MAPECOAT I 24

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

CE EN 1504-2

IN COMPLIANCE WITH EUROPEAN STANDARD EN 1504-2 (C) PRINCIPLES PI-MC-PR-RC-IR MAPEI SURFACE PROTECTION SYSTEMS FOR CONCRETE

WHERE TO USE

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

Some application examples

· Chemical protection of sewage pipes.
· Protective coating of purification tanks.
· Chemical and mechanical protection of industrial floorings.
· Protecting recovery tanks for oil, hydrocarbons, first-flush rainwater, etc.

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.

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 Services Department).
· Do not add **Mapecolor Paste** if the product is supplied ready-coloured.

APPLICATION PROCEDURE

Preparation of 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** range.
Seal all pores and gravel clusters and level off any uneven areas in the sub-layer with **Mapefinish** fine-textured smoothing and levelling compound.
Porosities and small surface imperfections can be levelled with **Mapefinish** smoothing compound.

MAPEI

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**).
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 skim coat 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 white and neutral and in various RAL colours upon request. For the full range of colours available, contact Mapei Technical Services.
Upon 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 **Mapecolor Paste** (colourer in paste form) must be added.
Add 1.4 kg of **Mapecolor Paste** for each 15 kg kit of neutral **Mapecoat I 24**.

Applying the paint

Mapecoat I 24 can be applied with traditional methods, that is with brush, roller, or airless spray gun in at least 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).
Once hardened the product may only be removed mechanically.

Mixing component B with component A

Applying Mapecoat I 24 with roller

Applying first coat of Mapecoat I 24 on concrete

CLEANING

Brushes, rollers and airless spray guns can be cleaned with ethyl alcohol before **Mapecoat I 24** dries. Once hardened the product may only be removed mechanically.

CONSUMPTION

400-600 g/m^2 per coat.

PACKAGING

Mapecoat I 24 is available in 5 kg units (component A: 4 kg + component B: 1 kg).
Mapecoat I 24 is available in 15 kg units (component A: 12 kg + component B: 3 kg).

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 inflammable. It is recommended to store the product away from naked flames and sparks, to avoid smoking, to prevent the build-up of electrostatic energy and to work in well ventilated areas. It also irritates the eyes and skin. Component B is corrosive and can cause burns and damage to the eyes. Components A and B may cause sensitisation to those predisposed if they come into contact with the skin. The product contains low molecular weight epoxy resins that may cause sensitisation if cross-contamination occurs with other epoxy compounds. When applying the product it is recommend to wear protective gloves and goggles and to take the usual precautions for handling chemicals. If the product comes in contact with the eyes or skin wash immediately with plenty of water and seek medical attention. When the product reacts it generates considerable heat. After mixing components A and B, it is recommended to apply the product as soon as possible and to never leave the container unguarded until it is completely empty.
Mapecoat I 24 components A and B are also harmful to 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, white and RAL colours	transparent
Consistency:	thick paste	fluid
Density (g/cm³):	1.43	1.003
Viscosity (mPa·s):	2,500 (5 shaft, 20 rev.)	500 (2 shaft, 50 rev.)
APPLICATION DATA (at +23°C and 50% R.H.)		
Mixing ratio:	component A : component B = 4 : 1	
Density A+B (kg/m³):	1,300	
Viscosity A+B (mPa·s):	1,500 (3 shaft - 10 rev.)	
Colour A+B:	neutral, white and RAL colours	
Application temperature:	from +5°C to +30°C	
Pot life:	30'-40'	
Setting time of film:	4-5 hours	
Interval between coats:	6-24 hours	
Final hardening time:	3 days	

ESSENTIAL CARACTERISTICS IN COMPLIANCE WITH CE-CERTIFICATION EN 1504-2 - Table ZA.1d and ZA.1g (coating C, PI-MC-PR-RC-IR)			
Essential 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	900 mg

Permeability to CO_2	EN 1062-6 (sample treated according to EN 1062-11)	Permeability to CO_2 S_d > 50 m	S_d 1255 m
Permeability to water vapour	EN ISO 7783-1-2	Class I: S_d < 5 m (permeable to water vapour) Class II: 5 m ≤ S_d ≤ 50 m Class III: S_d > 50 m (not permeable to water vapour)	Class III
Capillary absorption and permeability to water	EN 1062-3	W < 0.1 kg/m²·$h^{0,5}$	0,02 kg/m²·$h^{0,5}$
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	Group 9 (class II with bubbles) Group 10 (class II) Group 11 (class II) Group 12 (class II) 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 coating 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/mm²) Cracking or flexible systems with no traffic: ≥ 0.8 (0,5)[b] with traffic: ≥ 1.5 (1,0)[b] Rigid systems[c] with no traffic: ≥ 1.0 (0,7)[b] with traffic: ≥ 2.0 (1,0)[b]	3.89 N/mm²
Reaction to fire:	EN 13501-1	Euroclasses	B_{FL} - s1 C - s1 - d0

CHEMICAL RESISTANCE OF MAPECOAT I 24			
		EXPOSURE	
CHEMICAL PRODUCTS	Concentration (%)	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_3 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			

WARNING

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

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