SECTION 03 01 30
Maintenance of Cast-In-Place Concrete

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, general provisions of the Contract, and other related construction documents such as Division 01 specifications apply to this Section

1.2 SUMMARY

A. This Section includes an anti-corrosion coating for reinforcing steel and/or as a bonding agent for fresh mortar or concrete to existing concrete surfaces that have been prepared for repair.

1. ARDEX BACA™ Bonding & Anti-Corrosion Agent

B. Related Sections include the following:

1. Section 03 30 00, Cast-In-Place Concrete

1.3 REFERENCES

A. ASTM C 882, Bond Strength of Epoxy-Resin Systems Used With Concrete by Slant Shear

B. ASTM C 78, Flexural Strength of Concrete

C. ASTM C 1202, Rapid Chloride Ion Penetration

D. ICRI Technical Guideline No. 03732 Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays

E. ICRI Technical Guide No. 03730 Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion

F. ACI 546r-04 Concrete Repair Guide

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets.

B. Qualification Data: For Installer

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications: The manufacturer shall be a company with at least five years experience and regularly engaged in the manufacture and marketing of products specified herein.

B. Installation of the ARDEX product must be completed by a factory-trained, certified applicator, such as an ARDEX LevelMaster® Elite or Choice Contractor, using mixing equipment and tools approved by the manufacturer. Please Contact ARDEX Engineered Cements (724) 203-5000 for a list of recommended installers.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.

B. Store products in a dry area with temperature maintained between 50° and 85°F (10° and 29°C) and Protect from direct sunlight.

C. Handle products in accordance with manufacturer's printed recommendations.

1.7 PROJECT CONDITIONS

A. Do not install material below 50°F (10°C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if substrate is warm and follow warm weather instructions available from the ARDEX Technical Service Department.

PART 2 – PRODUCTS

2.1 MAINTENANCE OF CAST-IN-PLACE CONCRETE

A. Two-component coating for protecting reinforcing steel from corrosion & bonding concrete repair areas to existing concrete.

1. Acceptable Products:

a. ARDEX BACA™ Bonding & Anti-Corrosion Agent; Manufactured by ARDEX Americas: 400 Ardex Park Drive, Aliquippa, Pa 15001 USA, 724-203-5000, www.ardexamericas.com

2. Performance Requirements:

   a. Application: Hopper Gun or Brush
   b. Open Time: Up to 24 Hours
   c. Pot Life: Approx. 90 minutes (at 70°F (21°C))
   d. Working Time: Approx 90 minutes (at 70°F (21°C))

PART 3 – EXECUTION

3.1 PREPARATION

A. General: Prepare substrate in accordance with manufacturer's instructions. Prior to proceeding with any repair, please refer to the International Concrete Repair Institute's ICRI 03730 Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion; ICRI 03732 Guideline for Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays; and the American Concrete Institute's ACI 546R-04 Concrete Repair Guide for general guidelines for concrete repair. Please also refer to the mortar or repair manufacturer's specific recommendations for substrate preparation.

1. All concrete substrates must be sound, solid, thoroughly clean and free of oil, wax, grease, asphalt, existing patching materials, dirt, curing compounds and any contaminant that might act as a bond breaker. Over watered, frozen or otherwise weak concrete surfaces must also be cleaned down to sound, solid concrete by mechanical methods such as scarifying, scabbling or similar in accordance with ICRI 03732 to create an exposed aggregate surface with a minimum surface profile of approximately 1/16" (1.6 mm). Acid etching, sweeping compounds, solvents and sanding are not acceptable means of preparing the substrate.

2. When reinforcing steel is exposed for protection, prepare the concrete such that a minimum 3/4" (19 mm) clearance is achieved under the reinforcement to ensure sufficient placement of anti-corrosion agent when brushed under steel. Remove all rust or active corrosion agents using sandblasting or mechanical wire brushing to produce a white metal finish. Make sure surfaces are clean, dry and free of all contaminants. Apply immediately to clean metal to avoid new corrosion.

3.2 APPLICATION

A. Mixing:

1. Thoroughly shake the 1 gallon (3.78 L) container of the liquid component "A" and pour into a clean mixing container. Slowly add one-third of the 28 lb (12.7 kg) bag of component "B" powder while mixing at low speed with a drill and mixing paddle. Once this is blended in, add the next third and so on until all of the material is added. Once this is done, continue to mix for approximately 3 minutes to a uniform, lump-free consistency

B. Application:

1. As a bonding agent, a single 20 mil (500 micron) coat is required. Dampen the concrete to be repaired so that the pores are filled with water. Remove excess water on the surface (SSD - Saturated Surface Dry). Apply one 20 mil (50 micron) thick coat of mixed bonding agent with hopper gun or with a stiff bristle brush. Allow the coating to dry to the touch before installing the freshly prepared repair mortar.

2. As an anti-corrosion agent, two 10 mil (250 micron) coats are required. Brush on a 10 mil (250 micron) thick coat of the prepared slurry and allow it to dry for 30 to 45 minutes, then apply a second coat also 10 mils (250 microns) thick. The total thickness of the anti-corrosion agent must be at least 20 mils (500 microns). Allow the coating to dry to the touch before installing the freshly prepared repair mortar.

3. Once applied, ARDEX BONDING & ANTI-CORROSION AGENT has an open time of 24 hours. Place the mortar or concrete while the bonding agent is still wet, or within 24 hours. If the mortar or concrete is not placed within 24 hours, apply an additional coat before placement.

C. Curing

1. No special curing is required.

D. Cleaning

1. Remove excess material before material cures. If material has cured, remove using mechanical methods that will not damage substrate.

END OF SECTION