

DESCRIPTION

Mapecem 102 is a one-component, shrinkage-compensated, polymer-modified, fast-setting cementitious mortar with a corrosion inhibitor. *Mapecem 102* is intended for the renovation and topping of interior/exterior horizontal concrete surfaces, such as galleries, tunnels, bridges, overpasses, factory floors, warehouse floors and loading docks; new and existing concrete slabs; and the construction of floating or monolithic toppings where fast drying is required to allow traffic within 3 to 4 hours.

USES

- Use for horizontal exterior and interior structural concrete repairs and concrete toppings from 1/4" to 2" (6 mm to 5 cm) in thickness. *Mapecem 102* can be placed in large quantities on horizontal applications and is suitable for precast, cast-in-place, post-tensioned and prestressed concrete repair.
- Use for renovating and resurfacing interior horizontal concrete substrates found in residential, commercial and institutional structures.
- Use for renovating horizontal concrete surfaces of residential, commercial and institutional structures that are subject to foot traffic and rubber-wheel traffic. *Mapecem 102* achieves an impressive compressive strength of 2,900 psi (20 MPa) in 4 hours and 5,000 psi (34,5 MPa) in 24 hours.
- Use as a topping where fast drying is required. *Mapecem 102* can be opened up to traffic within 3 to 4 hours. When properly mixed and installed, *Mapecem 102* has a residual moisture content of less than 2.5% at 24 hours.

RECOMMENDED SUBSTRATES

 Properly prepared masonry and concrete at least 28 days old, stable and free of hydrostatic pressure

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

TECHNICAL NOTES

- Mapecem 102 provides excellent compressive and flexural strength for applications 1/4" to 2" (6 mm to 5 cm) for concrete repairs and topping. Mapecem 102 also has higher resistance to abrasion than ordinary cement and sand repair screeds.
- *Mapecem 102* requires only the addition of water, and is prepackaged for easy field use and control. Do not add additives or cements to *Mapecem 102*.
- *Mapecem 102* can be applied using a trowel or screed. Approved substrates must meet L/360 deflection requirements.
- Mapecem 102 adheres well to existing properly prepared concrete surfaces. Before application of Mapecem 102, mechanically roughen concrete surface, saturate surface-dry (SSD) and scrub-coat to ensure a secure bond; apply a bonding agent (*Planibond™ 3C* [see Technical Data Sheet for details]) or Mapecem 102 as a slurry bond coat to the properly prepared surface. Otherwise, the use of *Planibond EBA* is permissible (see Technical Data Sheet for details). Quickly apply the Mapecem 102 mix while the slurry bond coat is still wet. If the slurry bond coat dries before placement of mortar, it will become a bond breaker and the application will fail.



- Because *Mapecem 102* is not a construction grout, it cannot be used for anchoring purposes or for pouring into formwork. Instead, use MAPEI's *Planigrout* ® 740, *Planigrout 750*, *Planigrout 755* or *Planigrout 780* for grouting, and *Planitop*® 15 for pouring into formwork (see Technical Data Sheets for details).
- A waterproofing membrane, such as *Mapelastic*[™] or *Mapelastic Smart* (see Technical Data Sheets for details), can be applied on top of *Mapecem 102* in as little as 3 hours after placement.
- Mapecem 102 can only be used between 45°F and 95°F (7°C and 35°C).

Note: 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.

INSTRUCTIONS

1. Surface Preparation

- 1.1 All substrates must be structurally sound, stable and solid, with all loose materials removed.
- 1.2 Thoroughly clean the surface of any substance that could interfere with the bond of the installation material, including dirt, paint, tar, asphalt, wax, oil, grease, latex compounds, form release agents, laitance, loose toppings, foreign substances and any other residues.
- 1.3 Concrete surfaces must be mechanically profiled and prepared by shotblasting, sandblasting, water-jetting, scarifying or other engineer-approved methods to obtain a +/- 1/8" (3 mm) profile. Reference ICRI CSP Standards 7 to 9 for acceptable profile height.
- 1.4 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 24 hours after the installation of *Mapecem 102*.
- 1.5 Do not apply over standing water or wet surfaces.

2. Mixing

- 2.1 Into a clean mixing pail, pour 4/5 of the required amount of cool, clean potable water.
- 2.2 Slowly add 55 lbs. (24,9 kg) of *Mapecem 102* to water while mixing, using a low-speed mixer. Next, add the remaining 1/5 of water to achieve the desired consistency. Mix for up to 4 minutes, removing any unmixed powder, and remix to a smooth, homogenous consistency.
- 2.3 For an extended mix, add 20% by weight (11 lbs. [4,99 kg]) of 5/16" to 3/8" (8 to 10 mm) pea gravel that is washed, clean and SSD.
- 2.4 Do not overmix. Overmixing can cause air entrapment, which could shorten pot life.

- 2.5 Do not overwater material, or *Mapecem 102* will not perform as specified.
- 2.6 Do not mix more material than can be applied within a 30-minute period.

