

Mapefloor I 900 [NA]

Two-Component, Epoxy Resin for Industrial Flooring



NORTH AMERICA [NA]

DESCRIPTION

Mapefloor™ I 900 [NA] is a two-component, low-viscosity, epoxy resin that is used as a primer for resinous flooring systems and as a binder to blend and adhere large aggregates for the *Ultratop*® Terrazzo System.

FEATURES AND BENEFITS

- Good chemical and mechanical resistance
- Low viscosity
- Excellent adhesion to concrete substrates

WHERE TO USE

- Interior use only
- For priming concrete substrate to enhance the bond of multi-layer resinous flooring systems
- For blending and adhering aggregates from 3/8" to 3/4" size (10 mm to 19 mm) for *Ultratop* Terrazzo System
- For institutional buildings, storage and logistical areas, and wet and dry processing areas
- For priming absorbent concrete surfaces

LIMITATIONS

- Do not apply *Mapefloor I 900* [NA] on substrates that have not received adequate preparation.

- Do not dilute *Mapefloor I 900* [NA] with solvents or water.
- Do not apply *Mapefloor I 900* [NA] on dusty or crumbly substrates.
- Do not apply *Mapefloor I 900* [NA] on substrates with oil, grease or dirt.
- Do not mix partial quantities of the components, in order to avoid mixing errors; otherwise, the product may not perform correctly.
- Do not expose the mixed product to sources of heat.
- Coatings made with *Mapefloor I 900* [NA] may change color if exposed to aggressive chemicals. A change of color, however, does not mean that the chemicals have damaged the coating.
- If harsh substances come into contact with *Mapefloor I 900* [NA], remove them immediately.
- Protect the product from water, dampness and condensation for at least 24 hours after application.
- Do not apply *Mapefloor I 900* [NA] on substrates with water vapor transmission values at higher than 3 lbs. per 1,000 sq. ft. (1.36 kg per 92.9 m²) per 24 hours or when the relative humidity (RH) measured per test method ASTM F2170 is above 75%.
- Do not apply *Mapefloor I 900* [NA] if not within 5 degrees Fahrenheit (2.8 degrees Celsius) higher than the dew point.
- Do not apply in areas where the ambient RH is greater than 85%.
- Do not install unless the ambient and substrate temperatures are between 46°F and 95°F (8°C and 35°C).

SUITABLE SUBSTRATES

- Properly prepared substrates such as concrete, cementitious screeds, polymer-modified self-leveling screeds. These must be sound and dry, with a minimum compressive strength of at least 3,600 psi (24.8 MPa) and a minimum pull-off strength of at least 200 psi (1.38 MPa).
- Before application of *Mapefloor I 900* [NA], 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

- Surfaces to be treated must be flat, clean, sound, solid and dry, and must not exceed stated moisture levels.
- The surface of the floor must be prepared mechanically. Any cement laitance, dirt, crumbling, weak or detached portions present on the surface to be treated must be removed using a suitable mechanical process (e.g., shotblasting or diamond grinding) to achieve an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #2 to #4, and to make the surface slightly rough and absorbent.
- Fill in static cracks with *Epojet*[™] or *Epojet LV*. Dynamic cracks should be honored through the coating system unless otherwise directed by the engineer of record.
- High spots must be removed by grinding to achieve a level surface.
- Before applying the selected basecoat such as *Mapefloor I 900* [NA], all traces of dust must be eliminated from the surface with a vacuum cleaner equipped with a brush attachment and substrates must receive adequate preparation.

MIXING

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

1. To ensure that all solids are evenly dispersed, mix Part A of *Mapefloor I 900* [NA] mechanically for 1 minute.

2. Pour Part B (hardener) into Part A. Mix thoroughly for at least 2 minutes using a low-speed drill (at 300 to 400 rpm) until material is uniform in color and consistency.
3. Avoid overmixing to minimize air entrapment.
4. Apply the mixed *Mapefloor I 900* [NA] within the pot life indicated in the "Application Properties" chart below. Higher ambient and substrate temperatures will reduce the pot life of the mixture, while lower temperatures will increase its pot life.

PRODUCT APPLICATION

For *Mapefloor* Systems: Read all *Mapefloor* System installation instructions thoroughly before installation.

1. Before application, confirm the substrate's moisture content, RH and temperature in relation to the dew point. See the "Limitations" section above for details.
2. Pour mixed *Mapefloor I 900* [NA] onto the substrate in a continuous pore-free coat. If necessary for particularly porous surfaces, two priming coats may be applied to smooth out rough surfaces. *Mapefloor I 900* [NA] may be mixed with silica quartz sand of #32 mesh with up to a 1 to 0.5 ratio in weight, depending on the roughness of the substrate.
3. Spread *Mapefloor I 900* [NA] using a brush, roller or squeegee. The preferred application method is to use a squeegee and back-roll crosswise, ensuring that the minimum required thickness is maintained.
4. Apply the entire contents of the mixed unit, working it aggressively into the concrete substrate to cover the substrate entirely with a wet film thickness (WFT) of 9 to 15 mils.
5. Apply a full sand broadcast into *Mapefloor I 900* [NA] to increase mechanical bond of future topcoat materials.

For *Ultratop* Terrazzo Systems: Read *Ultratop* Terrazzo System guide spec thoroughly before installation.

