



Planicrete[®] AC

Acrylic Latex Admixture for Mortar and Concrete



DESCRIPTION

Planicrete AC is a one-component, concentrated liquid latex admixture used to enhance the performance of cementitious repair mortars, plasters, stuccos, concrete mixes and toppings for the restoration of horizontal, vertical and overhead concrete; concrete masonry units (CMU); and masonry surfaces.

FEATURES AND BENEFITS

- Prepackaged for easy field use and control
- Optimizes bond to existing concrete substrates
- Improves resistance to abrasion and freeze/thaw cycles
- Non-reemulsifiable

INDUSTRY STANDARDS AND APPROVALS

ASTM: Exceeds requirements of C-1059 Type I and II (used undiluted)

WHERE TO USE

- Use as an admixture for horizontal, vertical and overhead exterior and interior structural concrete repairs and concrete toppings. When mixed with cementitious materials, *Planicrete AC* is suitable for precast, cast-in-place, post-tensioned and prestressed concrete repair.
- Use as a slurry bondcoat when mixed with Portland cement and dry sand to enhance adhesion of mortars and toppings to concrete substrates.
- Use with cement plaster and stucco to increase adhesion and to reduce cracking.

- Use *Planicrete AC* with specified MAPEI products to improve adhesion, product performance and curing (see applicable Technical Data Sheets for details).
- Use as an admixture for interior or exterior floating toppings where a minimum thickness of 1-3/8" (3,5 cm) or greater can be placed on top of bond-breaking membrane and proper reinforcement.
- Use in repair mortars, concrete mixes and toppings to improve resistance to freeze/thaw cycles and to reduce permeability to de-icing salts.
- *Planicrete AC* is ready-to-use, concentrated and non-reemulsifiable, according to American Concrete Institute (ACI).

LIMITATIONS

- Do not install over substrates containing asbestos.
- *Planicrete AC* enhances the performance of cementitious materials for bonded plaster, stucco, concrete repairs and topping. *Planicrete AC* also adds higher resistance to abrasion than ordinary cement and sand repair screeds.
- *Planicrete AC* is prepackaged for easy field use and control. Add water to *Planicrete AC* for specific application (see Section 2, "Mixing").
- *Planicrete AC* should not be used by itself as a bonding agent. Always mix with Portland cement and sand (or designated MAPEI products) to provide a slurry bondcoat for repair materials. Do not let the slurry bondcoat dry, or it can become a bond breaker.
- Mortars enhanced by *Planicrete AC* adhere better to existing properly prepared concrete surfaces. Before application of repair materials, mechanically roughen the concrete surface, saturate surface-dry (SSD) and



scrubcoat to ensure a secure bond. Apply a bonding agent (*Planibond[®] 3C* or *Planibond EBA* [see Technical Data Sheets for details]) or a slurry bondcoat to the properly prepared surface. Quickly apply the repair mix while the slurry bondcoat is still wet.

- *Planicrete AC* can only be used between 45°F to 95°F (7°C to 35°C).

Note: Cool, damp and humid conditions will slow the rate of hydration and will cause higher moisture retention in repair mortars, concrete mixes and toppings for a longer period of time.

- Protect from freezing. If product is frozen, discard it properly per local requirements.
- *Planicrete AC* may only be used in conjunction with *Planitop[®]* and *Mapecem[®]* products when required in their Technical Data Sheets.

SUITABLE SUBSTRATES

- Properly prepared masonry and concrete at least 28 days old, stable and dry.

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

SURFACE PREPARATION

- All substrates must be structurally sound, stable and solid, with all loose materials removed.
- 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.
- Concrete surfaces must be mechanically profiled and prepared by shotblasting, sandblasting, diamond-grinding, water-jetting, scarifying or other engineer-approved methods to obtain an acceptable profile. Reference ICRI CSP Standards 2 to 5 for plaster and stuccos, and CSP Standards 7 to 9 for slurry bond coats for bonded repairs and toppings.
- 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 of 72 hours after the installation of repair mortars and toppings.
- Do not apply over standing water or wet surfaces.

