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FOR PROFESSIONAL USE ONLY

Mapefloor™ CPU/TC

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Multi-Component, Polyurethane/Cement-Based Coating for Horizontal and Vertical Finishes

DESCRIPTION

Mapefloor CPU/TC is a multi-component, polyurethane/cement-based coating used for horizontal and vertical finishes on polyurethane/cementitious systems for industrial flooring. It is also used as a protective coating for concrete as well as cementitious walls and joints.

FEATURES AND BENEFITS

- Creates a seamless film characterized by high resistance to such chemicals as acids, base solutions, oil, grease, saline solutions and hydrocarbons
- When *Mapefloor CPU/TC* is used as a finishing coat for *Mapefloor CPU/HD*, *Mapefloor CPU/RT*, *Mapefloor CPU/SB* or *Mapefloor CPU/MF* mortar screeds, it is resistant to thermal shock and the same service temperatures as the screed system. *Mapefloor CPU/TC* must always be applied within 48 hours (ideally, within 24 hours) before the base layer's hardening.
- *Mapefloor CPU/TC* seals the broadcast aggregate in anti-slip surface finishes.
- *Mapefloor CPU/TC* is a neutral-beige color and must be pigmented on site before application by using *Mapecolor™ Paste*, which is available in these standard colors: Oxide Red RAL 3009, Beige RAL 1001, Stone Grey RAL 7030, Agate Grey RAL 7038 and Telegrey 2 RAL 7046. All specialty colors will be ordered upon request. Using a color in complete contrast with the base color is not recommended.
- *Mapefloor CPU/TC* provides a matte finish coating once fully cured.

WHERE TO USE

- As an optional finishing coat for *Mapefloor CPU/RT*, *Mapefloor CPU/SB* or *Mapefloor CPU/HD* screed in areas with high hygienic requirements.
- As a finishing coat for *Mapefloor CPU/MF* with a smooth finish or for broadcast systems in wet environments
- As a finishing coat for areas joined with *Mapefloor CPU/COVE*, such as between walls and floors
- As a washable, protective coating resistant to chemicals in the food and beverage, chemical and pharmaceutical industries, etc.
- For interior use only. Contact MAPEI's Technical Services Department if this product is required for exterior use.

LIMITATIONS

- Do not apply *Mapefloor CPU/TC* on substrates with a film of surface water or on concrete within 10 days of pouring.
- Do not dilute *Mapefloor CPU/TC* with solvent or water.
- Do not apply *Mapefloor CPU/TC* on dusty or crumbling substrates.
- Do not apply *Mapefloor CPU/TC* on substrates with oil or grease stains or with stains in general.
- Do not apply *Mapefloor CPU/TC* on substrates that have not been prepared according to specifications outlined in MAPEI's installation guide "*Mapefloor CPU* Flooring Systems: Installation Instructions."
- To prevent mixing errors, avoid mixing units partially. Otherwise, the product may not harden correctly.

- Do not expose the mixed product to sources of heat.
- Do not apply *Mapefloor CPU/TC* on ceramic or stone substrates.
- A coating of *Mapefloor CPU/TC* changes color if exposed to UV light, but this has no relevant effect on the performance characteristics.
- A coating of *Mapefloor CPU/TC* may also change color if it comes into contact with aggressive chemicals. A change in color, however, does not necessarily mean that it has been damaged or softened by the chemical. For details, consult the chemical resistance tables in MAPEI's installation guide "*Mapefloor CPU* Flooring Systems: Installation Instructions" or contact MAPEI's Technical Services Department.
- Remove aggressive chemicals as soon as possible if they come into contact with *Mapefloor CPU/TC*. Maintain an adequate cleaning regimen. Cleaning instructions are outlined in MAPEI's reference guide "*Mapefloor CPU* Flooring Systems: Maintenance Instructions."
- Protect the coating from water for at least 24 hours after application.
- The temperature of the substrate must be at least 5 degrees F (2.8 degrees C) above the dew point.
- Refer to MAPEI's installation guide "*Mapefloor CPU* Flooring Systems: Installation Instructions" for further details.