1. Before application of *Mapefloor I 900* [NA], the surface must be prepared with MAPEI's *Primer SN*TM full sand broadcast (to rejection) with #16 to #30 mesh sand. For details, refer to the Technical Data Sheet for *Ultratop*.
2. Mix the *Mapefloor I 900* [NA] mixture with dry aggregates using a proper horizontal mortar mixer. Mixing ratio by weight: 1 part of premixed *Mapefloor I 900* [NA] to 20 parts of dry aggregates 3/8" to 3/4" (10 mm to 19 mm) in size. The aggregates must be dry and contain no deleterious or foreign particles. Minimum aggregate size: 3/8" (10 mm). Max aggregate size: 3/4" (19 mm).
3. Spread and set the epoxy-wet aggregates onto the properly primed surface using a gauge rake following architectural patterns and preset metal strips to achieve the designed texture of the surface. Before pouring the epoxy-wet aggregates, apply a coat of *Mapefloor I 900* [NA] using a roller or squeegee at a thickness of 4 wet mils.
4. After epoxy-wet aggregates are spread, wait for at least 12 hours before pouring the *Ultratop*. Refer to the *Ultratop* Terrazzo System guide spec for details.

CURING AND PROTECTION

- *Mapefloor* Systems: Protect the applied *Mapefloor I 900* [NA] for 1.5 to 2 hours of curing and until covered by a subsequent polyurethane or epoxy resin coating system.
- *Ultratop* Terrazzo Systems: Wait for at least 12 hours before pouring the *Ultratop*.

CLEANUP AND MAINTENANCE

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

Product Performance Properties

at 73°F (23°F) and 50% relative humidity (RH)

| Laboratory Tests | Results |
|--|---|
| ASTM D1475 – Specific gravity | |
| Part A | 9.43 lbs. per U.S. gal. (1.13 kg per L) |
| Part B | 8.60 lbs. per U.S. gal. (1.03 kg per L) |
| Mix (A+B) | 9.10 lbs. per U.S. gal. (1.09 kg per L) |
| ASTM D1475 – Viscosity (A+B) | 830 cps |
| ASTM D695 – Compressive strength | |
| 7 days | 11,211 psi (77.3 MPa) |
| 28 days | 11,429 psi (78.8 MPa) |
| ASTM D638 – Tensile strength | 5,180 psi (35.7 MPa) |
| MIL-PRF-24613A – Indentation | |
| Initial indentation | 1.4% |
| Residual indentation | 0.0% |
| ASTM D638 – Elongation | 2.7% |
| ASTM D7234 – Bond strength | > 531 psi (3.66 MPa) (substrate failure) |
| ASTM C884 – Thermal compatibility | Pass – No cracking or delamination |
| ASTM D2240 – Surface hardness | |
| 24 hours | 79 |
| 3 days | 84 |
| 7 days | 85 |
| 28 days | 85 |
| ASTM D2794 – Impact resistance | |
| Initial indentation | 10 in-lbs or 0.83 ft-lbs (1.13 J) |
| Initial cracking | 24 in-lbs or 2.00 ft-lbs (2.71 J) |
| Initial delamination | 12 in-lbs or 1.00 ft-lbs (1.36 J) |
| ASTM D4060 – Abrasion resistance CS17/1000 cycles, 2.2 lbs. (1 000 g) | 0.0020 U.S. oz. (0.056 g) |
| ASTM D1894 – Coefficient of friction | <u>Steel:</u> Static: 0.18 Kinetic: 0.11 <u>Neolite rubber:</u> Static: 0.48 Kinetic: 0.29 |
| ASTM D696 – Coefficient of linear thermal expansion | 3.95 *10e-5 in/in/°F (7.11 *10e-5 mm/mm/°C) |
| ASTM D635 – Flammability | 1.52 in/min (38.6 mm/min) |
| ASTM D570 – Water absorption | 0.29% |

Shelf Life and Product Characteristics

before mixing

| | |
|-------------------------------|---|
| Shelf life and storage | 2 years when stored in original, unopened packaging. Store at 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 |

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 Divisions Classifications

| | |
|----------------------------------|----------|
| High-Performance Coatings | 09 96 00 |
| Flooring Treatment | 09 61 00 |
| Traffic Coatings | 07 18 00 |

Application Properties

| Mixing Ratio for Self-Leveling and Seal Coats (2:1 by Weight) | Service Temperatures | | |
|---|-----------------------------|-----------------------|-----------------------|
| | 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); Gel timer: Shyodu Model 100 | 4.5 hours | 40 minutes | 15 minutes |
| Open time on substrate | 90 minutes | 40 minutes | 30 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 | 7 hours, 15 minutes | 2 hours, 30 minutes |
| Foot traffic | 28 hours | 10 hours | 5 hours |
| Light traffic | 3 days | 1 day | 12 hours |

Approximate Coverage*

| Size | |
|--|--|
| Concrete surface at CSP #3 | 9 to 15 mils of wet film thickness (WFT) or at rate of 107 to 178 sq. ft. per U.S. gal. (2.62 to 4.36 m ² per L) |
| To blend and adhere aggregates 3/8" (10 mm) in size for <i>Ultratop Terrazzo Systems</i> | 43.25 to 50 sq. ft. per U.S. gal. (1.06 to 1.22 m ² per L) |
| Mix ratio by weight to blend and adhere aggregates 3/8" (10 mm) in size. | 2.2 U.S. lbs. of premixed <i>Mapefloor I 900</i> [NA] with 44.10 U.S. lbs. of aggregates (1 kg of premixed <i>Mapefloor I 900</i> [NA] with 20 kg of aggregates) |

* For Mapefloor Systems: Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions and setting practices. For Ultratop Systems: Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to aggregates sizes and mixing practices.

Packaging

| Size |
|-------------------------------|
| Part A: 2.38 U.S. gals. (9 L) |
| Part B: 1.32 U.S. gals. (5 L) |

ADDITIONAL INFORMATION

Refer to the 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).

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.**

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For the most current product data and BEST-BACKEDSM warranty information,
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