SECTION 071900 - WATER REPELLENTS

Review section with the Team Leader for editing instructions if to be applied to materials other than those listed.

Be aware that these materials can contribute to spalling by trapping moisture in masonry which then freezes and expands.

1. GENERAL
   * + 1. RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

* + - * 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
      1. SUMMARY
         1. Section includes water-repellent treatments for the following vertical and horizontal surfaces:

Cast-in-place concrete.

Concrete unit masonry.

Clay brick masonry, common and face.

* + - 1. PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" paragraph below if Work of this Section is extensive or complex enough to justify a conference.

* + - * 1. Preinstallation Conference: Conduct conference at Project site.
      1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of product.

Include manufacturer's printed statement of VOC content.

Include manufacturer's standard colors.

Include manufacturer's recommended number of coats for each type of substrate and spreading rate for each separate coat.

* + - * 1. Samples: For each type**[ and color]** of water repellent and substrate indicated, 12 by 12 inches in size, with specified water-repellent treatment applied to half of each Sample.
        2. Quality Control Submittals:

Product Certificates: For each type of water repellent.

Laboratory Test Reports: For water-repellent-treated substrates.

* + - * 1. Sample Warranty: For special warranty.
      1. QUALITY ASSURANCE
         1. Applicator Qualifications: An employer of workers trained and approved by manufacturer.
         2. Mockups: Prepare mockups of each required water repellent on each type of substrate required to demonstrate aesthetic effects, and to set quality standards for materials and execution.

Locate mockups in locations that enable viewing under same conditions as the completed Work.

Size: 100 sq. ft. each.

Notify the Director’s Representative in writing 5 days in advance of the proposed dates and time for the sample application.

After curing of the sample application, conduct water spray test to verify that the treatment repels moisture.

Do not proceed with the Work until the sample application has been approved by the Director’s Representative in writing.

Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Director’s Representative specifically approves such deviations in writing.

Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

Use below for major projects only.

* + - * 1. Company Field Advisor: Make arrangements for a field advisor of the water repellent material manufacturer to be present at the site at the beginning of the Work of this Section to instruct and supervise workers in proper preparation and application methods. The company field advisor shall be an employee certified in writing by the water repellent manufacturer to be technically qualified in preparation and application of the required products. Personnel involved solely in sales do not qualify. The field advisor is not authorized to modify the requirements of this Section without written authorization from the Director’s Representative.
      1. FIELD CONDITIONS
         1. Limitations: Proceed with application only when the following existing and forecasted weather and substrate conditions permit water repellents to be applied according to manufacturers' written instructions and warranty requirements:

Concrete surfaces and mortar have cured for not less than 28 days.

Building has been closed in for not less than 30 days before treating wall assemblies.

Ambient temperature is above 40 deg F and below 100 deg F and will remain so for 24 hours.

Substrate is not frozen and substrate-surface temperature is above 40 deg F and below 100 Deg F.

Rain or snow is not predicted within 24 hours.

Not less than **[24 hours] [seven days]** have passed since surfaces were last wet.

Windy conditions do not exist that might cause water repellent to be blown onto vegetation or surfaces not intended to be treated.

* + - 1. WARRANTY

When warranties are required, verify with Director’s Representative counsel that warranties stated in this article are not less than remedies available to Director’s Representative under prevailing local laws.

* + - * 1. Special Warranty: Manufacturer's standard form in which **[manufacturer] [and] [Applicator]** agree(s) to repair or replace materials that fail to maintain water repellency specified in "Performance Requirements" Article within specified warranty period.

Verify available warranties and warranty periods for water repellents.

Warranty Period: **[Two] [Five] <Insert number>** years from date of Substantial Completion.

* + - * 1. Warranty Extension: The one year period required by Paragraph 9.8 of the General Conditions is extended to 2 years for the Work of this Section. Refer to Supplementary Conditions.

1. PRODUCTS
   * + 1. Manufacturers
          1. Master Builders Solutions, www.master-builders-solutions.com
          2. Chemical Products Industries, Inc., www.chemicalproductsokc.com
          3. Chemprobe Masonry Coatings, a Division of Tnemec Co., Inc., www.tnemec.com
          4. Evonik Industries, www.protectosil.com
          5. Pecora Corporation, www.pecora.com
          6. PROSOCO, Inc., www.prosoco.com
          7. Approved equivalent.
       2. PENETRATING WATER REPELLENTS
          1. Product Description: A non-toxic, breathable, clear water repellent intended for single-coat application, that, after cure, leaves no visible surface residue, color, or gloss. Silicone or acrylic based materials are not acceptable.

