

SECTION 07161 - MODIFIED CEMENT WATERPROOFING**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Polymer-modified, cement-based waterproofing.
 - a. For application to interior face of concrete foundations where occupied and exposed to view including elevator pit.
- B. Related Sections include the following:
 - 1. Division 3 Section "Cast-in-Place Concrete" for formwork, waterstops, and finishing concrete walls and slabs to receive waterproofing.

1.3 SUBMITTALS

- A. Product Data: For each type of product specified.

1.4 JOB CONDITIONS

- A. 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 and masonry substrate defects, including honeycombs, voids, and cracks, have been repaired to provide a sound substrate free of forming materials, including reveal inserts.
- B. Ambient Conditions: Proceed with waterproofing work only if temperature is maintained at 40 degF or above during work and cure period and space is well ventilated and kept free of water.

1.5 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Warranty: Written warranty, signed by Applicator and countersigned by Contractor agreeing to repair or replace waterproofing that does not comply with requirements or that fails to perform as required, and to maintain watertight conditions within specified warranty period. Warranty includes responsibility for removing and replacing other work that conceals modified cement waterproofing. During warranty period, repairs and replacements required because of unusual weather phenomena and other events beyond Contractor's or Applicator's control shall be completed by Contractor or Applicator and paid for by Owner at prevailing rates.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS**2.1 MANUFACTURERS**

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Polymer-Modified, Cement-Based Waterproofing:
 - a. Cem-Kote CW; Gemite Products, Inc.
 - b. SikaTop Seal 107; Sika Corporation.
 - c. Sonoblock; Sonneborn, Div. of Chemrex, Inc.

2.2 MATERIALS

- A. Portland Cement: ASTM C150, Type I.
- B. Slurry-Coat Aggregate: ASTM C144, sand.
- C. Trowel-Coat Aggregate: ASTM C33, fine aggregate.
- D. Water: Potable.
- E. Polymer-Modified, Cement-Based Waterproofing: One- or two-component, polymer-modified, cementitious waterproofing compound containing a blend of portland cement, graded aggregates, water-reducing agents, and admixtures for control of set time and shrinkage to produce a waterproofing mortar suitable for vertical or overhead application below or above grade.
 - 1. Cured application shall be breathable and resist positive and negative hydrostatic pressure.
 - 2. Properties of cured waterproofing shall meet or exceed the following:
 - a. Compressive Strength: 4000 psi at seven days, or 6000 psi at 28 days when tested according to ASTM C109/C109M.
 - b. Flexural Strength: 600 psi at seven days, or 750 psi at 28 days when tested according to ASTM C348.

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Examine walls, floors, and other surfaces where waterproofing is to be applied with Applicator present, for compliance with requirements for surface preparation, cleaning, and other conditions affecting waterproofing performance.
 - 1. Proceed with application only after unsatisfactory conditions have been corrected.
 - 2. Begin waterproofing application only after unsatisfactory conditions have been corrected.
 - 3. Application of waterproofing indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Protect other work from fallout or overspray from modified cement waterproofing during application. Provide temporary enclosure to confine spraying operation, to prevent polluting the air, and to ensure adequate ambient temperatures and ventilation conditions for application.
- B. Stop active water leaks according to waterproofing manufacturer's written instructions.
- C. Schedule cleaning and surface preparation so dust and other contaminants from the cleaning and preparation process will not fall on wet, newly coated surfaces.
- D. Surface Preparation of Concrete Masonry: Comply with waterproofing manufacturer's written instructions and requirements indicated below to ensure that waterproofing bonds to concrete masonry surfaces. Clean masonry surfaces according to

ASTMD4261 by using one or a combination of procedures as needed to effectively remove efflorescence, chalk, dust, dirt, mortar spatter, grease, oils, curing compounds, and form-release agents.

1. Prepare lightweight concrete masonry unit surfaces by etching with 10 percent muriatic (hydrochloric) acid solution or abrade surface by wire brushing.
 - a. If acid etching is used, remove acid residue by thoroughly flushing surface with potable water until pH readings of water after rinse are not more than 1.0 pH lower or 2.0 pH higher than pH of water before rinse.
 - b. If wire brushing is used, remove dust and loose particles.
 2. Prepare medium- and normal-weight concrete masonry unit surfaces by sandblasting or bushhammering to a depth of 1/16 inch . Finish by cleaning according to ASTMD4261.
- E. Surface Preparation of Concrete: Comply with waterproofing manufacturer's written instructions and requirements indicated below to ensure that waterproofing bonds to concrete surfaces. Clean concrete surfaces according to ASTMD4258 by using one or a combination of procedures as needed to effectively remove efflorescence, chalk, dust, dirt, mortar spatter, grease, oils, curing compounds, and form-release agents.
1. Prepare scratch- and float-finished concrete by etching with 10 percent muriatic (hydrochloric) acid solution according to ASTMD4260.
 2. Prepare smooth-formed and trowel-finished concrete by mechanical abrading or abrasive-blast cleaning according to ASTMD4259.
 3. Concrete Joints: Clean reveals according to waterproofing manufacturer's written instructions.

3.3 APPLICATION

- A. General: Comply with waterproofing manufacturer's written instructions, unless more stringent requirements are indicated.
- B. Mix waterproofing components according to waterproofing manufacturer's written instructions.
- C. Protect all adjacent surfaces. Dampen wall surface with water before applying waterproofing.
- D. Apply waterproofing to exterior, below-grade walls according to waterproofing manufacturer's written instructions.
- E. Apply waterproofing to interior, below-grade walls according to waterproofing manufacturer's written instructions.
- F. Apply waterproofing coating evenly and fill voids and pores of substrate with waterproofing slurry. Keep tools clean and free from build-up.
- G. Apply the number of coats at the rates recommended by the manufacturer for each coat. After allowing previous coat to cure, dampen the wall before applying additional coats.
- H. Mist-cure waterproofing for two to three days immediately after application as recommended by the manufacturer.
- I. Wet-cure waterproofing when temperatures are above 85 degF , relative humidity is below 30 percent, wind speed exceeds 15 mph, or waterproofing is exposed to direct sunlight for 72 hours after placement.
- J. Waterproofing Treatment Extensions: Apply treatment to columns that are integral with walls to be treated, and extend treatment onto interior, nontreated walls that intersect exterior, treated walls, for a distance of 24 inches for cast-in-place concrete and 48 inches for masonry. Where floors (but not walls) are treated, extend treatment 12 inches high onto exterior walls and onto both exterior and interior columns. Unless otherwise indicated, extend treatment to every surface of substrate in area indicated for

treatment, including stair treads and risers, pipe trenches, pipe chases, pits, sumps, and similar offsets and features.

3.4 PROTECTION

- A. Protect applied modified cement waterproofing from rapid drying, severe weather exposure, and water accumulation. Maintain completed Work in moist condition for not less than seven days by covering with impervious sheeting or by other curing procedures recommended by waterproofing manufacturer.

END OF SECTION 07161