



CONCRETE RENEW
High-Performance Concrete Resurfacer

SECTION 03 01 00
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.
 - 2. Vertical concrete repair.

1.2 RELATED SECTIONS

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

1.3 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.

1.4 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.

1.5 PRE-INSTALLATION MEETINGS

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

1.6 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.

1.7 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.

1.8 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 28 days > 4,000 psi (27.6 MPa)
 - Flexural Strength – ASTM C348-02 28 days > 850 psi (5.86 MPa)
 - Color Natural light gray
- 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 POLYMER-MODIFIED HORIZONTAL CONCRETE REPAIR PRODUCTS

- A. Polymer-Modified, Cementitious Horizontal Resurfacing Mortar: 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; Concrete Renew mixed with diluted Planicrete UA.
 - 2. Product shall be no re-dispersible.
 - 3. Compressive Strength: Not less than 4,000 psi (27.6 MPa) within twenty-eight 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. 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. Sound, stable, clean, vertical and horizontal concrete surfaces, both interior and exterior.
- 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. Ensure that any concrete that has been damaged or weakened, such as de-icing salts, is mechanically removed before application of Concrete Renew.
- C. Mechanically profile and prepare concrete surfaces by engineer-approved methods in accordance with the most current ICRI 310.2R guidelines to obtain a concrete surface profile (CSP) between #2 and #3.
- D. Always fill in deep areas, holes or cracks with appropriate concrete restoration materials, such as Planitop X, Mapecem Quickpatch or Planibond EBA.
- E. Ensure that the concrete surface is saturated surface-dry (SSD) before the installation of Concrete Renew. Do not apply over standing water.
- F. Some substrates may benefit from priming. For priming absorbent concrete substrates, use a mixture created from a 3-to-1 ratio of water to Planicrete UA.

3.3 MIXING

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



details. One 25-lb. (11.3-kg) bag of Concrete Renew requires 3.7 U.S. qts. (3.50 L) of water. For additional performance, the same amount of Concrete Renew can instead be mixed with 3.9 U.S. qts. (3.69 L) of liquid created from a 3-to-1 ratio of water to Planicrete UA. .

- B. Place 3/4 of the desired mixing liquid into a mixing container.
- C. Slowly add Concrete Renew powder while mixing; always add the powder to the liquid. While mixing, add as much of the remaining 1/4 mixing liquid as needed to achieve the desired consistency. Do not add more mixing liquid than specified.
- D. When adding powdered oxides or liquid colorants, add to mix water and stir for 30 seconds before adding Concrete Renew powder. Always perform a mockup to ensure that desired results and finishes are achieved.
- E. Do not mix more material than can be applied within 20 minutes.
- F. Do not re-temper or add more mix water. It will change the final cured color.
- G. Do not apply over standing water.
- H. Concrete Renew can be used for minor patches less than 3/16" (4.5 mm) deep and 2" (5 cm) in diameter. For patching, reduce mix water by 40% and mix to a stiff consistency. For patching areas greater than 3/16" (4.5 mm) depth or greater than 2" (5 cm) diameter, use Mapecem Quickpatch.
- I. For applications subject to freeze/thaw, or beyond light residential use, always use Planicrete UA as an admixture. Review the Planicrete UA technical data sheet to determine appropriate mixing ratios.

3.4 INSTALLATION

Read all installation instructions thoroughly before installation.

- A. In temperatures above 85°F (29°C), follow ACI hot-weather guidelines. As a general practice, apply material in the cool of day, protected from wind and direct sunlight.
- B. Apply with trowel, hopper gun, plaster pump or other acceptable method immediately after mixing.
- C. Always work a scrub coat of Concrete Renew into the surface, scrubbing material in and following immediately with additional material while the scrub coat is still wet.
- D. Application techniques for each of the following methods:
 - Trowel: Immediately after mixing, pour onto the surface and trowel to a smooth, flat finish. Immediately broom or finish to the desired texture.
 - Squeegee: Immediately after mixing, pour onto the surface and squeegee (flat blade) to a smooth, flat finish. Immediately broom or finish to the desired texture.
 - Broom: Immediately after mixing, pour onto the surface and broom or finish to the desired texture.
 - Hopper gun: Immediately after mixing, pour into hopper gun outfitted with a large orifice and spray with air pressure of 8 to 15 psi. Cover 75% to 100% of the surface using a circular spray pattern. When spraying material, hold hopper gun nozzle parallel to the surface at



about 2 ft. (0.61 m) from the surface. Broom or finish to the desired texture.

- E. When applying in situations where Concrete Renew will be exposed to vehicular traffic, such as cars or light trucks, always use Planicrete UA with Concrete Renew and utilize a three-coat application system, preparing the substrate to a saturated surface-dry (SSD) condition and with a scrub coat before the application of each coat. Apply the first coat and brush to reflect the desired finish look. After at least 3 hours, when the material is hard and dry, apply a second coat and brush in motions at a 90-degree angle to the first coat. Once dry, after at least 3 hours, apply the third and final coat and brush in the same direction as the first coat. Once dry, apply a suitable sealer.

3.5 EXPANSION AND CONTROL JOINTS

- A. Honor all expansion and control joints
- B. Fill any saw-cut joints with a suitable joint sealant to protect against water intrusion and the potential of progressive freeze/thaw damage.
- C. Do not allow any Concrete Renew to bridge any moving expansion or control joint.

3.6 CURING AND PROTECTION

- A. Concrete Renew is self-curing; do not use any damp-curing method.
- B. Concrete Renew can be sealed with compatible water-based sealers within a few hours of placement when temperatures are above 70°F (21°C).

END OF SECTION