



**TOPCEM PREMIX
Accelerated-Cure Screed**

**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. Horizontal concrete repair.

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).
 - 2. ASTM C1059/C 1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete.

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	> 2,000 psi (13.8 MPa)
7 days	> 2,700 psi (18.6 MPa)
28 days	> 3,000 psi (20.7 MPa)

Compressive strength (mixed with Planicrete AC) – ASTM C109

28 days	5,300 psi (36.6 MPa)
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Flexural strength – ASTM C348

28 days	> 725 psi (5.0 MPa)
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VOCs (Rule #1168, "Subfloor Adhesives" 0 g per L of California's SCAQMD)

- 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 HORIZONTAL CONCRETE REPAIR PRODUCTS



- A. One-Component, Polymer-Modified, Fast-Setting, Cementitious Repair Material: Packaged, dry mix for repair of concrete, and containing a latex additive as either a dry powder or a separate liquid added during mixing.
 - 1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Topcem Premix.
 - 2. Compressive Strength: Not less than 5,500 psi (38.5 MPa) within twenty-eight days when tested according to ASTM C109/C109M.

2.3 MISCELLANEOUS MATERIALS

- A. Portland Cement: ASTM C150, 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 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 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. Mechanically profile and prepare concrete surfaces by engineer-approved methods in accordance with the most current ICRI 310.2R Guidelines.
- C. Ensure that the concrete surface is saturated surface-dry (SSD) before the installation of Topcem Premix.
- 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 2.16 to 2.4 U.S. qts. (2.04 to 2.27 L) of clean, potable water per 50 lbs. (22,7 kg) of Topcem Premix.
- B. Place 3/4 of the required water into a clean mixing container.
- C. Slowly add Topcem Premix to the mixing container and mix for 2 to 3 minutes with a drill and an appropriate mixing paddle. To extend the mix, add aggregate before mixing and utilize a rotary drum mixer.
- D. Add the remaining 1/4 required mixing liquid while mixing and continue to mix to a homogeneous consistency.

3.4 INSTALLATION

Read all installation instructions thoroughly before installation.

- A. Ensure that the prepared concrete is SSD before application of Topcem Premix.
- B. Apply a scrub coat of mixed Topcem Premix.
- C. Apply Topcem Premix by working it onto the scrub coat before it dries.
- D. Use of screed rails is recommended for large areas. Screed or trowel the material to the desired thickness and finish.
- E. Use Mapecrete Film when conditions of excessive heat and/or wind could cause premature surface drying and result in cracking.

For floating installations

- A. Use Planicrete AC rather than water for mixing.
- B. Pre-place 2" x 2" (5 x 5 cm), 16-by-16 gauge, galvanized, welded wire mesh so it will be in the center of the floating topping, and provide the required structural integrity of the floating topping.
- C. When applying Topcem Premix, maintain a thickness of at least 1-3/8" (3.5 cm).

3.5 CURING

- A. Cover with wet burlap or polyethylene sheet during the first 4 hours of curing.
- B. Alternately, apply a water-based curing compound conforming to ASTM C309.

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