SUITABLE SUBSTRATES

- Properly prepared substrates such as concrete, cementitious screeds and polymer-modified self-leveling screeds that are clean, sound and dry or slightly damp (even saturated surface-dry) and that have no crumbling or detached portions
- Concrete must have been poured at least 10 days before application of *Mapefloor CPU/TC* and have compressive strength of at least 3,625 psi (25 MPa) and pull-off strength of at least 217 psi (1.5 MPa).
- The substrate must be strong enough for its final use and the types of loads to which it will be subjected when in service.
- *Mapefloor CPU/TC* may be used as a standalone coating on top of concrete and cementitious surfaces such as walls, pillars and run-off channels.

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

SURFACE PREPARATION

- While the application of *Mapefloor CPU/TC* over other *Mapefloor CPU* screeds is optional, it must always be applied within 48 hours (ideally, within 24 hours) of the hardening of the base layer. Otherwise, the surface to be treated will have to be roughened mechanically to achieve an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #2 to #3. To maintain the same resistance to thermal shock and the same service temperatures as the *Mapefloor CPU* screed without peeling, apply the coat of *Mapefloor CPU/TC* within 24 hours of the base layer's hardening.
- *Mapefloor CPU* screeds must be hard, dry and clean, have no traces of dust and not be sticky. For details on use and application, refer to Technical Data Sheets (TDSs) of each *Mapefloor CPU* screed.
- If *Mapefloor CPU/TC* is used as a standalone product for coating concrete and cementitious surfaces such as walls, pillars and run-off channels, apply it in two or three successive layers.
- The floor surface to be treated must be prepared mechanically. Any cement laitance, dirt, or crumbling, weak or detached portions must be removed using a suitable mechanical process (such as shotblasting or scabbling) to achieve an ICRI CSP of #2 to #3.
- Any cracks must be repaired by being filled with *Planibond® EBA*, *Epojet™* or *Epojet LV*. Any deteriorated areas of the concrete, such as spalls, potholes or other voids, must be repaired with a high-build cementitious repair mortar from MAPEI's *Planitop®* product line.
- High spots must be removed through grinding to achieve a level surface.
- Before applying *Mapefloor CPU/TC*, remove all traces of dust and aggregate from the surface with a vacuum cleaner equipped with a brush attachment, using the brush to agitate the surface.

MIXING

Before product use, choose all appropriate safety equipment. Refer to the Safety Data Sheet for details. Also reference the SDS for the broadcast aggregate.

1. See the Application Properties chart below for the mixing ratio.
2. Shake or stir Part A energetically, either by hand in its original container or by means of an electric drill mixer.
3. Pour Part A into a clean mixing vessel. After pouring Part A, add Part B and mix them together with an electric mixer at low speed for about 30 seconds until the mixture is completely blended.
4. After adding the contents of a *Mapecolor Paste* jar (≈ 14.9 U.S. oz. or 441 mL) to the mixture of Part A and Part B, combine the mixture with Part C into a mixing vessel. Mix well with an electric, low-speed power mixer for at least 2 minutes, obtaining a homogeneous compound.
5. Apply the mixture within the pot life indicated in the Application Properties chart below. Higher ambient temperatures will reduce the mixture's pot life, while lower temperatures will increase its pot life.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

- Apply *Mapefloor CPU/TC* so that each batch is applied immediately after the previous one while it is still wet and workable, thereby reducing the marks made by the application tools.

