

Mapecoat Universal

Two-Component, Transparent, Epoxy Resin for Industrial Flooring



DESCRIPTION

Mapecoat™ Universal is a two-component, high-gloss, epoxy resin typically used as a primer, intermediate coat, binder and seal coat for industrial flooring. *Mapecoat Universal* is especially effective at enhancing the adhesion of multilayer flooring systems, such as serving as a clear binder for the installation of decorative, multicolored quartz aggregate such as *Mapecofloor™ DQ* and flake finishes such as *Mapecoflakes™*.

FEATURES AND BENEFITS

- Good chemical and mechanical resistance
- Excellent adhesion to concrete substrates
- Multipurpose

WHERE TO USE

- Use as a primer, intermediate coat (grout coat), binder and seal coat for troweled quartz aggregate such as *Mapecofloor DQ* and flake finishes such as *Mapecoflakes*.
- For institutional buildings, storage areas, logistical areas, and wet and dry processing areas

SUITABLE SUBSTRATES

- Properly prepared substrates such as concrete, cementitious screeds and polymer-modified self-leveling screeds, which must be sound and dry with a compressive strength of at least 3,600 psi (24.8 MPa) and a pull-off strength of at least 200 psi (1.38 MPa)
- Before application of *Mapecoat Universal*, determine the substrate's moisture content as well as the RH and dew point.

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

SURFACE PREPARATION

- All substrates must be structurally sound, stable, clean, and free of any bond-inhibiting or bond-breaking materials such as adhesives, tar, cure-and-seal compounds, curing compounds and mastics.
- Mechanically prepare the surface by engineer-approved methods to obtain an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #3. Construction, expansion, control and isolation joints must be honored through the finished flooring system. To ensure product performance, repair all cracks greater than 1/32" (1 mm) in width and treat joints using engineer-approved methods.
- Fill in static cracks with MAPEI's *Epojet*™ [NA] or *Epojet LV* [NA]. Dynamic cracks should be honored through the coating system unless otherwise directed by engineer of record.
- High spots must be removed by grinding to achieve a level surface.

MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet (SDS) for details.

1. To ensure that all solids are evenly dispersed, mix Part A of *Mapecoat Universal* mechanically for about 1 minute.
2. Pour all of the Part B hardener into the Part A container and mix thoroughly to a smooth, homogeneous consistency.
3. Do not mix at high speeds or overmix, which can trap air within the mixed material. Use an adequate mixing paddle with a low-speed drill mixer (at 300 to 400 rpm).
4. During the mixing process, scrape down the sides and bottom of the container to completely mix all of the components.
5. Apply the mixed *Mapecoat Universal* within the pot life indicated in the "Application Properties" table below. Higher ambient and substrate temperatures will reduce the pot life of the mix, while lower temperatures will increase its pot life as well as increase the viscosity and affect coverage.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Before application, confirm the substrate's moisture content, RH and temperature in relation to dew point. See the "Limitations" section below for details.
2. First coat (prime coat): Apply a priming coat of *Mapecoat Universal* at 9 to 15 mils with a notched squeegee. Back-roll with a short-pile roller (in a crisscross pattern) and broadcast *Mapefloor DQ* or *Mapeflakes* into the *Mapecoat Universal* to saturation.

3. Intermediate coat (grout coat): Apply an intermediate coat of *Mapecoat Universal* at 9 to 15 mils with a notched squeegee. Back-roll with a short-pile roller (in a crisscross pattern) and broadcast *Mapefloor DQ* or *Mapeflakes* into the *Mapecoat Universal* to saturation.
4. Finishing coat (seal coat): Apply a finishing coat of *Mapecoat Universal* at 9 to 15 mils with a notched squeegee and back-roll with a short-pile roller (in a crisscross pattern).
5. Binder: Contact MAPEI's Technical Services Department to inquire about suitable MAPEI products for specific environmental requirements.

CURING

After application, maintain surrounding conditions within the recommended ambient and substrate temperatures, for at least 72 hours at 46°F (8°C) and 24 hours at 95°F (35°C).

CLEANUP AND MAINTENANCE

- Clean all tools and equipment with a suitable solvent, such as xylene. Hardened or cured material must be mechanically removed.

PROTECTION

- Protect the application from dampness for at least 24 hours.

