

Planitop 18 ES

Very Rapid-Hardening Repair Mortar with Extended Working Time



DESCRIPTION

Planitop® 18 ES is a one-component, high-early-strength, cementitious repair mortar, with a corrosion inhibitor, that has the very rapid-hardening characteristics of *Planitop 18* but with an extended set and working time.

FEATURES AND BENEFITS

- Very rapid-hardening repair mortar that meets requirements for ASTM C928 R3 mortar
- Open to vehicular traffic in 6 hours at 73°F (23°C)
- Extended working time for hot-weather applications
- Good resistance to freeze/thaw cycles and de-icing salts
- Can be extended up to 50% by weight with 3/8" (10 mm) pea gravel for thicknesses up to 6" (15 cm). For depths exceeding the maximum depth limit, contact MAPEI'S Technical Services Department for recommendations.
- Application of 2" (50 mm) or less may be coated as early as 6 hours at 73°F (23°C) with non-breathable coatings, such as epoxies. Applications of more than 2" (5 cm) may be coated as early as 12 hours.

INDUSTRY STANDARDS AND APPROVALS

- Meets requirements for ASTM C928 R3 mortar

WHERE TO USE

- Interior and exterior, horizontal concrete surfaces
- Structural concrete repairs, above- and below-grade, from 1/4" to 1" (6 mm to 2.5 cm) thickness neat and up to 6" (15 cm) extended

Consult MAPEI's Technical Services Department for installation recommendations regarding uses not listed.

SURFACE PREPARATION

- Concrete surface must be clean, sound and free of loose particles, efflorescence, paints, tar, grease, asphaltic materials, bond breakers, curing compounds, wax, and any foreign substance or any conditions that may affect proper bonding of the product and result in cracking, discoloration or changes in overall product performance.
- Mechanically profile and prepare concrete surfaces by engineer-approved methods, allowing a minimum of 3/4" (19 mm) clearance behind reinforcing steel. Reference International Concrete Repair Institute (ICRI) Technical Guideline #310.2R concrete surface profile (CSP) #5 and greater.
- Clean all exposed reinforcement steel and coat with *Mapefer*™ 1K or *Planibond*® 3C to protect against corrosion (see the respective Technical Data Sheet for details).
- Ensure that the concrete substrate is saturated surface-dry (SSD) before installation of *Planitop 18 ES*. The concrete surface should be free of any standing water.

MIXING

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

1. Into a clean mixing container, pour 2.75 U.S. qts. (2.60 L) of cool, clean, potable water, not to exceed 2.88 U.S. qts. (2.73 L) per 50-lb. (22.7-kg) bag to achieve desired consistency.
2. For the best results, mix *Planitop 18 ES* by using a mortar mixer, although it may also be drill-mixed. Slowly add *Planitop 18 ES* to water while mixing. If drill mixing, use a low-speed drill. Mix for 2 to 3 minutes to a smooth, homogenous consistency.
3. For an extended mix, add up to 50% by weight (25 lbs. [11.3 kg]) of clean, washed, SSD, 3/8" (10 mm) pea gravel per 50-lb. (22.7-kg) bag.
4. Avoid overmixing, or moving the mixer up and down during the mixing process, as it could shorten the pot life.
5. Mix only the amount of material that can be applied within 30 minutes.

PRODUCT APPLICATION

Read all application instructions thoroughly before installation.

1. Apply a scrubcoat of *Planitop 18 ES* directly over the SSD-prepared surface.
2. Place *Planitop 18 ES* immediately over the scrubcoat and finish it to the surrounding concrete texture by float or screed. Application times will vary depending on climatic conditions.

CURING

- During curing, protect *Planitop 18 ES* from conditions of excessive heat and high winds.
- *Planitop 18 ES* must be wet-cured for at least 4 hours. Alternatively, a water-based curing compound conforming to ASTM C308 may be utilized.