MIXING

Note: Choose all appropriate safety equipment before use. Refer to Material Safety Data Sheet (MSDS) for more information.

Suggested dilution ratios

- Standard ratio: 1 part *Planicrete AC* to 3 parts water (1:3) – used for standard mortars, pointing mortars, plaster, and stucco.

- Improved performance ratio: 1 part *Planicrete AC* to 2 parts water (1:2) – used for repair mortars.
- Better performance ratio: 1 part *Planicrete AC* to 1 part water (1:1) – used for repair mortars.
- Best performance ratio for reduced shrinkage to wear surfaces: 2 parts *Planicrete AC* to 1 part water (2:1) – used for large overlays and toppings.
- Slurry bondcoat: Use undiluted *Planicrete AC* mixed with Portland cement and sand.

Mixing in a pail

1. Into a clean mixing pail, pour 4/5 of the required amount of cool, clean, mixed *Planicrete AC*.
2. Slowly add cement/sand mixes to liquid while mixing, using a low-speed mixer. Next add the remaining 1/5 of mixed *Planicrete AC* to achieve the desired consistency. Mix for up to 4 minutes, removing any unmixed powder, and remix to a smooth, homogenous consistency.
3. Do not overmix. Overmixing can cause air entrapment, which could shorten pot life.
4. Do not add more liquid than recommended, or the system will not perform as desired.
5. Do not mix more material than can be applied within a workable period.

Mortar or concrete mixer

1. Stop mixing paddles when adding mixed *Planicrete AC* to the mixer.
2. Start the mixer at slow speed and add cement, sand and aggregates per the mix design. During the mixing process, adjust the quantity of liquid to ensure a plastic consistency.
3. Do not overmix. Overmixing can cause air entrapment, which could shorten pot life.
4. Do not add more liquid than recommended, or the system will not perform as desired.
5. Do not mix more material than can be applied within a workable period.

PRODUCT APPLICATION

On floors

1. Read all installation instructions thoroughly before installation.
2. Place slurry bondcoat onto a saturated surface-dry (SSD) and properly prepared concrete surface.
3. Place repair mortar or topping onto the slurry bondcoat while it is still wet. For exterior applications, provide uniform slopes to drains for water management.
4. When encountering exposed reinforcing steel bars, clean bars and coat with *Mapefer[™] 1K* or *Planibond 3C* (see Technical Data Sheet for details) to protect against corrosion and to improve adhesion.

Product Performance Properties

Laboratory Tests	Results
Physical state	Liquid
Color	Off-white
Density	8.51 lbs. per U.S. gal. (1,02 g per mL)
Flammability	Flame spread: 0 Fuel contribution: 0 Smoke development: 0
pH	7
Application temperature range	45°F to 95°F (7°C to 35°C)

Suggested Mixes	
Mix 1	Mortar for Toppings 3/8" to 1" (10 mm to 2,5 cm)
Portland cement, Type 1 (Type 10)	55 lbs. (24,9 kg)
Dry sand	163 lbs. (73,9 kg)
Planicrete AC (concentrate)	3.7 U.S. gals. (14,0 L)
Approximate yield	1.52 cu. ft. (0,043 m ³)
Flow (ASTM C230)	126%
Mix 2	Mortar for Toppings 3/8" to 1" (10 mm to 2,5 cm)
Portland cement, Type 3 (Type 30)	55 lbs. (24,9 kg)
Dry sand	163 lbs. (73,9 kg)
Planicrete AC (concentrate)	2.76 U.S. gals. (10,4 L)
Approximate yield	1.61 cu. ft. (0,046 m ³)
Flow (ASTM C230)	Dry pack
Mix 3	Mortar for Toppings 1" to 4" (2,5 to 10 cm)
Portland cement, Type 1 (Type 10)	42 lbs. (19,0 kg)
Dry sand	104 lbs. (47,2 kg)
Aggregate 3/8" (10 mm) nonreactive, washed and dry	62 lbs. (28,1 kg)
Planicrete AC (concentrate)	2.64 U.S. gals. (9,99 L)
Approximate yield	1.58 cu. ft. (0,045 m ³)
Slump (ASTM C143, CAN/CSA-A23.2-5C)	5" (12,5 cm)

