

ARDEX GUIDE SPECIFICATION

ARDEX B 20™

Overhead & Vertical Repair Mortar with Corrosion Inhibitor

SECTION 03 30 00 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 Portland cement-based, polymer modified structural repair mortar with integral corrosion inhibitor.

- 1. ARDEX B 20™ Overhead & Vertical Repair Mortar with Corrosion Inhibitor
- 2. ARDEX P 71™ Primer
- 3. 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 C109, Compressive Strength of Hydraulic Cement Mortars
- B. ASTM C78, Flexural Strength of Concrete
- C. ASTM C469, Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression
- D. ASTM C157, Length Change of Hardened Hydraulic-Cement Mortar and Concrete
- E. ICRI Technical Guideline No. 03732 Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays
- F. ICRI Technical Guideline No. 03730 Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion

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 CAST-IN-PLACE CONCRETE

- A. Portland cement-based polymer modified structural repair mortar, with integral corrosion inhibitors suitable for vertical and overhead concrete.
 - 1. Acceptable Products:
 - a. ARDEX B 20™; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, Pa 15001 USA 724-203-5000
 - 2. Performance and Physical Properties: Meet or exceed the following values for material cured at 73° F (23° C) and 50 percent relative humidity:
 - a. Application: Trowel
 - b. Working Time: 15 - 20 minutes
 - c. Compressive Strength: 3,000 psi at 7 days, 6,300 psi at 28 days, ASTM C109
 - d. Flexural Strength: 1,100 psi at 7 days, 1,500 psi at 28 days, ASTM C293
 - e. Modulus of Elasticity in Compression: 2.26×10^6 psi at 28 days, ASTM C496
 - f. Color: Gray

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.
 - 1. All substrates must be sound, solid, dry, and completely free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker. Overwatered, 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 before priming. Acid etching and the use of sweeping compounds and solvents are not acceptable.
 - 2. The repair area must be saw cut in a basic rectangular shape at least ¼" (6 mm) in depth. The cuts should be made at 90° angle, and should be slightly keyed. Chip out the concrete inside the cuts to a minimum depth of ¼" (6 mm) until the area is squared or box shape.

3. Mechanically prepare surface to obtain an exposed aggregate surface with a minimum surface profile of approximately 1/16" (1.5 mm) / ICIR concrete surface profile of 5 (CSP #5).
4. For cases with exposed reinforcing steel, prepare the concrete such that a minimum 3/4" (19 mm) is achieved around the steel to ensure sufficient placement of the corrosion inhibitor. Mechanically clean the steel to remove all rust and any other contaminants in accordance with ICRI 03730. Prime the steel with ARDEX Bonding & Anti-Corrosion Agent™ prior to proceeding with repair. For further details, please refer to the ARDEX Technical data sheet.

B. Joint Preparation

1. Moving Joints and Moving Cracks – honor all expansion and isolation joints up through the ARDEX B 20™. A flexible sealing compound suitable for the application may be installed. ARDEX ARDISEAL™ RAPID PLUS may be installed.
2. Control Joints and dormant cracks greater than 1/16" (1.5 mm) – fill with ARDEX ARDIFIX™ Joint Filler. Please note that the repair material must be sand broadcast to refusal to create a bonding surface for the ARDEX B 20. The filling of dormant cracks and dormant joints as described is recommended to help prevent telegraphing. However, should movement occur, cracks and joints will reappear.

3.2 APPLICATION OF ARDEX B 20™:

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas and landscaping from contact due to mixing and handling of materials.
- C. Prime (as needed), mix, apply and allow to cure in accordance with the manufacturer's printed instructions.
 1. When mixing sanded materials, ARDEX recommends using the ARDEX DUSTFREE™ or a standard "gutter hook" vacuum attachment in combination with a wet/dry (Shop-Vac® style) vacuum and HEPA dust extraction vacuum system. Additionally, each bag should be handled with care and emptied slowly to avoid creating a plume of dust. Contact the ARDEX Technical Service Department for more details on ARDEX products and air quality management.

END OF SECTION