

## Part 1, General (US Masonry Coating)

### 1.01 Work Included

- A. Furnish all materials, labor, tools, and equipment to patch or repair interior and/or exterior horizontal vertical and overhead surfaces with two component acrylic polymer modified Portland Cement based system as designated by the designer/owner.

### 1.02 Related Work

- A. Joint fillers
- B. Crack repair
- C. Rebar Splicing

### 1.03 Quality Assurance

- A. Provide a notarized certificate stating that the Portland cement polymer modified coating meets the specified requirements and have the manufacturer's current printed literature on the specified product.
- B. Portland Cement polymer modified coating shall be tested by a certified testing laboratory, on a batch basis, to assure the product has been manufactured as specified on manufacturer's printed literature.
- C. Complete laboratory test reports, from an independently qualified testing laboratory, shall be made available for the specified product.

### 1.04 Delivery, Storage, and Handling

- A. Deliver the specified product in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers.
- B. Store and condition the specified product as recommended by the manufacturer.

### 1.05 Job Conditions

- A. Environmental Conditions: Do not apply material in rainfall or if the ambient temperature will fall below 40 degrees F. within 24 hours of application.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the Portland cement polymer modified coating.

## Part 2, Products

### 2.01 Acceptable Products

- A. US Masonry Coating as produced by U.S. Concrete Products, LLC, Timonium, Maryland.
- B. Substitutions: The use of other than the specified product will be considered providing the contractor requests its use in writing to the Engineer. A certificate of compliance shall accompany this request from an approved independent testing laboratory that the proposed substitute product meets or exceeds the specified performance criteria, tested in accordance with the specified test standards.

## 2.02 Performance Criteria

- A. Properties of the mixed Portland cement polymer modified coating:
1. Working Time: 40 minutes
  2. Finishing Time: 30-60 minutes
  3. Color: concrete gray and white
  4. Flow: 145%
- B. Properties of the cured Portland cement polymer modified coating:
1. Compressive Strength (ASTM C-109 Modified)
    - a. 1 day 2000 psi
    - b. 7 days 4000 psi
    - c. 28 days 6500 psi
  2. Tensile Strength (ASTM C-190) at 28 days: 750 psi min.
  3. Flexural Strength (Modulus of Rupture)(ASTM C-348) at 28 days: 700 psi
  4. Bond Strength (ASTM C-321 to masonry unit) at 28 days: 500 psi
  5. Water Vapor Transmission (ASTM E96-93) @ 6mm: 5-7 perms
  6. Freeze Thaw Resistance (ASTM C 666 A) @ 300 cycles: < 2% loss; 102 RDM
  7. Absorption (ASTM C 140): <1%
  8. Shear Bond (ASTM C 1082): 1000 psi+

## 2.03 Materials

- A. Portland cement polymer modified coating:
1. US Masonry Coating component B shall be a blend of selected Portland cements, specially graded fine siliceous aggregates, admixtures for controlling flow and setting time, water reducers for workability. Component A shall be an acrylic polymer emulsion.
  2. The ratio of Component A to Component B shall be .55:1 by weight.
  3. The material shall not contain asbestos, chlorides, nitrates, added gypsum, added lime, or high aluminum cements.
  4. The material shall be non-combustible, either before or after cure.
  5. The Portland cement polymer modified coating shall be supplied in a factory proportioned units.
  6. The Portland cement polymer modified coating must be able to be finished with a masonry brush or steel trowel.
  7. The Portland cement polymer modified coating must be able to be placed with masonry brush or plaster hopper gun.

## Part 3, Execution

### 3.01 Surface Preparation

- A. The surface must be mechanically prepared. Areas to be repaired must be clean and sound. All loose and deteriorated concrete shall be removed by mechanical means approved by the Engineer.
- B. Cracks in the substrate in the area of repair must be treated as directed by the Engineer.
- C. Extend all existing control and expansion joints through any patch or overlay. Install new joints as directed by the Engineer. Fill all joints as directed by the Engineer.

### 3.02 Application

- A. Mixing and placing the Portland cement polymer modified coating: If shooting: Mix manually or mechanically. Manually mix in a wheelbarrow or mortar box. Mechanically mix in appropriate sized mortar mixer. Add no more than 1-22.5lb bag Component B to 1-1.5 gallon Component A. Mix to a uniform consistency for wet spray or hand applied applications. Should smaller or larger quantities be needed, be sure the components are dosed in the correct ratio.
- B. Placement Procedure: At the time of application, the substrate should be saturated surface dry with no standing water. Place coating with suitable delivery equipment as required by the job conditions. Control thickness, method of support, air pressure (if spray applied) and content of Component A to prevent sagging or sloughing off, of material.
- C. Curing is not required.
- D. Adhere to all limitations and cautions for the Portland cement (pneumatically) applied concrete in the manufacturer's current printed literature.
- E. Coverage: Actual coverage will depend on application thickness. For maximum protection apply the mixed material in two coats at 1/16" for a total thickness of 1/8". Applied at 1/8" each kit will cover approximately 75 ft<sup>2</sup> .

### 3.03 Cleaning

- A. The uncured Portland cement polymer modified coating can be cleaned from tools with water. The cured Portland cement polymer modified coating can only be removed mechanically.
- B. Leave finished work and work area in a neat, clean condition without evidence of spill-over onto adjacent areas.