SECTION 07190
WATER REPELLENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Exterior water repellent coatings for:
   a. Concrete Unit Masonry.
   3. Extended written warranty.

B. **Related Items:**
1. Admixture for concrete block units: Refer to Section 04200

1.02 SUBMITTALS

A. Comply with Section 01300, unless otherwise indicated. Substitution requests must be submitted 14 days prior o bid date.

B. **Product Data: Manufacturer's** specifications and technical data including the following:
1. Detailed specification of construction and fabrication.
2. Manufacturer's installation instructions.
3. Certified test reports indicating compliance with performance requirements specified herein.

C. **Quality Control Submittals:**
1. Statement of qualifications.
2. Statement of compliance with Regulatory Requirements.
3. Field Quality Control Submittals as specified in Part 3.
4. Manufacturer's field reports.

1.03 QUALITY ASSURANCE

A. **Manufacturer's Qualification:** Not less than 5 years of experience in the actual production of specified products.

B. **Installer's Qualifications:** Firm experienced in installation or application of systems similar in complexity to those required for this Project, plus the following:
1. Acceptable to or licensed by manufacturer.
2. Not less than 3 years of experience with systems.
3. Successfully completed not less than 5 comparable scale projects using this system.

C. **Product Qualifications:**
1. Comply with the provisions of the following standards for concrete masonry.
   a. No change in surface texture, no blotchy appearance
   b. ASTM E514 "Water Permeance of Masonry"
      - 100% reduction in leakage rate over the control wall
      - Control wall must have a leakage rate of at least 6.0 liters/hours
   c. ASTM C140 "Concrete Masonry Units" 24 hours water soak
      - 99.6% reduction in water absorption
      - Control should absorb at least 5% water
   d. Penetration - 0.25 inches average

D. **Regulatory Requirements:** Products shall comply with State and local regulations concerning AIM (Architectural, Industrial and Maintenance) coatings regarding Volatile Organic Content (VOC).
1. The use of 1,1,1 trichloroethane shall not be allowed.

1.04 DELIVERY STORAGE AND HANDLING

A. Packing and Shipping: Deliver products in original unopened packaging with legible manufacturer's identification.

B. Storage and Protection: Comply with manufacturer's recommendations.

1.05 PROJECT CONDITIONS

A. Environmental Requirements:
   1. Maintain ambient temperature above 20 degrees F during and 24 hours after installation.
   2. Do not proceed with application on materials if ice or frost is covering the substrate.
   3. Do not proceed with application if ambient temperature of surface exceeds 100 degrees F.
   4. Do not proceed with the application of materials in rainy conditions or if heavy rain is anticipated with 4 hours after application.

B. Sealer Coordination:
   1. Verify compatibility with curing compounds, patching materials, repair mortar, paints, sealants, etc. to be used on masonry surfaces to ensure compatibility with the water repellent.

1.06 SPECIAL WARRANTIES

A. Manufacturer shall stand behind installed system for period of (5 or 10) years from Date of Substantial Completion against all the conditions indicated below. When notified in writing from Owner, Manufacturer shall, promptly and without inconvenience and cost to Owner correct said deficiencies.
   1. Loss of water repellency:
      a. Concrete Masonry: 1.0 ml/20 minutes or greater (60 mph wind driven rain equivalent).

PART 2 - PRODUCTS

2.01 MATERIALS

A. Acceptable manufacturers and products for Concrete Masonry, minimum 100% solids:

   1. Protectosil® CHEM-TRETE PB 100 Evonik 1-800-828-0919.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions that may be detrimental to proper or timely completion.
   1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Protection: Install coverings to protect adjacent surfaces.

B. Surface Preparation:
   1. Verify masonry joints found to be unsound, hollow, or otherwise defective, have been raked out to a depth of 1/2 inch and pointed with mortar.
   2. Verify cracks that exceed 1/64 inches wide have been filled with pointing mortar.
   3. All repointing must be completed and allowed to cure.
   4. Remove dirt, dust and materials that will interfere with the proper and effective application of the penetrating sealer. It is the responsibility of the Contractor to prepare the surfaces of the concrete as recommended by the Water Repellent Manufacturer and acceptable to the Engineer.
   5. Sealants, patching materials, and expansion joints shall have been installed and approved by the Engineer.

3.03 FIELD QUALITY CONTROL

A. Spray Test: After water repellent has dried, spray coated surfaces with water.
   1. After surfaces have adequately dried, recoat surfaces that show water absorption.

B. Manufacturer's Field Services:
   1. Furnish written certification that surface preparation method and final condition has manufacturer's approval and comply with the warranty.
   2. Test area: Furnish results of test area absorption on each type of substrate. Test results shall determine application rate.

C. Test Area:
   1. Before a sealer application the following field evaluation will be done. The cost of the field testing will be the responsibility of the Water Repellent Manufacturer.
   2. Prepare a three feet by three feet area to be sprayed with the water repellent. The area will be determined by the Owner. Apply the water repellent at a rate of 80 square foot/gallon. To produce a 6 to 8 inches rundown below the spray pattern.
   3. Allow five days for the sample to cure run a RILEM uptake test on the treated area. Place one tube on the brick and one tube on a mortar joint. Owner must be present for the application of the water repellent and the test.
   4. Acceptable minimum results are as stated in the warranty provisions. Coverage rate used to pass this test section must be used on entire project.

3.04 APPLICATION

A. Product shall be applied as supplied by the manufacturer without dilution or alteration.

B. Apply with a low-pressure (15 psi) airless spray equipment with a fan spray coarse nozzle, flooding the surface to obtain uniform coverage unless otherwise recommended by the manufacturer.

C. Apply at a rate of not less than 80 square foot/gallon unless the field tests (as outlined in 3.03) determine that a heavier rate of application is necessary to meet the performance requirements.

D. Apply at temperature and weather conditions recommended by the manufacturer or written in this specification.

E. Follow manufacturers' recommendations concerning protection of glass, metal and other non-porous substrates. Contractor will be responsible to clean all surfaces that are contaminated by the water repellent.

F. Follow manufacturer's recommendation concerning protection of plants, grass and other vegetation. Contractor will be responsible for replacing all plants, grass or vegetation damaged by the water repellent.

G. Apply water repellent by brush only at locations where overspray would affect adjacent materials and where not practicable for spray application.

3.04 CLEANING

A. While Work Progresses: Clean spillage and overspray from adjacent surfaces using materials and methods as recommended by water repellent manufacturer.

B. Remove protective coverings from adjacent surfaces when no longer needed.

3.06 COMPLETION

A. Work that does not conform to specified requirements shall be corrected and/or replaced as directed by the Owners Representative at contractor's expense without extension of time.

END OF SECTION