥ 1.5 (1.0) <sup>9)</sup> Rigid system <sup>9)</sup> with no traffic: ≥ 1.0 (0.7) <sup>9)</sup> with traffic: ≥ 2.0 (1.0) <sup>9)</sup>	3.89 MPa
Reaction to fire after application	EN 13501-1	Euroclasses	E <sub>fl</sub>



Via Cafiero, 22 - 20158 Milan (Italy)

**The date of production is printed on the package**

**1305-CPD-0616**  
EN 1504-2

Surface protection product - Coating for intended use in protection against ingress; moisture control and increasing resistivity; physical resistance; chemical resistance

Abrasion resistance:	> 3000 mg
Permeability to CO <sub>2</sub> :	S <sub>D</sub> > 50 m
Water vapour permeability:	Class III
Capillary absorption and permeability to water:	≤ 0.1 kg·m <sup>-2</sup> ·h <sup>-0.5</sup>
Resistance to thermal shock:	≤ 2.0 MPa
Resistance to severe chemical attack:	reduction in hardness Shore D < 50%
Impact resistance:	Class I
Adhesion strength by pull-off test:	≥ 1.5 N/mm <sup>2</sup>
Reaction to fire:	E <sub>fl</sub>
Dangerous substances:	comply with 5.4

**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**

