



MAPEFER 1K
Corrosion-Inhibiting Coating for Reinforcing Steel

SECTION 03 01 00
MAINTENANCE OF CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Corrosion Inhibiting

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:

pH	12 to 13
Adhesion to concrete	> 350 psi (> 2.41 MPa)
Adhesion to sandblasted steel	> 350 psi (> 2.41 MPa)
Resistance to saline fog after 120 hours (ASTM B117)	Excellent (no corrosion)
Independent testing to ASTM D117-07 (salt spray, 120 hours)	Pass (no defects)

- 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 CORROSION-INHIBITING MATERIALS

- A. One-component anti-corrosion coating based on unique polymers, cementitious binders and corrosion inhibitors. Specially formulated for application on clean reinforcing steel to inhibit oxidation and rust formation.
 - 1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Mapefer 1K.
 - 2. Meets or exceeds performance when tested at ASTM D117 standards.

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.

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. Remove all corrosion and loose scale from corrosion from exposed reinforcing steel. Reference International Concrete Repair institute (ICRI) Technical Guideline #310.1R-2008 (formerly #03730) "Guide for Surface Preparation for Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion," or in accordance with The Society for Protective Coatings (SSPC) guidelines.
- B. Mechanically abrade all exposed steel down to white metal, paying particular attention to the back of exposed steel bars. Corrosion from pits and imperfections can also be removed by vigorously brushing the metal surface to remove oxidation.
- C. If a significant portion of cross section has been lost, replace or supplement the reinforcing steel, as recommended by an engineer, and coat with Mapefer 1K.
- D. If the concrete substrate around the application area is to be repaired, remove all delaminated, loose or spalled concrete before application of Mapefer 1K.

3.3 MIXING

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

- A. Pour 1 to 1.2 U.S. qts. (0.95 to 1.14 L) of cool, clean potable water into a clean container.
- B. While slowly adding the 10-lb. bag (4.54-kg) of Mapefer 1K, use a drill and paddle to mix to a lump-free consistency.

3.4 INSTALLATION



Application on steel as an anti-corrosion coating

Read all installation instructions thoroughly before installation.

- A. Apply by brush within one hour at 73°F (23°C) of mixing.
- B. Apply in two coats of 1/32" (1 mm) each, totaling 1/16" (2 mm).
- C. Apply the second coat between 2 and 24 hours of the first coat.
- D. Do not apply repair mortar until Mapefer 1K is completely dry, usually after 6 hours at 73°F (23°C).

3.5 CURING AND PROTECTION

Protect from high winds during cure. No curing compound is required.

END OF SECTION