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MAPEI®

Planicrete® AC

Acrylic Latex Admixture for Mortar and Stucco

GREEN INNOVATION

DESCRIPTION

Planicrete AC is a one-component, concentrated, liquid latex admixture used to enhance the performance of cementitious repair mortars, plasters, stuccos and toppings.

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-redispersible

INDUSTRY STANDARDS AND APPROVALS

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

WHERE TO USE

- Use as an admixture for horizontal, vertical and overhead concrete repairs and concrete toppings in exterior and interior applications.
- Use as a slurry bondcoat when mixed with Portland cement 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 (TDSs) 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 a cleavage membrane and proper reinforcement.
- Use in repair mortars 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-redispersable, according to the American Concrete Institute (ACI).

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 in accordance to the repair mortar or stucco that will be used in conjunction with *Planicrete AC*.
- Reference International Concrete Repair Institute (ICRI) concrete surface profiles #2 to #5 for plaster and stuccos, and greater than #5 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.

MIXING

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

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. Periodically agitate the slurry bond coat as settling may occur in the mixing container over time.

Mixing in a pail

1. Into a clean mixing pail, pour 4/5 of the required amount of *Planicrete AC*.
2. Slowly add a cement/sand mix to the 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, to a smooth, homogenous consistency.
3. Do not overmix.

Mortar or concrete mixer

1. Stop mixing paddles when adding mixed *Planicrete AC* to the mixer.
2. Start the mixer at a 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.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

On floors

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

On walls

1. Before the application of the mortar mix, apply a slurry bondcoat of *Planicrete AC* onto the properly prepared surface.
2. *Planicrete AC* should not be used by itself as a bonding agent. Always mix with Portland cement (or designated MAPEI products) to provide a slurry bond coat for repair materials. Do not let the slurry bond coat dry, or it can become 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.

LIMITATIONS

- Do not install over substrates containing asbestos.
- *Planicrete AC* is prepackaged for easy field use and control. Water may be added to *Planicrete AC* for specific *Planitop®* or *Mapecem®* products from MAPEI.
- *Planicrete AC* should not be used by itself as a bonding agent. Always mix with Portland cement (or designated MAPEI products) to provide a slurry bond coat for repair materials. Do not let the slurry bond coat dry, or it can become a bond breaker.
- *Planicrete AC* can only be used at between 45°F to 95°F (7°C to 35°C).
- Note that 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, state/provincial and federal requirements.
- Do not apply over standing water or wet surfaces.

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	> 1,200 psi (8.28 MPa)	> 5,250 psi (36.2 MPa)	
7 days	> 5,000 psi (34.5 MPa)	> 9,000 psi (62.1 MPa)	> 3,750 psi (25.9 MPa)
28 days	> 6,500 psi (44.8 MPa)	> 9,500 psi (65.5 MPa)	> 5,250 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)	> 1,125 psi (7.76 MPa)	
7 days	> 1,250 psi (8.62 MPa)	> 1,700 psi (11.7 MPa)	> 800 psi (5.52 MPa)
28 days	> 1,650 psi (11.4 MPa)	> 1,850 psi (12.8 MPa)	> 900 psi (6.21 MPa)
Pull-out strength (rupture of concrete)	**(ASTM C1583, CAN/CSA-23.2-6B)**	**(ASTM C1583, CAN/CSA-23.2-6B)**	**(ASTM C1583, 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.

Planicrete AC

Shelf Life and Application Properties

Shelf life	2 years when stored in original, unopened packaging stored at 73°F (23°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.

CSI Division Classification

Common Work Results for Concrete	03 05 00

Packaging

Size
Jug: 1 U.S. gal. (3.79 L)
Pail: 5 U.S. gals. (18.9 L)

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 meets the health and well-being requirements of product certification programs, contact the MAPEI Sustainability Team at 1-800-992-6273.

We proudly support the following industry organizations:

MAPEI®

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Technical Services
1-888-365-0614 (U.S. and Puerto Rico)
1-800-361-9309 (Canada)

Customer Service
1-800-42-MAPEI (1-800-426-2734)

Services in Mexico
0-1-800-MX-MAPEI (0-1-800-696-2734)

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