<u>As a finishing coat on most *Mapefloor CPU* products, 8 to 10 mils thick</u>

1. For better distribution of *Mapefloor CPU/TC*, pour it onto the substrate and spread it in an even coat with a short- or medium-haired roller over *Mapefloor CPU/RT*, *Mapefloor CPU/SB*, *Mapefloor CPU/HD* or smooth *Mapefloor CPU/MF*.
2. When treating areas that are joined with *Mapefloor CPU/COVE* in between walls and floors or other features, apply *Mapefloor CPU/TC* directly with a roller after cleaning the surface and removing all traces of dust.
3. *Mapefloor CPU/TC* may be applied on the surface of *Mapefloor CPU* screeds within 48 hours (ideally, within 24 hours) of them hardening at 68°F (20°C) or warmer. Lower temperatures lead to longer waiting times, while higher temperatures reduce these times. If this time is exceeded, the surface will have to be roughened mechanically in order for *Mapefloor CPU/TC* to bond to the existing floor.

<u>As a finishing coat on *Mapefloor CPU/MF* with a broadcast of quartz sand</u>

1. When installing *Mapefloor CPU/MF*, fully broadcast quartz sand with a mesh size of #24 to #32 onto the wet surface.
2. Ensure that *Mapefloor CPU/MF* is fully cured before applying *Mapefloor CPU/TC*.
3. Pour *Mapefloor CPU/TC* onto the substrate and spread it with a notched squeegee or a steel or rubber trowel to control mil thickness throughout the application. Thickness can range from 8 to 10 mils.
4. Back-roll the surface with a short-pile roller.
5. *Mapefloor CPU/TC* may be treated with a second coat, within 48 hours (ideally, within 24 hours) of it hardening at 68°F (20°C). Lower temperatures lead to longer waiting times while higher temperatures reduce these times. If this time is exceeded, the surface will have to be roughened mechanically.
6. There is no time limit for coating *Mapefloor CPU/MF* once it is fully broadcast with quartz sand, as long as the surface is cured, clean and without traces of dust.

<u>As a standalone coat on concrete or cementitious screeds, 17 to 20 mils thick</u>

1. *Mapefloor CPU/TC* can be applied directly onto the concrete or screed. Allow at least 24 hours before the application of each successive coat.
2. For better distribution of *Mapefloor CPU/TC*, pour it onto the substrate and spread it in an even coat with a short- or medium-haired roller over the properly prepared concrete.
3. A rubber or steel trowel can also be used to spread the material on the surface before the use of a short-pile roller.
4. Change rollers as frequently as required when the material begins to gel.

EXPANSION AND CONTROL JOINTS

- All expansion and control joints on the floor must be respected and properly sealed using one of MAPEI's *Mapeflex*™ products.

CURING

- For the most successful application, maintain surrounding conditions at 46°F (8°C) for at least 24 hours after application or at 95°F (35°C) for at least 12 hours after application.
- Floors coated with *Mapefloor CPU/TC* can be opened to light foot traffic after about 12 hours at 73°F (23°C) and may be opened to light vehicle traffic after about 24 to 36 hours at 73°F (23°C). The product develops its full strength after at least 4 to 5 days at 73°F (23°C), although it depends on the actual site conditions.
- See the Application Properties chart below for details regarding drying times.

CLEANUP AND MAINTENANCE

- Immediately after *Mapefloor CPU/TC* is prepared and applied, clean tools with polyurethane thinners. Once hardened, *Mapefloor CPU/TC* can only be removed using mechanical means.
- For further details, refer to MAPEI's reference guide "*Mapefloor CPU* Flooring Systems: Maintenance Instructions."
- Regular cleaning of the application surface is recommended in order to maintain slip resistance and aesthetics.