Use Type 1 for vertical surface treatment of common and face brick, normal weight concrete masonry units, and smooth faced cast-in-place concrete

Type 1 Water Repellent:

Dur A Pell 40/Series 664 by Chemprobe Masonry Coatings/Tnemec.

Dur A Pell 100/Series 665 by Chemprobe Masonry Systems/Tnemec.

MasterProtect H 440VT by Master Builders Solutions.

Protectosil Chem-Trete PB VOC, by Evonik Industries.

SL100 by PROSOCO, Inc.

Approved equivalent.

Use Type 2 for horizontal (traffic bearing) surface treatment of cast-in-place concrete.

Type 2 Water Repellent: Minimum of 25 percent solids (by weight);

Protectosil BHN by Evonik Industries.

Protectosil Chem-Trete 40 VOC by Evonik Industries.

MasterProtect H 1000 by Master Builders Solutions.

MasterProtect H 1001 by Master Builders Solutions.

KlereSeal 9100-S by Pecora Corp.

KlereSeal 940-S VOC by Pecora Corp.

SW-244-40 VOC by Chemical Products Industries, Inc.

Approved equivalent.

Use Type 3 for vertical treatment of rough textured faces of cast-in-place concrete and light weight concrete masonry units.

Type 3 Water Repellent: Minimum of 25 percent solids (by weight);

Protectosil Chem-Trete 40 VOC by Evonik Industries.

MasterProtect H 440VT by Master Builders Solutions.

Dur A Pell 40/Series 664 by Chemprobe Masonry Coatings/Tnemec.

Dur A Pell 100/Series 665 by Chemprobe Masonry Systems/Tnemec.

Approved equivalent.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements and conditions affecting performance of the Work.

Verify that surfaces are clean and dry according to water-repellent manufacturer's requirements. Check moisture content in **[three] <Insert number>** representative locations by method recommended by manufacturer.

Verify that there is no efflorescence or other removable residues that would be trapped beneath the application of water repellent.

Verify that required repairs are complete, cured, and dry before applying water repellent.

Retain first paragraph below for silanes or siloxanes.

* + - * 1. Test pH level according to water-repellent manufacturer's written instructions to ensure chemical bond to silica-containing or siliceous minerals.
        2. Proceed with installation only after unsatisfactory conditions have been corrected.
      1. PREPARATION
         1. New Construction and Repairs: Allow concrete and other cementitious materials to age before application of water repellent, according to repellent manufacturer's written instructions.
         2. Cleaning: Before application of water repellent, clean substrate of substances that could impair penetration or performance of product according to water-repellent manufacturer's written instructions. Allow prepared surfaces to dry thoroughly.
         3. Protect adjoining work, including mortar and sealant bond surfaces, from spillage or blow-over of water repellent. Cover adjoining and nearby surfaces of aluminum and glass if there is the possibility of water repellent being deposited on surfaces. Cover live vegetation.

Generally, retain "Coordination with Mortar Joints" paragraph below if Project includes pointing joints with mortar.

* + - * 1. Coordination with Mortar Joints: Do not apply water repellent until pointing mortar for joints adjacent to surfaces receiving water-repellent treatment has been installed and cured.
        2. Coordination with Sealant Joints: Do not apply water repellent until sealants for joints adjacent to surfaces receiving water-repellent treatment have been installed and cured.

Water-repellent work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, water repellent, and sealant materials identical to those required.

* + - 1. APPLICATION
         1. Apply coating of water repellent on surfaces to be treated using 15 psi-pressure spray with a fan-type spray nozzle to the point of saturation. Apply coating in dual passes of uniform, overlapping strokes. Remove excess material; do not allow material to puddle beyond saturation. Comply with manufacturer's written instructions for application procedure and the approved field example.
      2. FIELD QUALITY CONTROL
         1. Coverage Test: In the presence of Director’s Representative, hose down a dry, repellent-treated surface to verify complete and uniform product application. A change in surface color will indicate incomplete application.

Notify Director’s Representative **[seven] <Insert number>** days in advance of the dates and times when surfaces will be tested.

Reapply water repellent until coverage test indicates complete coverage.

* + - 1. CLEANING
         1. Immediately clean water repellent from adjoining surfaces and surfaces soiled or damaged by water-repellent application as work progresses. Correct damage to work of other trades caused by water-repellent application, as approved by Director’s Representative.
         2. Comply with manufacturer's written cleaning instructions.

END OF SECTION 071900