



PLANITOP XS
One-Component, Fast-Setting, Extended-Working-Time, Vertical and Overhead Repair Mortar

SECTION 03 01 30
MAINTENANCE OF CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products for maintenance of concrete, including the following:
 - A. Polymer-modified vertical and overhead concrete repair.
 - B. Corrosion-inhibiting.

1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete.

1.3 REFERENCES

- A. ASTM International:
 - A. ASTM C109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens).

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - A. Preparation instructions and recommendations.
 - B. Storage and handling requirements and recommendations.
 - C. Installation methods.
- C. Verification Samples: For each finish product specified, two samples, minimum size 6" (150 mm) square representing actual product, color and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 years' experience manufacturing similar products.
- B. Installer Qualifications: Minimum 2 years' experience installing similar products.
- C. Source Limitations: For repair products, obtain each color, grade, finish, type, and variety of product from single source and from single manufacturer with resources to provide products of consistent quality in appearance and physical properties.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - A. Finish areas designated by Architect.
 - B. Do not proceed with remaining work until workmanship is approved by Architect.
 - C. Refinish mock-up area as required to produce acceptable work.



1.6 PRE-INSTALLATION MEETINGS

- A. Convene at least two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Product Performance:

Compressive strength – ASTM C109

1 day > 3,000 psi (20.7 MPa)

7 days > 4,000 psi (27.6 MPa)

28 days > 5,000 psi (34.5 MPa)

Flexural strength – ASTM C348

1 day > 500 psi (3.45 MPa)

28 days > 800 psi (5.52 MPa)

Tensile bond strength – ASTM C1583 (failure in concrete substrate)

28 days > 290 psi (2 MPa)

Permeability to chlorides – ASTM C1202

28 days Very low: 100 to 1,000 coulombs

Scaling resistance – ASTM C672

28 days 0 loss, no scaling (50 cycles)

Freeze/thaw resistance – ASTM C666

28 days > 98.5% (300 cycles)

Slant/shear bond strength – ASTM C882 (modified)

1 day > 1,000 psi (6.90 MPa)

28 days > 1,500 psi (10.3 MPa)



B. Acceptable Manufacturer:

MAPEI North America
1144 E. Newport Center Dr.; Deerfield Beach, FL 33442
Toll-Free for CRS Technical Services: Tel. 1-888-365-0614
Email: CRS@mapei.com
Web: www.mapei.com

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

D. Substitutions: Not permitted.

2.2 RAPID-SETTING VERTICAL AND OVERHEAD CONCRETE REPAIR PRODUCTS

A. Fiber-Reinforced, Shrinkage-Compensated, Rapid-Strengthening, Cementitious Vertical and Overhead Repair Mortar: Packaged, dry mix for repair of concrete.

1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Planitop XS.
2. Compressive strength: Not less than 5,000 psi (34.5 MPa) within 28 days when tested according to ASTM C109.

2.3 MISCELLANEOUS MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I, II or III unless otherwise indicated.

B. Water: Potable.

2.4 MIXES

A. General: Mix products in clean containers according to manufacturer's written instructions.

- A. Do not add water, thinners or additives unless recommended by manufacturer.
- B. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovels or trowels as units of measure.
- C. Do not mix more materials than can be used within time limits recommended by manufacturer. Discard materials that have begun to set.

B. Mortar Scrub Coat: Mix dry ingredients with enough water to provide consistency of thick cream.

C. Dry-Pack Mortar: Mix required type(s) of patching-mortar dry ingredients with just enough liquid to form damp cohesive mixture that can be squeezed by hand into a ball but is not plastic.

D. Concrete: Comply with Section 03 30 00 - Cast-in-Place Concrete.

PART 3 EXECUTION

3.1 EXAMINATION



- A. Properly prepared concrete at least 28 days old, stable, sound and dry.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Concrete surface must be 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 product performance or proper bonding.
- B. Mechanically profile clean, sound and stable concrete surfaces to obtain a concrete surface profile (CSP) equal or greater than #5 per ICRI #310.2R-2013.
- C. Ensure that the concrete substrate is saturated surface-dry (SSD) before installation of Planitop XS. Alternatively, the prepared concrete can be coated with Planibond 3C.
- D. Ensure that all exposed reinforcing steel is prepared in accordance with the most current ICRI 310.1 guideline and coated with either Planibond 3C or Mapefer 1K.

3.3 MIXING

- A. Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details. The mixing ratio is 1 U.S. gal. (3.79 L) of clean, potable water per 50 lbs. (22.7 kg) of Planitop XS.
- B. Place 3/4 of the required amount of clean, potable water into a mixing container.
- C. Add 50 lbs. (22.7 kg) of Planitop XS to the water slowly and continuously, while mixing with a low-speed drill and appropriate mixing paddle. Add as much of the remaining 1 U.S. qt. (0.95 L) of water as needed.
- D. Mix for 3 to 4 minutes to obtain a smooth, homogenous consistency.

3.4 INSTALLATION

Read all installation instructions thoroughly before installation.

- A. Before application, ensure that prepared concrete is saturated surface-dry (SSD).
- B. Apply a scrubcoat of Planitop XS.
- C. Apply Planitop XS directly to the scrubcoat before it dries out.
- D. Apply Planitop XS by float, working from the center of the repair to the outer edge. Finish the application similar to the surrounded concrete.
- E. If applying successive lifts of Planitop XS, wait for the final set of the previous lift (after 4 hours at 73°F [23°C]). Leave the first lift rough and immediately score the surface (about 1/4" [6 mm]) with the edge of the trowel in a continual "X" or "H" pattern (crosshatching). Dampen the surface lightly and again install a scrub coat followed by a build coat. Apply the Planitop XS to set again. Do not exceed 6" (15 cm) when applying multiple lifts.

3.5 CURING

- A. Protect Planitop XS from high wind or direct sunlight during curing.



- B. Mist-spray the surface with water for the first 4 to 6 hours. Alternatively, use damp burlap, a white polyethylene sheet, or a suitable ASTM C309 curing compound. Do not use a solvent-based curing compound.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch up, repair or replace damaged products before substantial completion.

END OF SECTION