ECI
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Cost-Effective Environmentally Advanced Solutions

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4EVERCRETE & IMPENECRETE Specification

PART 1- GENERAL

1.01 SUMMARY

A. Furnish all labor, materials, equipment and incidentals required to provide proper installation of 4EVERCRETE.
B. The owner shall provide temporary electric service and potable water at no cost to Contractor/Applicator when available at the site.

1.02 REFERENCE STANDARDS

A. 4EVERCRETE meets or exceeds the following standards:
- ASTM C-67-7: Water Absorption
- ASTM C-67-9: Suction
- ASTM C-67-10: Efflorescence
- ASTM C-67-13
- ASTM C-67-25
- ASTM C-67-29
- ASTM C-67-65: ORF Method, Dusting Resistance
- ASTM C-23-69: Artificial Weathering
- ASTM C-114: Water Soluble Chloride Ion
- ASTM C-140: Water Repellency Rating
- ASTM C-156: Water Retention
- ASTM C-309: Class A Curing Compound
- ASTM C-514: Permeability
- ASTM C-518: Thermal Conductivity-Thermal Resistance
- ASTM C-672-760: Scaling Resistance to Deicers
- ASTM C-666: Freeze Thaw Resistance
- ASTM C-856: Petrographic Analysis
- ASTM C-1664: Non-Volatility
- ASTM D-327: Sulfate Durability
- ASTM D-2047: Slip Resistance
- ASTM D-4541: Adhesion "Bond" Test
- ASTM D-5084: Hydraulic Conductivity (Permeability Test)
- ASTM E-96: Moisture Vapor Transmission
- ASSHTO T259-80: Chloride Ion Penetration
- ASSHTO T260: Chloride Ion Content
- DIN-1048: Water Penetration
- CRD C48-73: Hydrostatic Pressure Resistance
- CRD C52-54: Abrasion Resistance
- NCHRP 244: Reduction of Chloride Penetration
- NCHRP 244-Series IV: Moisture Vapor Transmission
- USDA Approved For Use In Food Processing Areas
- EPA Compliant

1.03 SUBMITTALS

A. Product data: Within 30 calendar days after the Contractor or Applicator (if separate contract) has received the Owner's Notice to Proceed, submit:
    1. Materials list of items proposed to be provided under this Section.
    2. Manufacturer's current specifications and other data needed to prove compliance with the specified requirements.
    3. Manufacturer's recommended installation procedures which, when approved by the Engineer, will become the basis for accepting or rejecting actual installation procedures used on the work.
B. Any test data or reports required under this Section.

1.04 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
B. If ECI is not installing the product, use a Certified Applicator currently approved in writing by the product Manufacturer.
C. Cooperate as required in performance of the specified testing and inspecting.
D. Application of product shall conform to Manufacturers written specifications.
E. The Engineer may select an area for testing product application and observing applicator procedures for conformance with this section and the Manufacturers specifications.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in the original manufacture's sealed containers to location on site approved by Owner.
B. Store materials in such a way as to prevent damage to containers or product and protect from freezing temperatures.
C. Containers shall be kept tightly sealed until product is applied.

1.06 WARRANTY REQUIREMENTS

A. Environmental Coatings (Manufacturer) warrants that if any goods supplied prove defective in workmanship or material, that Manufacturer shall replace them or refund their purchase price. The terms of this paragraph may not be orally modified. There are no warranties expressed or implied extended beyond the face herewith.

PART 2 – PRODUCTS

2.01 4EVERCRETE

A. Where indicated on the Drawings, and/or where specified herein for concrete waterproofing & vapor barrier, provide the following product manufactured by **Environmental Coatings**, Montclair, New Jersey. **(No Substitutions)**
    1. 4EVERCRETE is a milky white (cures clear), water borne, environmentally neutral solution that provides superior concrete waterproofing, vapor restriction and sealing.
    2. Water shall be potable water only.

2.02 IMPENECRETE

A. Where indicated on the Drawings, and/or where specified herein for concrete sealing and for complete vapor barrier system, provide the following product manufactured by **Environmental Coatings**, Montclair, New Jersey. **(No Substitutions)**
    1. IMPENECRETE is a milky white (cures clear), water borne, environmentally neutral solution that provides superior concrete water vapor restriction and sealing.

2.03 Crack Repair & Joint Sealant

A. Where indicated on the Drawings, and/or where specified herein for concrete crack and joint sealing, provide the following product manufactured by **Dow Corning Corporation**, Auburn, Michigan or EQUAL/SUPERIOR product.
    1. Dow Corning® 790 Silicone Building Sealant is an ultra-low-modulus sealant for new and remedial construction joint sealing applications

2.04 OTHER MATERIALS

A. Provide other materials, not specifically described in this Section, but required for completing the work, where specified by the Engineer.

PART 3 – EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

B. Surface, air and material shall not be lower than 40°F during application. Do not apply when temperature is expected to fall below 40°F within 6 hours. Or if the temperature exceeds 90ºF the surface needs to be dampened prior to application.

C. Weather should be clear, with moderate breeze. There shall be no precipitation during application or expected for 4 at least hours following.

D. The Contractor or Applicator shall provide protection for any glass or aluminum to avoid over spray. In event of over spraying occurs, remove the over spray promptly with water to guard against potential etching of glass and/or dulling of aluminum.

