

SECTION 03010

MAINTENANCE OF CONCRETE

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS: This section includes the following:

- A. Cleaning of existing concrete surfaces.
- B. Repair of exposed structural, shrinkage, and settlement cracks.
- C. Resurfacing of concrete surfaces having spalled areas and other damage.
- D. Repair of deteriorated concrete.
- E. Repair of internal concrete reinforcement.

1.2 REFERENCE STANDARDS

The references listed below are a part of this section. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Reference	Title
ASTM A775/A775M	Standard Specification for Epoxy-Coated Steel Reinforcing Bars; 2007b
ASTM C33/C33M	Standard Specification for Concrete Aggregates; 2011a
ASTM C150/C150M	Standard Specification for Portland Cement; 2012
ASTM C348	Standard Test Method for Flexural Strength of Hydraulic Cement Mortars; 2008
ASTM C404	Standard Specification for Aggregates for Masonry Grout; 2011
ASTM C928/C928M	Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Material for Concrete Repairs; 2009

1.3 SUBMITTALS

- A. See Section 01300, Submittals, for submittal procedures.
- B. Product Data: Indicate product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.
- C. Qualification Statements.
- D. Project Record Documents: Accurately record actual locations of structural reinforcement repairs and type of repair.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three (3) years of documented experience.
- B. Cleaner Qualifications: Company specializing in, and with minimum of 3 years of experience in, the type of cleaning specified.
- C. Installer Qualifications: Company specializing in performing work of the type specified and with minimum of 3 years of experience.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturers' instructions for storage, shelf life limitations, and handling of products.

PART 2 – PRODUCTS

2.1 CLEANING MATERIALS

- A. Detergent: Non-ionic detergent.
- B. Cleaning Agent: Prosoco EnviroKlean Biowash or approved equal.

2.2 CEMENTITIOUS PATCHING AND REPAIR MATERIALS

- A. Manufacturers:
 - 1. ARDEX Engineered Cements: www.ardexamericas.com.
 - 2. BASF Construction Chemicals-Building Systems: www.buildingsystems.basf.com.
 - 3. Prospec, an Oldcastle brand: www.prospec.com.
 - 4. Dayton Superior Corporation: www.daytonsuperior.com.
 - 5. SpecChem, LLC: www.specchemllc.com.
 - 6. W.R. Meadows, Inc.: www.wrmeadows.com.
- B. Bonding Slurry: Water-based latex admixture complying with ASTM C1059/C1059M, combined with Portland cement and sand in accordance with admixture manufacturer's instructions.
 - 1. Admixture Products:
 - a. SpecChem, LLC; Acrylic Bonder: www.specchemllc.com.
 - b. W.R. Meadows, Inc.; Acry-lok: www.wrmeadows.com.
 - c. Approved Equal
- C. Cementitious Resurfacing Plaster: See Section 09240, Portland Cement Plaster.

2.3 ANCILLARY MATERIALS

- A. Anchoring Adhesive: Self-leveling or non-sag as applicable.**
- B. Portland Cement: ASTM C150, Type I, grey.**
- C. Sand: ASTM C33 or ASTM C404; uniformly graded, clean.**
- D. Water: Clean and potable.**

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work.
- B. Beginning of installation means acceptance of substrate.

3.2 CLEANING EXISTING CONCRETE

- A. Provide enclosures, barricades, and other temporary construction as required to protect adjacent work from damage.
- B. Clean concrete surfaces of dirt or other contamination using the gentlest method that is effective. Try the gentlest method first, then, if not clean enough, use a less gentle method taking care to watch for impending damage. Clean out cracks and voids using same methods.
- C. The following are acceptable cleaning methods, in order from gentlest to less gentle:
 - 1. Water washing with BioWash using low-pressure, maximum of 100 psi, and, if necessary, brushes with natural or synthetic bristles.
 - 2. Increasing the water washing pressure to maximum of 400 psi.
- D. Do not use any of the following cleaning methods, unless otherwise indicated:
 - 1. Brushes with wire bristles, grinding or blasting with abrasives, solvents, hydrochloric or muriatic acid, sodium hydroxide, caustic soda, or lye.
 - 2. Soap or detergent that is not non-ionic.

3.3 (DELETED)

3.4 CONCRETE SURFACE REPAIR USING CEMENTITIOUS MATERIALS

- A. Clean concrete surfaces, cracks, and joints of dirt, laitance, corrosion, and other contamination using method(s) specified above and allow to dry.
- B. Apply coating of bonding agent to entire concrete surface to be repaired.
- C. Fill voids with cementitious mortar to within 3/4-inch of surface.

D. Apply repair mortar by steel trowel to a minimum thickness of 1/4-inch (6 mm) over entire surface, terminating at a vertical change in plane on all sides.

E. Finish surface of concrete shall be by plasterer.

3.5 MEASUREMENT AND PAYMENT

Maintenance of concrete shall not be paid for directly, but shall be considered incidental and included in the bids for the respective line items in the Proposal Schedule.

- END OF SECTION -