CLEANUP

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

LIMITATIONS

- Use at ambient temperatures between 45°F and 95°F (7°C and 35°C). For temperatures below or above this range, use cold- or hot-weather guidelines from the American Concrete Institute (ACI) and from MAPEI's reference guide "Installing repair materials in cold weather."
- Protect from freeze/thaw for 24 hours after application.
- For vehicular traffic, maintain a repair depth of at least 1/2" (12 mm).
- Do not use *Planibond 3C* as a bonding agent for *Planitop 18 ES*.

Product Performance Properties

Laboratory Tests	Results
	At 73°F (23°C)
Compressive strength – ASTM C109 (CAN/CSA-A5)	
3 hours	> 3,000 psi (20.7 MPa)
1 day	> 5,000 psi (34.5 MPa)
7 days	> 5,500 psi (37.9 MPa)
28 days	> 7,000 psi (48.3 MPa)
Compressive strength – ASTM C39	
28 days	> 6,000 psi (41.4 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)	
28 days	> 1,000 psi (6.90 MPa)
Slant/shear bond strength – ASTM C882*	
1 day	> 1,800 psi (12.4 MPa)
7 days	> 2,500 psi (17.2 MPa)
Length change – ASTM C157*	
28 days' expansion, water-cured	≤ +0.15%
28 days' shrinkage, air-cured	≤ -0.15%
Splitting tensile strength – ASTM C496	
28 days	500 psi (3.45 MPa)
Freeze/thaw resistance at 300 cycles – ASTM C666	98%
Scaling resistance at 25 cycles – ASTM C672	0 rating; no scaling
VOC content	0 g per L

* Modified per ASTM C928 testing requirements

Shelf Life and Product Characteristics

before mixing

Shelf life	1 year in original unopened packaging in a dry, covered and well-ventilated place at 73°F (23°C)
Physical state	Powder
Color	Gray

Application Properties

Laboratory Tests	Results
Mixing ratio	2.88 U.S. qts. (2.73 L) of water per 50-lb. (22.7-kg) bag
Consistency of mix	Trowelable mortar
Application temperature range	45°F to 95°F (7°C to 35°C)
Set time (ASTM C191)**	
Initial	> 45 minutes
Final	< 110 minutes
Working time at 73°F (23°C)	30 minutes

** Set times are dependent on substrate temperatures and placement conditions.

CSI Division Classifications

Cast-in-Place Concrete	033000
Cementitious Decks and Underlayment	035000

Packaging

Size
Bag: 50 lbs. (22.7 kg)
Bag in pail: 50 lbs. (22.7 kg)

Approximate Coverage***
per 50 lbs. (22.7 kg)

Mix	Yield
Neat	0.41 cu. ft. (0.0116 m ³)
Extended 50% with 25 lbs. (11.3 kg) of 3/8" (10 mm) pea gravel	0.51 cu. ft. (0.0144 m ³)

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

RELATED DOCUMENTS

- ACI 305R-10 Guide to Hot Weather Concreting
- ACI 306R-10 Guide to Cold Weather Concreting
- ICRI 310 1R-2008 Guide for Surface Preparation of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion
- ICRI 310 2R-2013 Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair

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_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

WARNING

The test results shown in the TECHNICAL DATA table were obtained in compliance with test methods and curing cycles, if applicable, defined in the industry standards referenced on the Technical Data Sheet. Please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

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.**

CONTACT INFORMATION

MAPEI Headquarters of North America

1144 East Newport Center Drive
Deerfield Beach, Florida 33442
1-888-US-MAPEI (1-888-876-2734) / (954) 246-8888

Technical Services

U.S. and Puerto Rico:

Flooring: 1-800-992-6273

Concrete and heavy construction: 1-888-365-0614

Canada:

1-800-361-9309

Customer Service

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

Edition Date: January 27, 2026 MK 3001217 (25-3274)

For the most current product data and BEST-BACKEDSM warranty information,
visit www.mapei.com.
All Rights Reserved. © 2026 MAPEI Corporation.

