



26 July, 2016

MILITARY DEPARTMENT
STATE of NEBRASKA
LINCOLN, NEBRASKA

**NEBRASKA ARMY NATIONAL GUARD
CATS Buildings 422 and 423 Modernization**

at
**Camp Ashland Training Site
220 County Road A
Ashland, NE 68003**

PROJECT NO. 31090388 (422), 31090423 (423)

A D D E N D U M N O . 3

The original specifications and drawings on the STATE OF NEBRASKA REQUEST for PROPOSAL FORM for the project noted above are amended as noted in this Addendum No. 3.

Receipt of this Addendum shall be acknowledged by inserting its number and date in the space provided on the Bid Form.

ADDENDUM NO. 3

NOTE TO ALL PLANHOLDERS: Please insert this Addendum into your copy of the Contract Documents for the above named project.

The following changes to the Contract Documents are issued by the CFMO-CMB and shall have the same force and affect as though a part of the original issue.

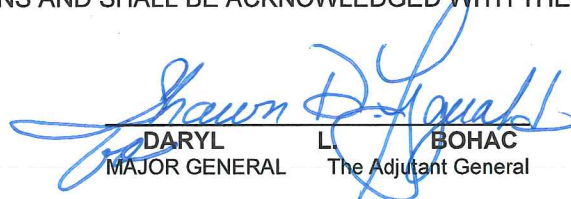
THE RECEIPT DATE, TIME and LOCATION of the BID PROPOSAL submission HAVE NOT CHANGED.

PROJECT MANUAL

ITEM NO.

- ADD 1-0 Reference Section 096006 – Water Vapor Emission Control System For Concrete Floors.
 1. Section 096006 - Water Vapor Emission Control System For Concrete Floors was inadvertently left out of the Project Manual as in being included herein.

THIS ADDENDUM SHALL BE ATTACHED TO AND MADE A PART OF THE DRAWINGS AND SPECIFICATIONS AND SHALL BE ACKNOWLEDGED WITH THE BIDDER'S PROPOSAL.


DARYL L. BOHAC
 MAJOR GENERAL The Adjutant General

End of Addendum No. 3



SECTION 096006

WATER VAPOR EMISSION CONTROL SYSTEM FOR CONCRETE FLOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Epoxy-based moisture control system to be applied over concrete floor slabs.
- B. System must include moisture barrier, primer and self-leveling underlayment.

1.02 RELATED REQUIREMENTS

- A. Section 012200 - Unit Prices: Descriptions of unit price items, administrative requirements.
- B. Section 013000 - Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.
- C. Section 090561 - Common Work Results for Flooring Preparation.
- D. Individual Division 9 flooring sections.
- E. Section 017800 - Closeout Submittals: Project record documents, operation and maintenance (O&M) data, warranties and bonds.

1.03 UNIT PRICES:

- A. See Section 012200 - Unit Prices, for additional unit price requirements.
 - 1. Provide the work under the unit price method.
 - 2. Measure moisture control system installation by the square foot.

1.04 REFERENCE STANDARDS

- A. ASTM D 1653 - Standard Test Methods for Water Vapor Transmission of Organic Coating Films.
- B. ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- C. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
- D. ASTM D1308 - Chemical Resistance of Finishes.
- E. ASTM F 2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- F. ASTM C1583 - Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on all materials specified.
- C. Test Reports: Coordinate with Section 090561 and supply reports as indicated.
- D. Evaluation Service Reports: Show compliance with specified requirements.
- E. Warranty: Submit per Section 017800.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum three (3) years of experience and factory-trained and certified by manufacturer.
- C. Applicator must file a pre-installation checklist with manufacturer and receive written confirmation of the approval for warranty.
- D. The moisture control system shall be installed over concrete surfaces that have been properly mechanically prepared to a minimum surface profile of ICRI CSP #3 and have a moisture

emission level of 20 lbs. or less at the time of testing when measured in accordance with ASTM F 1869, or an RH value of 95% or less when measured in accordance with ASTM F 2170.

- E. All material must be installed in accordance with manufacturer's recommended specifications for use and installation.
- F. The moisture control system shall reduce the vapor emissions of the concrete to less than 3 lb. and the underlayment or topping surface shall be suitable to receive all types of floor coverings or sealers when allowed to dry in accordance with manufacturer's recommendations.
- G. Manufacturer's certification that the system has been tested in accordance with ASTM D 1653 and has a perm rating of less than 0.05.

1.07 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 from manufacturer.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in unopened packages.
- B. Store under cover and elevated above grade and protect from extreme temperatures and moisture between 50 and 85 degrees F. Protect liquids from freezing and direct sunlight.

1.09 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide ten year manufacturer warranty for moisture control system from Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design-Ardex Engineered Cements; Product: ARDEX MC RAPID Moisture Control System. www.ardex.com.
- B. Additional manufacturers:
 1. Koster American Corporation - Product: VAP I 2000 FS.
 2. Mapei Corporation - APAC 3-Step System (APAC 70-Moisture Barrier, APAC 31-Primer, APAC 40-Self Leveling Underlayment).
 3. Creteseal - Product: Creteseal CS 2000 2-Day System.
 4. Substitutions: See Section 016000 - Product Requirements.