Mix Performance Properties

	Mix 1	Mix 2	Mix 3
Compressive Strength	(ASTM C109, CAN/CSA-A5)	(ASTM C109, CAN/CSA-A5)	(ASTM C39, CAN/CSA-23.2-9C)
1 day	> 1200 psi (8,28 MPa)	> 5250 psi (36,2 MPa)	
7 days	> 5000 psi (34,5 MPa)	> 9000 psi (62,1 MPa)	> 3750 psi (25,9 MPa)
28 days	> 6500 psi (44,8 MPa)	> 9500 psi (65,5 MPa)	> 5250 psi (36,2 MPa)
Flexural Strength	(ASTM C348, CAN/CSA-23.2-8C)	(ASTM C348, CAN/CSA-23.2-8C)	(ASTM C348, CAN/CSA-23.2-8C)
1 day	> 375 psi (2,59 MPa)	> 1125 psi (7,76 MPa)	
7 days	> 1250 psi (8,62 MPa)	> 1700 psi (11,7 MPa)	> 800 psi (5,52 MPa)
28 days	> 1650 psi (11,4 MPa)	> 1850 psi (12,8 MPa)	> 900 psi (6,21 MPa)
Pull-Out Strength (Rupture of Concrete)	(CAN/CSA-23.2-6B)	(CAN/CSA-23.2-6B)	(CAN/CSA-23.2-6B)
3 days	> 165 psi (1,14 MPa)	> 275 psi (1,90 MPa)	> 225 psi (1,55 MPa)
7 days	> 350 psi (2,41 MPa)	> 300 psi (2,07 MPa)	> 450 psi (3,10 MPa)
28 days	> 435 psi (3 MPa)	> 325 psi (2,24 MPa)	> 500 psi (3,45 MPa)

Physical characteristics of mixes will vary based on local raw materials and mixing ratios. The above guidelines represent what can typically be anticipated with the designated mix design.

Shelf Life and Application Properties

Shelf life	2 years in original container, sealed airtight and stored in a dry, heated and covered place
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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 Division Classifications

Common Work Results for Concrete	03 05 00
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Packaging

Product Code	Size
7013004	Jug: 1 U.S. gal. (3,79 L)
7013020	Pail: 5 U.S. gals. (18,9 L)

Planicrete[®] AC



On walls

1. Read all installation instructions thoroughly before installation.
2. Before the application of the mortar mix, apply a slurry bondcoat of *Planicrete AC* onto the properly prepared surface.
3. While the slurry bond coat is still wet, apply the repair mortar to the required thickness using a margin trowel. Work the mortar into the slurry bondcoat to promote a mechanical bond to the substrate. Do not spread mortar on a dry or partially dry slurry bondcoat because a dry slurry bond coat will act as a bond breaker.

CURING

1. Protect from excessive heat or draft conditions during the first 24 to 72 hours of curing. Alternatively use damp burlap, polyethylene sheeting or water-based curing compound. Excessive heat and/or wind could cause premature surface drying and result in cracking. Do not use solvent-based curing compounds.
2. Cure cement-based mixes modified with *Planicrete AC* for at least 5 to 7 days at 73°F (23°C) before total immersion (ponds, pools, planter walls, cisterns, water tanks, etc.).

CLEANUP

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

Refer to MAPEI's MSDS for specific data related to VOCs, health and safety, and handling of product.

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. **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.**

We proudly support the following industry organizations:



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

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