



PLANITOP 11 SCC
Self-Consolidated Concrete Mix with Corrosion Inhibitor

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. Polymer-modified vertical and overhead concrete repair.
 - 2. Form-and-pour/pump concrete repair
 - 3. Silica-fume-enhanced concrete repair.
 - 4. 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).

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 (CAN/CSA-A5)

1 day > 2,200 psi (15.2 MPa)

7 days > 5,500 psi (37.9 MPa)

28 days > 7,000 psi (48.3 MPa)

Compressive strength – ASTM C39

28 days > 6,500 psi (44.8 MPa)

Flexural strength – ASTM C78

28 days > 800 psi (5.51 MPa)

Slant/shear bond strength – ASTM C882 (modified)

28 days > 2,500 psi (12.2 MPa)

Length change – ASTM C157 (modified)

28 days (air cure) < 0.06%

Splitting tensile strength – ASTM C496

7 days > 400 psi (2.76 MPa)

28 days > 500 psi (3.45 MPa)

Freeze/thaw resistance – ASTM C666

>98% at 300 cycles

Rapid chloride permeability – ASTM C1202



28 days > 1,000 coulombs

Flexural strength – ASTM C348
28 days > 1,000 psi (6.9 MPa)

Scaling resistance – ASTM C672
2 at 50 cycles

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 FORM-AND-POUR/PUMP CONCRETE REPAIR PRODUCTS

A. One-Component, Pre-Extended, Pumpable and Pourable, Cementitious Repair Material: Packaged, dry mix for repair of concrete.

1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Planitop 11 SCC.
2. Compressive Strength: Not less than 6,000 psi (42 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.

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. 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 clean and free of loose particles, efflorescence, paints, tars, grease, asphaltic materials, bond breakers, curing compounds, wax and any other 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" (2.5 cm).
- 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 substrate is saturated surface-dry (SSD) before installation of Planitop 11 SCC. Alternatively, the prepared concrete can be coated with Planibond 3C.
- 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.
- F. Pretreat formwork with a form-release agent.

3.3 MIXING

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

- A. The mixing ratio is 0.75 U.S. gal. (2.84 L) of clean, potable water per 65 lbs. (29.5 kg) of Planitop 11 SCC.
- B. Place 5.5 U.S. pints (2.60 L) of clean, potable water into a mixing container. Slowly add Planitop 11 SCC while mixing; always add the powder to the water. Add the remaining 0.5 U.S. pints (236 mL) of water if required. Do not add more water than specified.
- C. Use a rotary drum mixer to mechanically mix the material. Pre-dampen the mixer and remove excess water before proceeding. Alternatively, use a heavy-duty, low-speed drill (at 400 to 600 rpm) and Jiffy paddle.
- D. Mix for 3 minutes to obtain a smooth, homogenous consistency.

3.4 INSTALLATION

Placing via form-and-pour

Read all installation instructions thoroughly before installation.

- A. Planitop 11 SCC can be applied via form-and-pour or form-and-pump into formwork on horizontal, vertical and overhead surfaces.
- B. The formwork should be rigid, sealed and tight to prevent material lost and water absorption into the formwork. Formwork should be pre-treated with an appropriate, environmentally friendly form-release agent to provide easy of form removal. Ensure that formwork has drainage outlets to remove pre-flooded water (24 hours before placement of Planitop 11 SCC), maintaining an SSD surface.



- C. When encountering exposed reinforcing steel bars, clean bars and coat them with Mapefer 1K or Planibond 3C to protect against corrosion and to improve adhesion (see technical data sheets for details). Do not flood the forms in these circumstances.
- D. After draining forms and immediately after mixing, vibrate the form while pumping or pouring Planitop 11 SCC into the formed area. Reference ACI 304R, "Guide for Measuring, Mixing, Transporting and Placing Concrete."

3.5 CURING

- A. Keep Planitop 11 SCC protected from high winds and direct sunlight while it cures.

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