

Mapecem 100

High-Build, One-Component, Fast-Setting Mortar



DESCRIPTION

Mapecem® 100 is a one-component, shrinkage-compensated, cementitious mortar intended for the renovation and topping of interior horizontal concrete and engineer-approved surfaces.

FEATURES AND BENEFITS

- Features excellent compressive and flexural strength for use as a concrete repair or a topping from 3/8" to 4" (10 mm to 10 cm) in thickness
- Can be applied using trowel or screed
- High compressive strength in 3 hours

INDUSTRY STANDARDS AND APPROVALS

Green Certifications

- Living Building Challenge (LBC) Red List Free: This product has been verified per the most current Red List on the LBC's Website.

WHERE TO USE

- Use for horizontal exterior and interior concrete repairs and concrete topping at a thickness from 3/8" to 4" (10 mm to 10 cm). *Mapecem 100* can be placed in large quantities on horizontal applications and is suitable for precast, cast-in-place, post-tensioned or prestressed concrete repair.
- Use for renovating and resurfacing interior horizontal concrete substrates found in residential, commercial and institutional structures. A waterproofing membrane can be applied on top of *Mapecem 100* in as little as 3 hours after placement.

- Use as a monolithic topping where fast drying is required to allow ceramic tile or where self-leveling underlayments and toppings are to be installed after 4 hours. Use as a monolithic topping where floor coverings (wood, carpet, etc.) are to be installed after 24 hours of application, depending on temperature and humidity. When properly mixed and installed, *Mapecem 100* has a residual moisture content of less than 2.5% at 24 hours.
- *Mapecem 100* provides excellent compressive and flexural strength for applications from 3/8" to 4" (10 mm to 10 cm) in thickness. *Mapecem 100* also has higher resistance to abrasion than ordinary cement and sand repair screeds.
- *Mapecem 100* also can be used as an interior floating topping and must be installed over an engineer-approved substrate with proper reinforcement.

SURFACE PREPARATION

- All substrates must be structurally sound, stable and solid, with all loose materials removed.

Fully bonded installations

- Thoroughly clean the surface of any substance that could interfere with bonding.
- Mechanically profile and prepare concrete surfaces by abrasive shotblasting, waterjetting or other engineer-approved methods to obtain an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #5 to #9.
- Reference Technical Guideline #310.2R-2013 of both the ICRI and ACI RAP Bulletins 3 and 6 for details on repair geometry, surface preparation and material application.
- When encountering exposed reinforcing steel bars, clean bars and coat with *Mapefer*™ 1K [NA] or *Planibond*® 3C (see the appropriate Technical Data Sheet [TDS] for details) to protect against corrosion and to improve adhesion.
- Concrete substrate and ambient room temperatures must be between 45°F and 95°F (7°C and 35°C) before application. Temperatures must be maintained within this range for at least 3 days after the installation of *Mapecem 100*.

Floating installations

- Pre-place 2" x 2" (5 x 5 cm), 16-by-16-gauge galvanized, welded wire mesh so it will be in the center of the floating topping, and provide the required structural integrity of the floating topping.
- When applying *Mapecem 100*, maintain a thickness of at least 2" (5 cm).

MIXING

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

1. Use a drill and paddle, a mortar mixer or (when the mortar is extended with pea gravel) a concrete mixer for mixing *Mapecem 100*. Pour 4/5 of the required amount of cool, clean potable water in a mixing vessel. Add a total of 2.875 U.S. qts. (2.72 L) of clean potable water per 50 lbs. (22.7 kg) of *Mapecem 100*.
2. Slowly add *Mapecem 100* to the water while mixing. Next, add the remaining 1/5 of water to achieve the desired consistency. Mix for 2 to 3 minutes to achieve a smooth, homogeneous consistency.
3. For an extended mix, add 20% by weight of washed, clean, saturated surface-dry (SSD), 3/8" (10 mm) pea gravel.
4. Do not overmix. Overmixing can trap air, which could shorten pot life.
5. Do not overwater the material, or *Mapecem 100* will not perform as specified.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. *Mapecem 100* can be applied with a trowel or a screed, with or without formwork (screed rail), on a horizontal surface. The maximum thickness neat is 4" (10 cm) per lift. Use an extended mix for deeper repair patching up to 8" (20 cm) thick.
2. When encountering exposed reinforcing steel bars, clean bars and coat with *Mapefer 1K* [NA] or *Planibond 3C* (see TDS for details) to protect against corrosion and to improve adhesion.

CURING

Cure with wet burlap or polyethylene sheet during the first 4 hours of curing. Alternately, apply a water-based curing compound conforming to ASTM C309, such as *Mapecure™ UV WB*.

CLEANUP

Wash hands and tools promptly with water before material hardens. Cured material must be mechanically removed.

LIMITATIONS

For exterior applications, *Mapecem 100* must be encapsulated with a waterproofing membrane, such as *Mapelastic®* (see the TDS for details).

Mapecem 100 can only be used at temperatures between 45°F and 95°F (7°C and 35°C). Note that cool, damp and humid conditions will slow the rate of hydration and cause the topping to retain a higher moisture content for a longer period of time.

Product Performance Properties

Laboratory Tests	Results
Compressive strength – ASTM C109 (CAN/CSA-A5)	
3 hours	> 1,500 psi (10.3 MPa)
1 day	> 2,900 psi (20 MPa)
7 days	> 4,400 psi (30.3 MPa)
28 days	> 5,800 psi (40 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)	
1 day	> 580 psi (4 MPa)
7 days	> 870 psi (6 MPa)
28 days	> 1,500 psi (10.3 MPa)
Pull-out strength (rupture of concrete substrate) (CAN/CSA-A23.2-6B)	
28 days	> 290 psi (2 MPa)

Shelf Life and Product Characteristics (before mixing)

Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C)
Physical state	Powder
Color	Gray
VOCs (Rule #1168 of California's SCAQMD)	0 g per L

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.

Application Properties at 73°F (23°C)

Mixing ratio	12% water by weight, or 2.875 U.S. qts. per 50-lb. bag (2.72 L per 22.7-kg bag)
Application temperature range	45°F to 95°F (7°C to 35°C)
Working time	30 minutes
Initial set	40 minutes
Final set	50 minutes
Open to foot traffic	After 4 hours

Packaging

Size
Bag: 50 lbs. (22.7 kg)

Approximate Coverage* per 50 lbs. (22.7 kg)

Thickness	Coverage
3/8" (10 mm)	12.8 sq. ft. (1.19 m ²)
1" (2.5 cm)	4.8 sq. ft. (0.45 m ²)
2" (5 cm)	2.4 sq. ft. (0.22 m ²)

Approximate Yield* per 50 lbs. (22,7 kg)

0.4 cu. ft. (0.0113 m ³)

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

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-durabilite@mapei.com.

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,
visit www.mapei.com.

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