2.02 MATERIALS

- A. Water Vapor Emission Control System: ARDEX MC RAPID-Epoxy-based Moisture Control System consisting of Water Vapor Coating, Primer and Underlayment.
- B. Primer: ARDEX P-82 ULTRA PRIME.
- C. Underlayment: ARDEX K-55 MICROTEC. Hydraulic Cement-based self-leveling underlayment. 1/8" thickness installed over P-82 ULTRA PRIME.
- D. Crack Filler: ARDEX ARDIFIX.
- E. Water: Water for mixing cementitious materials shall be clean, potable and sufficiently cool (not warmer than 70 degrees F).

2.03 MIXING COMPONENTS

- A. Each individual 22lb. unit contains separate, pre-measured quantities of hardener (Part B) and the resin (Part A). After opening each container, stir the individual components thoroughly before blending. The hardening agent (Part B) is added to the resin (Part A).

- B. Pour all of the hardener into the resin portion and stir thoroughly for a minimum of 3 minutes using a low speed drill and an epoxy mixing paddle. Once mixed, pour some of the epoxy back into the hardener container, stir for 10 seconds, and then pour all of the contents back into the resin container. Mix for an additional 30 seconds before applying.
- C. For instructions on the filling of dormant cracks and joints, follow the written instructions of the selected manufacturer.

PART 3 EXECUTION

3.01 PREPARATION

- A. Concrete Subfloors: Prepare substrate in accordance with manufacturer's instructions.
- B. All concrete substrates must be structurally sound, solid, free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before application and mechanically prepared to a minimum surface profile of ICRI CSP #3 (light sandblast).
 - 1. Prior to proceeding, refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
 - 2. The concrete must have a minimum tensile strength of at least 150 psi for areas to receive normal foot traffic, and 200 psi for area of heavy commercial traffic when tested in accordance with ASTM C1583. The concrete surface can be damp, but must be free of standing water.
 - 3. Prior to beginning the installation, measure the relative humidity within the concrete (ASTM F2170). Alternatively, you can also measure the surface relative humidity in accordance with ASTM F2420. For these relative humidity methods, the RH shall not exceed 100%.
 - 4. If the concrete substrate is too uneven to provide a uniform film thickness of the ARDEX MC™ RAPID (typically CSP 6 or higher), the substrate can be pre-smoothed using ARDEX K 301™ Self-Leveling Exterior Concrete Topping or ARDEX MRP™ Moisture Resistant Patch.
 - 5. All cracks in the subfloor shall be repaired to minimize telegraphing through the underlayment.
- C. JOINT AND CRACK PREPARATION
 - 1. Moving joints - honor all expansion and isolation joints up through the ARDEX Moisture Control System, and underlayment or topping. A flexible sealing compound such as ARDEX ARDISEAL™ Rapid Plus may be installed.
 - 2. Saw Cuts, Control Joints and Dormant Cracks - fill all non-moving joints and cracks greater than 1/32" with ARDEX ARDIFIX™ Joint Filler, as recommended by the manufacturer.

3.02 INSTALLATION

- A. EXAMINATION:
 - 1. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
 - 2. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.
 - 3. Mixing: Comply with manufacturer's printed instructions and the following.
- B. APPLICATION:
 - 1. Apply the first coat of freshly mixed ARDEX MC RAPID to the prepared concrete surface in a uniform direction at an application rate of 270 sq. ft. per unit to achieve a coating thickness of 10 mils. Use a short-nap paint roller or notched squeegee for smoother surfaces and a longer nap roller for more uneven substrates.. To minimize the potential for pinhole formation, work the ARDEX MC™ RAPID into the surface with the roller to ensure maximum penetration. ARDEX MC™ RAPID can also be worked into the surface with a paintbrush for hard to reach areas and corners. Once the area is completely coated, allow to dry for a minimum of 4 hours (max. 24 hours). It is not necessary to re-test the substrate for moisture emissions prior to installing the floor covering.

2. For ARDEX Underlayment applications of ¼" or less, prime the surface of the ARDEX MC™ RAPID with ARDEX P 82™ ULTRA PRIME. Allow the AREX P 82™ ULTRA PRIME to dry thoroughly (min. 3 hours; max. 24 hours) before installing the underlayment.
3. Install ARDEX K-55 MICROTEC underlayment.

3.03 FIELD QUALITY CONTROL

- A. Field sampling of the Ardex products is to be done by taking an entire unopened unit or bag of the product being installed to an independent testing facility for testing. There are no in situ test procedures for the evaluation of the specified materials.

3.04 PROTECTION

- A. Prior to the installation of the underlayment or topping, or finish flooring or sealer, the surface of the system shall be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

END OF SECTION