

## SECTION 071616

### CRYSTALLINE WATERPROOFING

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes crystalline waterproofing of floor of the elevator pit.
- B. Related Sections include the following:
  - 1. Division 03 Section "Cast-in-Place Concrete" for formwork, waterstops, and finishing concrete walls and slabs to receive waterproofing.
  - 2. Division 07 Section "Joint Sealants" for elastomeric and preformed sealants in concrete and masonry walls and floors.

##### 1.3 SUBMITTALS

- A. Product Data: Include material descriptions and installation instructions for crystalline waterproofing.
- B. Product Certificates: For crystalline waterproofing, signed by product manufacturer.
- C. Qualification Data: For Installer and manufacturer.
- D. Material Test Reports: For crystalline waterproofing.
- E. Manufacturer's inspection reports of completed installation.
- F. Warranty: Special warranty specified in this Section.

##### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

## 1.5 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with application only when existing and forecasted weather conditions permit crystalline waterproofing to be performed according to manufacturer's written instructions and warranty requirements.
- B. Proceed with waterproofing work only after pipe sleeves, vents, curbs, inserts, drains, and other projections through the substrate to be waterproofed have been completed. Proceed only after concrete **substrate** defects, including honeycombs, voids, and cracks, have been repaired to provide a sound substrate free of forming materials, including reveal inserts.
- C. Ambient Conditions: Proceed with waterproofing work only if temperature is maintained at 40 deg F (4.4 deg C) or above during work and cure period, and space is well ventilated and kept free of water.

## 1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of crystalline waterproofing that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Failure to maintain watertight conditions within specified warranty period.
  - 2. Warranty Period: Five years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide Xypex Concentrate by Xypex Chemical Corp., or comparable product by one of the following:
  - 1. Crystalline Waterproofing:
    - a. American Permaquik Inc.; Super 200.
    - b. Anti-Hydro International, Inc.; Hydro Cap.
    - c. AQUAFIN, Inc.; Aquafin-1C.
    - d. Conproco Corp.; Super Seal.
    - e. Gemite Products, Inc.; Cem-Kote CW Plus.
    - f. ICS Penetron International Ltd.; Penetron Addmix.
    - g. IPA Systems, Inc.; Drycon.
    - h. Specon, Incorporated; Hydrocel (HCPM).
    - i. Tamms Industries, Inc.; Hey'Di K-11.

- j. ThoRoc, Div. of ChemRex; Tegraproof.
- k. Vandex International Ltd.; Vandex Super.
- l. Xypex Chemical Corporation; Xypex.

## 2.2 MATERIALS

- A. Crystalline Waterproofing: A prepackaged, white-colored proprietary blend of portland cement, specially treated sand, and active chemicals that, when mixed with water and applied, penetrates by capillary action into concrete or masonry and reacts chemically with free lime in the presence of water to develop crystalline growth within concrete or masonry capillaries to produce an impervious, dense, waterproof concrete or masonry with properties meeting or exceeding the following criteria:
  - 1. Permeability: 0 for water at 33 feet (10 m) when tested according to CE CRD-C 48.
  - 2. Compressive Strength: 3000 psi (20.7 MPa) when tested according to ASTM C 109/C 109M.
- B. Water: Potable.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Acceptance of Conditions: Examine substrates, with Applicator present, where waterproofing is to be applied.
  - 1. Proceed with application only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Protect other work from damage from cleaning, preparation, and application of crystalline waterproofing. Provide temporary enclosure to confine spraying operation and to ensure adequate ambient temperatures and ventilation conditions for application.
- B. Repair damaged or unsatisfactory concrete or masonry according to manufacturer's written instructions.
- C. Surface Preparation: Comply with waterproofing manufacturer's written instructions to remove efflorescence, chalk, dust, dirt, mortar spatter, grease, oils, curing compounds, and form-release agents to ensure that waterproofing bonds to concrete or masonry surfaces.

1. Clean concrete surfaces according to ASTM D 4258.
  - a. Scratch- and Float-Finished Concrete: Etch with 10 percent muriatic (hydrochloric) acid solution according to ASTM D 4260.
  - b. Prepare smooth-formed and trowel-finished concrete by mechanical abrading or abrasive-blast cleaning according to ASTM D 4259.

### 3.3 APPLICATION

- A. General: Comply with waterproofing manufacturer's written instructions for application.
  1. Dampen surface for several hours prior to application with water and maintain damp condition until applying waterproofing.
  2. Apply waterproofing to all horizontal and vertical concrete surfaces of elevator pit.
  3. Number of Coats: One application **for brush; two for spray**.
  4. Dampen surface between coats.
- B. Final Coat Finish: Spray Textured or Brushed.
- C. Moist-cure waterproofing for three days immediately after application has set, followed by two days of air drying as recommended in writing by manufacturer.
- D. Waterproofing Treatment Extensions: Extend waterproofing treatment as follows:
  1. Onto every substrate in areas indicated for treatment, including pipe trenches, pipe chases, pits, sumps, and similar offsets and features.

### 3.4 PROTECTION

- A. Protect applied crystalline waterproofing from rapid drying, severe weather exposure, and water accumulation. Maintain completed Work in moist condition for not less than three days by procedures recommended in writing by waterproofing manufacturer. Protect waterproofing from temperatures below 36 deg F (2 deg C).

### 3.5 FIELD QUALITY CONTROL

- A. Inspection: Manufacturer's representative to inspect completed application and to provide a written report that application complies with manufacturer's written instructions.

END OF SECTION 071616