



PLANITOP 23
Vertical and Overhead, Two-Component 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:
 - 1. For vertical and overhead structural concrete repairs.
 - 2. For repairing and resurfacing concrete structures such as tunnels, bridges, retaining walls, balconies, ramps and walkways.

1.2 RELATED SECTIONS

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

1.3 REFERENCES

- A. ASTM International:
 - 1. 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:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. 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.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship is approved by Architect.
 - 3. 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 > 4,060 psi (28 MPa) 3 days > 4,800 psi (33.1 MPa) 28 days > 7,975 psi (55 MPa)
Flexural strength – ASTM C348	1 day > 780 psi (5.40 MPa) 7 days > 1,300 psi (8.97 MPa) 28 days > 1,680 psi (11.6 MPa)
Slant/shear bond strength – ASTM C882	1 day > 1,160 psi (8 MPa) 28 days > 2,175 psi (15 MPa)
Freeze/thaw resistance – ASTM C666-A at 300 cycles	Good – 100% durability factor
Resistance to de-icing salts – ASTM C672	Rating 0 (50 cycles)
Permeability to chlorides – ASTM C1202 at 28 days	Very low – in the range of 100 to 1,000 coulombs

- B. Acceptable Manufacturer:

MAPEI North America
1144 E. Newport Center Dr.; Deerfield Beach, FL 33442
Toll-Free for CRS Technical Services: Tel. 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 VERTICAL AND OVERHEAD CONCRETE REPAIR PRODUCTS

- A. Two-Component, Fiber-Reinforced, Fast-Setting Cementitious Vertical and Overhead Repair Mortar: Packaged, dry mix for repair of concrete, and containing additive liquid added during mix.
 - 1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Planitop 23.
 - 2. Compressive Strength: Not less than 7,975 psi (55 MPa) within 28 days when tested according to ASTM C109.

2.3 MISCELLANEOUS MATERIALS

- A. Portland Cement: ASTM C150/C 150M, 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.
 - 1. Do not add water, thinners or additives unless recommended by manufacturer.
 - 2. 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.
 - 3. 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 PREPARATION

- A. Concrete surface must be free of loose particles, efflorescence, paints, tars, grease, asphaltic materials, bond breakers, curing compounds, wax, and dry foreign substances or any conditions that may affect product performance or proper bonding.
- B. Saw-cut the perimeter of the repair area into a square to a minimum depth of 1/2" (12 mm).
- C. Mechanically profile and prepare concrete surfaces by engineer-approved methods in accordance with the most current ICRI 310.2R Guidelines.



- D. Ensure that the concrete surface is saturated surface-dry (SSD) before the installation of Planitop 23.
- E. 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.

3.2 MIXING

- A. Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details. Into a clean mixing container, pour 3/4 of the required amount of Planitop latex additive (Part B).
- B. Slowly add Planitop 23 (Part A) to Planitop 23 Part B while mixing with a low-speed mixer. Add the remaining 1/4 of the Planitop 23 Part B to achieve the desired consistency. Mix for up to 3 minutes to a smooth, lump-free, homogeneous consistency.

3.3 INSTALLATION

Read all installation instructions thoroughly before installation.

- A. Ensure that the prepared concrete is SSD before application.
- B. Apply a scrub coat of mixed Planitop 23.
- C. Immediately apply Planitop 23 while the scrub coat is still wet.
- D. When applying additional coats of Planitop 23, wait for the previous lift to reach an initial set. Score or crosshatch the surface to promote mechanical adhesion of additional coats.

3.4 CURING

- A. Cure Planitop 23 with wet burlap or plastic sheating for the first 4 hours of curing. Alternatively, apply a water-based curing compound conforming to ASTM C309.

END OF SECTION