

Planitop 18 TG

Very Rapid-Hardening, Trowel-Grade, High-Early-Strength Repair Mortar



DESCRIPTION

Planitop® 18 TG is a one-component, shrinkage-compensated, very rapid-hardening, trowel-grade, cementitious repair mortar with a corrosion inhibitor. *Planitop* 18 TG gains strength rapidly and is particularly suited for all horizontal concrete repairs from 1/2" to 2" (12 mm to 5 cm) thickness when applied neat and up to 8" (20 cm) when extended with aggregate.

FEATURES AND BENEFITS

- Very rapid-hardening with more than 15 minutes of working time
- Easy to use, requiring only the addition of potable mixing water
- Easily placed and finished by screed or float
- If applied at 73°F (23°C), *Planitop* 18 TG can be opened to vehicular traffic within 2 hours of application.
- Can be extended up to 80% by weight with 3/8" (10 mm) pea gravel for thicknesses up to 8" (20 cm)

INDUSTRY STANDARDS AND APPROVALS

- Meets or exceeds requirements for ASTM C928 R3 mortar

WHERE TO USE

- For interior and exterior, horizontal concrete repairs
- For traffic-bearing surfaces

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

SUITABLE SUBSTRATES

- Properly prepared, structurally sound, fully cured concrete substrates (at least 28 days old)

SURFACE PREPARATION

- Concrete surface must be clean, sound and free of loose particles, efflorescence, paints, tars, 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 clearance of 3/4" (19 mm) behind reinforcing steel. For acceptable profile height, reference International Concrete Repair Institute (ICRI) Technical Guideline #310.2R concrete surface profile (CSP) #5 and greater.
- Ensure that the concrete substrate is saturated surface-dry (SSD) before installation of *Planitop 18 TG*. The concrete surface should be free of any standing water.
- Reference ICRI Technical Guideline #310.1R-2013 and ACI RAP Bulletin 7 for repair geometry, surface preparation and material application details.

MIXING

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

1. Into a clean mixing container, pour 3/4 of the quantity of 2.8 U.S. qts. (2.65 L) of cool, clean potable water per 50-lb. (22.7-kg) bag. Add the remaining water as needed to achieve the desired consistency.
2. For best results, mix *Planitop 18 TG* by drill mixing or in a mortar mixer. Slowly add *Planitop 18 TG* to water while mixing. For drill mixing, use a low-speed drill and a Jiffy mixer. Mix for 2 to 3 minutes to a smooth, homogenous consistency.
3. For an extended mix, add up to 80% by weight (40 lbs. [18.1 kg]) of clean, washed, SSD 3/8" (10 mm) pea gravel per 50-lb. (22.7-kg) bag.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

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

CLEANUP

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

CURING AND PROTECTION

- During curing, protect *Planitop 18 TG* from high wind conditions and keep ambient temperatures at between 45°F and 85°F (7°C and 29°C).
- An ASTM C309 curing compound or an ASTM C1315 cure and seal can be utilized.
- Protect from freezing for 12 hours after application.
- To limit drying, shrinkage and cracking, protect *Planitop 18 TG* with wet burlap for at least 1 hour after initial set.

LIMITATIONS

- Use at ambient temperatures between 32°F and 95°F (0°C and 35°C). For temperatures above 85°F (29°C), use hot-weather guidelines from the American Concrete Institute (ACI). For temperatures below 40°F (4°C), use the ACI's guidelines for cold-weather applications.
- For applications over 8" (20 cm) thickness, contact MAPEI's Technical Services Department.
- Do not use *Planibond*® 3C as a bonding agent for *Planitop 18 TG*.

Product Performance Properties

Laboratory Tests	Results
Compressive strength – ASTM C109 (CAN/CSA-A5)	
1 hour	> 2,030 psi (14 MPa)
2 hours	> 5,080 psi (35.0 MPa)
1 day	> 7,800 psi (53.8 MPa)
28 days	9,400 psi (64.8 MPa)
Compressive strength – ASTM C39 (CAN/CSA- A23.2-9C) with 80% extension (pea gravel)	
1 hour	> 2,030 psi (14 MPa)
1 day	> 6,450 psi (44.5 MPa)
28 days	8,560 psi (59.0 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)	
1 day	> 730 psi (5.03 MPa)
28 days	870 psi (6 MPa)
Modulus of elasticity – ASTM C469	
28 days	> 5.08 x 10 ⁶ psi (35.02 GPa)
Slant/shear bond strength – ASTM C882	

1 day	> 2,400 psi (16.6 MPa)
28 days	> 3,000 psi (20.7 MPa)
Length change – ASTM C157 (modified per ASTM C928), typical value	
28 days' shrinkage, dry-cured	-0.06%
28 days' expansion, wet-cured	+0.05%
Freeze/thaw resistance – ASTM C666-A (CAN/CSA A23.2-9B)	
300 cycles	100% durability factor
Resistance to de-icing salts – ASTM C672 (CAN/CSA A23.2-22C)	0 rating, no scaling (50 cycles)
Permeability to chlorides – ASTM C1202 (AASHTO T277)	<1,000 coulombs
VOC content	0 g per L

Shelf Life and Product Characteristics before mixing

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

Application Properties at 73°F (23°C)

Mixing ratio	Up to 2.8 U.S. qts. (2.65 L) per 50-lb. (22.7-kg) bag
Pot life	About 15 minutes
Initial set – AASHTO T131/ASTM C191	> 15 minutes
Final set – AASHTO T131/ASTM C191	< 40 minutes
Open to vehicular traffic	< 2 hours
Thickness per lift	1/2" to 2" (12 mm to 5 cm) neat; 8" (20 cm) extended
ASTM C928	Meets or exceeds R3 requirements

CSI Division Classifications

Cast-in-Place Concrete	033000
Cementitious Decks and Underlayment	035000
Concrete Restoration and Cleaning	039000

Packaging

Size
Bag: 50 lbs. (22.7 kg)

Approximate Coverage*

per 50 lbs. (22.7 kg)

Mixture	Yield
Neat	0.41 cu. ft. (0.0116 m ³)
Extended with 40 lbs. (18.1 kg) of 3/8" (10 mm) pea gravel	0.58 cu. ft. (0.0164 m ³)

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

RELATED DOCUMENTS

- ICRI Technical Guideline #310.1R-2013
- ACI RAP Bulletin 7

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.**

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