PROTECTION

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

Mapefloor™ CPU/TC

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

Laboratory Tests	Results
Bond strength – ASTM D4541	473 psi (3.26 MPa) (substrate failure)
Surface hardness – ASTM D2240	
24 hours	58
3 days	65
7 days	68
28 days	70
Abrasion resistance – ASTM D4060	
Taber CS-17 / 1 000 cycles/ 1 000 g	-0.003 U.S. oz. (-0.077 g)
Taber H-22 / 1 000 cycles / 1 000 g	-0.006 U.S. oz. (-0.171 g)
Coefficient of friction – D1894-61T	
Steel static	0.271
Steel kinetic	0.221
Rubber static	0.715
Rubber kinetic	0.638
Resistance to fungi growth – ASTM G21	Rated 0 (no growth)

Shelf Life and Product Characteristics before mixing

Shelf life and storage	60 weeks when stored in original, unopened packaging, in a dry area. Store at between 41°F to 86°F (5°C to 30°C). 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.
Physical state	Part A: Milky white liquid Part B: Amber liquid Part C: White powder
Viscosity at 73°F (23°C)	Part A: 800 (Pa·s) (#2 – rpm 30) Part B: 110 (Pa·s) (#1 – rpm 5)
VOCs (Rule #1168 of California's SCAQMD)	8 g per L

Application Properties

Mixing ratio	Part A, 5.62 lbs. (2.55 kg) Part B, 4.92 lbs. (2.23 kg) Part C, 5.97 lbs. (2.71 kg) *Mapecolor Paste*, ≈ 1.65 lbs. or 14.9 U.S. oz. (0.75 kg or 441 mL)		
Density at 73°F (23°C) – ASTM C905	11.35 lbs. per U.S. gal. (1.36 kg per L)		
Viscosity at 73°F (23°C)	2,500 ± 300 (Pa·s) (#4 – 20 rpm)		
Application temperature range	46°F to 86°F (8°C to 30°C)		
Service temperature range (when applied within the open time indicated below)	Minimum: -40°F (-40°C) Maximum continuous exposure: At 1/4" (6 mm) thickness, 158°F (70°C) At 3/8" (10 mm) dry thickness, 248°F (120°C) At 3/8" (10 mm) wet thickness, 212°F (100°C)		
	At 50°F (10°C)	At 68°F (20°C)	At 86°F (30°C)
Pot life	30 minutes	15 minutes	8 minutes
Open time (minimum and maximum) between coats	24 to 96 hours	12 to 48 hours	6 to 24 hours
Drying times at 50% relative humidity	At 50°F (10°C)	At 73°F (23°C)	At 95°F (35°C)
Ready for foot traffic	24 hours	12 hours	6 hours
Ready for light vehicle traffic	48 to 72 hours	24 to 36 hours	12 to 18 hours
Ready for normal traffic and chemical exposure	8 to 10 days	4 to 5 days	2 to 3 days

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CSI Division Classifications

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

Packaging*

Size	Results
Mapefloor CPU/TC unit	
Part A, Part B, Part C and *Mapecolor Paste*	18.16 lbs. (8.24 kg)
Mapefloor CPU/TC components (kit)	
Part A, plastic bottle	5.62 lbs. (2.55 kg)
Part B, plastic bottle	4.92 lbs. (2.23 kg)
Part C, plastic bag	5.97 lbs. (2.71 kg)
Mapecolor Paste, plastic jar	20 oz. (591 mL), containing ≈ 1.65 lbs. or 14.9 U.S. oz. (0.75 kg or 441 mL) of paste per jar, packaged 6 jars per box

* *The amount in each jar will vary slightly depending on the pigment density.*

Approximate Coverage** per mixed unit

Thickness	Coverage
Finishing coat (at 8 to 10 mils)	
Over a *Mapefloor CPU* screed	187 sq. ft. (17.4 m^2) at 8 mils in thickness
Over *Mapefloor CPU/COVE* with *Mapecolor Paste*	165 sq. ft. (15.3 m^2) at 10 mils in thickness
Finishing coat on *Mapefloor CPU/MF* with a broadcast of quartz sand of #24 to #32 mesh	187 sq. ft. (17.4 m^2) at 8 mils in thickness

Coverage rates are highly influenced by the particle size of the sand used for the broadcast finish on the surface of *Mapefloor CPU/MF* and the tools used to apply the product.

** *Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions and setting practices.*

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 or 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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