E. The Contractor or Applicator shall examine the areas and conditions under which work of this section will be performed for conformance with Manufacturer Specifications. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

F. **CRACKS/JOINTS**: Cracks and joints of significant width (>⅛”) on the slab shall be routed to a width of at least ¼” and a depth to be three (3) times the width. **Note: Depth of cut should be no greater than 25% of the slab thickness (e.g., no deeper than 1” in a 4” slab).** After cracks are routed, install 4EVERCRETE & IMPENECRETE as indicated in the installation instructions below. Once installation of 4EVERCRETE/IMPENECRETE system is complete, install backer rod (size at least 25% larger than width of crack/joint) into crack/joint and caulk over with Dow Corning 790. **For cracks or vertical joints on walls, please consult Environmental Coatings directly for further recommendations.**

G. **COLD JOINTS**: For horizontal cold joints (between walls and floor), the following steps should be taken **after the application of 4EVERCRETE/IMPENECRETE system is completed**:

1. Tape off to ¼" of either side of cold joint to prepare clean lines for the expected ½" joint.
2. Apply a layer of bond breaker at the center of the cold joint. This should be approximately ⅛" wide. ECI recommends using a grease pencil (e.g., "Sharpie PEEL-OFF China Marker") as a bond breaker.
3. Following the application of the bond breaker, apply the Dow Corning 790 silicone caulk over the cold joint. Allow enough caulk for the ½" joint.
4. Tool the caulking to an even finish and immediately remove tape after tooling is completed.

3.02 INSTALLATION

A. On new and exisitng concrete floors or other approved vertical masonry surfaces, no additional surface preparation is required. Any existing coatings must be removed from concrete or block prior to installation. Any grinding or power-washing prep work must be done prior to installation.

1. Exterior walls -Cover landscaping in adjacent areas during application.
2. Mask off all adjacent glass and metal surfaces.
3. Where the concrete slab is being sprayed, make sure to mask wall finishes with plastic.

B. Installation of 4EVERCRETE requires using a high pressure (approximately 1700-2000 psi) atomizing paint sprayer equipped with fan spray tip size .517. 4EVERCRETE is applied to the point of saturation (the point where runoff is about to occur), but at a rate not to exceed 150 square feet per U.S. gallon.

Hold spray tip approximately 6" from concrete surface – an extension wand may be used for a more ergonomic installation. Make application starting from East to West in a 200-250 square foot section at a rate of 200-250 square feet per gallon. Then, in the same section, make application from North to South also at a rate of 200-250 square feet per gallon. This will give you a virtual coverage rate of 100-125 square feet per gallon and maximize the penetration that the product will get into the capillary system of the concrete. Repeat in 200-250 square foot sections as necessary until entire desired surface area is covered. Entire area being treated must be saturated with the atomized spray and with no holidays. Make sure that any areas showing signs of ponding of the 4EVERCRETE are blown, push-broomed or squeegeed to other areas until the 4EVERCRETE is absorbed into the concrete. **DO NOT LEAVE PUDDLES ON THE SURFACE.**

For vertical surfaces the process is the same as above, except you start from the **Bottom** of the wall and work your way **Up**. This is to avoid putting unnecessary strain on the product with gravity and to ensure the wall is properly sealed. Do not exceed 150 square feet per gallon in coverage.

C. Allow a minimum of twenty-four to forty-eight (24-48) hours for any contaminants and salts (at low levels) to be purged from the concrete slab or block interior. After, clean any contaminants off the surface. Wait an additional 24 hours and observe the surface for more purged contaminants. If more contaminants are present on the surface of the concrete slab or block, re-clean and wait an additional 24 hours before any surface sealer is applied. Repeat the cleaning as necessary. If water vapor drive is an issue, seal the surface with IMPENECRETE.

NOTE: In the case of extremely high levels of contamination and salts the **minimum** time to allow for purging of salts & contaminants is forty-eight to seventy-two (48-72) hours; however, it may take longer for contaminants to purge and this process of purging must be monitored on a daily basis to determine when the slab is ready for additional coatings. After cleaning the surface to remove the initial purged contaminants, a minimum of twenty-four (24) hours must be allowed to ensure no more contaminants have been purged to the surface and the concrete is completely dry. If more salts are present on the surface, then the slab should be re-cleaned using an auto scrubber, and an additional twenty-four (24) hours must be allowed to ensure no more contaminants have been purged and the concrete is completely dry. Repeat this process as necessary. **Make sure the slab is dry and no salts/contaminants remain on the surface prior to applying the IMPENECRETE seal coat or any epoxy or urethane floor coating.**

D. Any holidays observed after initial application of product shall be sprayed immediately with overlap.

E. Apply IMPENECRETE with a ⅜" roller at a rate not to exceed 200 square feet per gallon using an overlapping motion to ensure maximum penetration and complete coverage. Roll until product is absorbed into concrete. **DO NOT LEAVE PUDDLES ON THE SURFACE.**

F. Clean equipment with potable water and mild soap.

G. Topical materials shall be installed in conformance with specific manufacturer's requirements.

H. Upon completion of work, remove containers, trash, and debris caused by work under this section.