3. Application

- 3.1 Mapecem 102 can be applied with a trowel or a screed, with or without formwork (screed rail), on a horizontal surface. The maximum thickness neat is 2" (5 cm). Use an extended mix for deeper repair patching up to 8" (20 cm) thick.
- 3.2 After waiting until Mapecem 102 firms up (typically 10 to 15 minutes depending on temperature and humidity), finish surface with a Mag-Float[®].
- 3.3 When encountering exposed reinforcing steel bars, clean bars and coat with *Planibond*[™] *3C* (see Technical Data Sheet for details) to protect against corrosion and to improve adhesion.
- 3.4 Consider using *Mapecem 101, Mapecem Quickpatch* or *Planitop X* (see Technical Data Sheets for details) to repair adjoining areas, or *Mapecem 101* or *Concrete Renew*[™] to provide a durable and uniform surface.

4. Curing

Do not wet-cure; however, protect the placed material from excessive heat or draft conditions with wet burlap during the first 4 hours of curing. Excessive heat and/or wind could cause premature surface drying and result in cracking.

5. Cleaning

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



TECHNICAL DATA (ba	ased on 73°F [23°C] and 50% relative humidity)
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Mapecem 102 (before mixing)	
Physical state	Powder
Color	Gray
Shelf life	1 year in original bag stored in a dry, heated, covered
	and well-ventilated area
Flammability	Flame spread: 0
	Fuel contribution: 0
	Smoke development: 0
Health and safety	Consult the Material Safety Data Sheet (MSDS) for
	safe-handling instructions.
Mapecem 102 (mixed)	
Mixing ratio	Batio of water to Managam 102 2 2/4 U.S. ats
	nor 55 lb bag (2.60 L par 24.0 kg bag)
Flow (ASTM C230)	100%
Consistency of mix	Trowol grado mortar
Application temporature range	45° E to 05° E (7°C to 25° C)
Thickness per lift	1/4" to 2" (6 mm to 5 cm)
Dot lifo	20 minutos
I ULTIG	60 minutes
Final set ASTM 0200	00 minutes
Open to traffic	After A hours
Desistance to moisture ACTM C642	Evolution 1.7% water abcorntion
	EXCENENT - 1.7 % WATER ADSOLUTION
Compressive strength – ASTM C109 (CAN/CSA-A5)	
4 hours	> 2,900 psi (20 MPa)
8 hours	> 3,900 psi (26,9 MPa)
1 day	> 5,000 psi (34,5 MPa)
7 days	> 5,400 psi (37,2 MPa)
28 days	> 5,800 psi (40 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)	
4 hours	> 475 psi (3,28 MPa)
8 hours	> 650 psi (4,48 MPa)
1 day	> 750 psi (5,17 MPa)
7 days	> 1,150 psi (7,93 MPa)
28 days	> 1,350 psi (9,31 MPa)
Pull-out strength (runture of concrete substrate) (CAN/CSA-A23 2-6B)	
3 days	> 250 nsi (1 72 MPa)
7 davs	> 275 nsi (1.90 MPa)
28 days	> 290 nsi (2 MPa)
Volume change – ASTNI C 157 (modified)	0.05%
7 days, dry cured	0.05%
28 days, dry cured	0.06%
Abrasion resistance – ASTM D4060	
After 7 days	
Taber H22-500 g, 200 cycles	1.54 g
Freeze/thaw resistance – ASTM C666-A (CAN/CSA A23 2-9B)	
300 cvcles	Good – 98% durability factor
500 cycles	Good – 95% durability factor
Resistance to de-icing saits – ASTM U672 (UAIV/USA A23.2-16U)	very good – U rating, no scaling
Permeability to chlorides – ASTM C1202 (AASHTO T277)	Good – 850 coulombs (very low)
DACKACINC	
Page 55 lbg (24.0 kg)	
Day. 55 lbs. (24,9 kg)	
VIELD per 55-lb (24 9-kg) bag	0.48 cm ft (0.0136 m ³)
ייבבש אטו טט ווט. (בד,ט ועץ) טמע	
APPROXIMATE COVERAGE* per thickness per 55-lb (24.9-kg) hag	$\dots 1/4$ " (6 mm) = 24.7 sq. ft. (2 29 m ²)
	$1" (2.5 \text{ cm}) = 5.8 \text{ so ft} (0.54 \text{ m}^2)$
	$2" (5 \text{ cm}) = 2.9 \text{ sq. ft.} (0.27 \text{ m}^2)$
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* Coverages shown are used for estimating purpases only Actual ich site a	averages may very assorting to substrate conditions, tw

^t Coverages shown are used for estimating purposes only. Actual job-site coverages may vary according to substrate conditions, type of equipment, thickness applied and applications methods used.







STATEMENT OF RESPONSIBILITY

Before using, user shall determine the suitability of the product for its intended use and user alone assumes all risks and liability whatsoever in connection therewith. <u>ANY</u> <u>CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN</u> <u>WRITING TO US WITHIN FIFTEEN (15) DAYS FROM</u> <u>DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN,</u> <u>DISCOVERED</u>.



MAPEI Headquarters of the Americas

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Customer Service 1-800-42-MAPEI (1-800-426-2734) For the most current product and warranty data, visit www.mapei.com.

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