LIMITATIONS

- Do not apply *Mapecoat Universal* on substrates that have not received adequate preparation.
- Do not dilute *Mapecoat Universal* with solvents or water.
- Do not apply *Mapecoat Universal* on dusty or weak substrates.
- Do not apply *Mapecoat Universal* on substrates that have oil, grease or dirt.
- Do not mix partial quantities of the components; otherwise, the product may not perform adequately.
- Do not expose the mixed product to sources of heat.
- The coating may change color if it is exposed to aggressive chemicals. A change of color, however, does not mean that the chemicals have damaged the coating.
- If corrosive substances come into contact with *Mapecoat Universal*, remove them immediately.
- Use only between the ambient and substrate temperatures of 46°F and 95°F (8°C and 35°C).
- Do not use on exterior, on-grade surfaces.
- Ensure that *Mapecoat Universal* is protected from water and condensation for at least 24 hours after application.
- Ensure that the temperature of the concrete is at least 5 degrees Fahrenheit (2.8 degrees Celsius) above the dew point during the application and curing of *Mapecoat Universal*.
- Test the concrete substrate using appropriate methods for testing calcium chloride (ASTM F1869) and methods for testing surface moisture content (ASTM F2170), ensuring that it is below 5 lbs. per 1,000 sq. ft. (2.27 kg per 92.9 m²) or 85% relative humidity (RH).

Product Performance Properties
at 73°F (23°C) and 50% relative humidity

Laboratory Tests	Results
Specific gravity – ASTM D1475	
Part A	9.35 lbs. per U.S. gal. (1.12 kg per L)
Part B	8.43 lbs. per U.S. gal. (1.01 kg per L)
Mix	9.01 lbs. per U.S. gal. (1.08 kg per L)
Viscosity	268 cps
Compressive strength – ASTM D695	
At 7 days	3,756 psi (25.9 MPa)
At 28 days	5,226 psi (36.0 MPa)
Tensile strength – ASTM D638	3,050 psi (21.0 MPa)
Elongation – ASTM D638	25.4%
Pull-off strength – ASTM D7234	> 508 psi (3.50 MPa) (substrate failure)
Surface hardness – ASTM D2240	
24 hours	72
3 days	77
7 days	82
28 days	82
Abrasion resistance – ASTM D4060 CS17/1000 cycles, 2.2 lbs. (1 000 g)	-0.0015 U.S. oz. (-43 mg)
Coefficient of friction – ASTM D1894	
Steel	Static 0.17; kinetic 0.13
Neolite rubber	Static 0.38; kinetic 0.27
Gloss (60 degrees) – ASTM D523	89.9
Water absorption – ASTM D570	0.35%
VOC content (SCAQMD Rule 1113 category)	< 350 g per L
Typical VOC content per SCAQMD Rule 1113 testing methods	67 g per L

Shelf Life and Product Characteristics

Shelf life	2 years when stored in original, unopened packaging
Storage temperature range	41°F to 95°F (5°C to 35°C)
Physical state	Part A: Liquid Part B: Liquid
Color	Part A: Clear Part B: Straw yellow
Mixing ratio	2:1 by weight

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

CSI Classification

High-Performance Coatings	09 96 23
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Approximate Coverage*
for substrate with CSP #3

Wet Film Thickness	Coverage
4 mils	401 sq. ft. per U.S. gal. (9.82 m ² per L)
6 mils	267 sq. ft. per U.S. gal. (6.54 m ² per L)
9 mils	178 sq. ft. per U.S. gal. (4.36 m ² per L)
12 mils	133 sq. ft. per U.S. gal. (3.26 m ² per L)
15 mils	107 sq. ft. per U.S. gal. (2.62 m ² per L)

*Coverage varies depending on the desired build as well as the profile and porosity of the substrate.

Application Properties

	At 46°F (8°C)	At 73°F (23°C)	At 95°F (35°C)
Pot life for 8.8 U.S. oz. (250 g) – Shyodu Model 100 gel timer	7 hours	45 minutes	15 minutes
Open time on substrate	2 hours, 30 minutes	80 minutes	50 minutes
Waiting time between coats (min./max.)	35 to 75 hours	18 to 48 hours	10 to 24 hours

Drying time recorders (Stage C, dry-hard time) – ASTM D5895	23 hours, 30 minutes	11 hours, 15 minutes	5 hours, 15 minutes
Ready for foot traffic	32 hours	12 hours	6 hours, 30 minutes
Ready for light traffic	3 days	2 days	36 hours
Ready for normal traffic and chemical exposure	23 days	7 days	3 days

Packaging

Size	
<i>Mapecoat Universal</i> [NA] unit	3.7 U.S. gals. (14 L)
Part A	2.38 U.S. gals. (9 L)
Part B	1.32 U.S. gals. (5 L)

ADDITIONAL INFORMATION

Refer to the Safety Data Sheet (SDS) for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

WARNING

The test results shown in the TECHNICAL DATA table were obtained in compliance with test methods and curing cycles, if applicable, defined in the industry standards referenced on the Technical Data Sheet. Please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement nor replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com. **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

CONTACT INFORMATION

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Flooring: 1-800-992-6273

Concrete and heavy construction: 1-888-365-0614

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1-800-361-9309

Customer Service

1-800-42-MAPEI (1-800-426-2734)

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For the most current product data and BEST-BACKEDSM warranty information,
visit www.mapei.com.
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