

SECTION 07190
WATER REPELLENTS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section describes the requirements for furnishing and installing fluid-applied water-repellent coating on exterior brick veneer, cast-in-place concrete surfaces and precast concrete parapet caps where graffiti-resistant coatings are not required.
- B. Related Sections:
 - 1. Precast concrete specialties are specified in Section 03480.
 - 2. Brick veneer is specified in Section 04212.
 - 3. Graffiti-resistant coatings are specified in Section 09965.

1.02 SUBMITTALS

- A. Product Data: Manufacturer's specifications, surface preparation and application instructions, recommendations for water repellents for each surface specified, and protection and cleaning instructions. Include data substantiating that materials are recommended by manufacturer for applications indicated and comply with specified requirements.
- B. Samples: 16-inch square samples of each substrate to receive water-repellent, with water-repellent applied to half of each sample.
- C. Certification by water repellent manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOC).
- D. Field Sample:
 - 1. Install at a pre-selected area of the building an area for field sample as directed by the Architect.
 - a. Provide mock-up of at least 25-square feet to include surface preparation, sealant joint, and juncture details and allow for evaluation of repellent performance and finish.
 - b. Apply materials in accordance with manufacturer's written instructions.
 - 2. Manufacturer's representative or designated representative shall review technical aspects including surface preparation, application and performance.
 - 3. Field sample shall be the standard for judging workmanship on remainder of the Project.
 - 4. Maintain field sample during construction for workmanship comparison.
 - 5. Do not alter, move, or destroy field sample until directed by the Architect.
 - 6. Obtain Architect's written approval of field sample before start of material application, including approval of aesthetics, color, texture, and appearance.

1.03 QUALITY ASSURANCE

- A. Manufacturer shall have a minimum 15-years experience in manufacturing water repellent coatings.
- B. Installation shall be by an applicator with not less than 5-years experience in application of water-repellents of types specified on Projects of similar size and scope and be acceptable to the manufacturer.
- C. The water-repellent shall not darken, stain, or discolor substrate surfaces. The product shall not change the reflectivity of the surface by having a sheen or a gloss when dry.
- D. Materials shall comply with applicable statutory health and environmental requirements, including VOC limits.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Comply with manufacturer's instructions and lead-time requirements to avoid delays.
- B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Store in unopened containers in a cool, dry area. Keep material from freezing in the container; do not store below 35-deg. F. or above 100-deg. F.

1.05 PROJECT CONDITIONS

- A. Weather and Substrate Conditions: Do not proceed with application of water repellent under any of the following conditions:
 - 1. Ambient temperature is less than 40-deg. F.
 - 2. Substrate surfaces have cured for less than one month.
 - 3. Rain or temperatures below 40-deg. F. are predicted for a period of 12-hours.
 - 4. Earlier than 24-hours after surfaces became wet.
 - 5. Surface temperature is less than 40-deg. F.
 - 6. Windy conditions such that water repellent may be blown to vegetation or substrates not intended to be coated.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Water-Repellent Coating over Precast Concrete and Dense Stone Surfaces: Degussa Building Systems "Aqua-Trete BSM 20", Enviroseal 20 or approved equal 20-percent silane solution.
 - 1. Water repellent material shall have the following minimum performance:
 - a. Flash Point: >200-deg. F., ASTM D3278.
 - b. VOC Content: <300 g/L, EPA Method 24.
 - c. Water Repellency Test (21 day submersion): 75-percent reduction in weight gain, ASTM C642.
 - d. Water Absorption (48-hours): 0.53-percent, ASTM C642..
 - e. Resistance to Chloride Ion Penetration, AASHTO T259 and T260:
 - 1) Criteria of 1.5 at ½-inch: <0.27-lb/cy.
 - 2) Criteria of 0.75 at 1-inch: 0.00-lb/cy.
 - f. Water Weight Gain: 86-percent reduction.
 - g. Absorbed Chloride: 92-percent reduction.
- B. Water-Repellent Coating over Brick and Porous Stone Surfaces: Degussa Building Systems "Hydrozo Enviroseal Double 7 for Brick", "Aqua-Trete Concentrate" or approved equal water-based clear silane.

1. Water repellent material shall have the following minimum performance:
 - a. Solids and Active Ingredients: 12-percent by weight.
 - b. VOC Content: <250 g/l.
 - c. Penetration: 1/16- to 3/8-inch average depth depending upon substrate.
 - d. Flash Point: >212-deg. F., ASTM D3278.
 - e. Leakage on Brick Wall: >94.8-percent reduction, ASTM E514.
 - f. Moisture Vapor Transmission Rate at 75-deg. F.:
 - 1) 49.8-g/sq. ft./24-hours.
 - 2) 86-percent of untreated substrate.
 - g. Accelerated Weathering, 1,500-hours: No change.
- C. Application Equipment: Low-pressure airless sprayer and hoses as recommended by water-repellent coating manufacturer.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Prior to execution of work, meet with the water-repellent manufacturer's technical representative and the Owner's Representative and inspect the surfaces to be treated and conditions under which the water-repellent coatings will be applied.
- B. The manufacturer's representative shall be present during the preparation and testing phase of the application and periodically during installation.

3.02 PREPARATION

- A. Surfaces shall be clean, structurally sound, and fully cured. Remove dust, dirt, paint, bitumens, efflorescence, oil, pollution deposits and curing, forming and parting compounds. Use abrasive blast as required to achieve the required surface condition.
- B. Complete caulking, pointing, and restoration work before applying water repellent. Allow to cure.
- C. Treat and remove alkali and efflorescence with proper neutralizing compound recommended by manufacturer.
- D. Protect plant life and surfaces to remain uncoated during application. Use drop cloths or masking as required.
- E. Using cardboard template, temporarily cover windows during application of water repellent.
- F. Mix concentrated products with water in accordance with manufacturer's recommendations based on substrates to be treated and the performance level required.

3.03 INSTALLATION

- A. Apply by low-pressure, non-atomizing spray.
- B. Flood vertical surfaces to saturation by applying from the bottom up with a controlled 8- to 12-inch material rundown to ensure maximum penetration into the substrate.
- C. For horizontal surfaces, apply to saturation. If required, follow by squeegee or broom to eliminate ponding.

3.04 CLEANING

- A. Clean spillage and overspray from adjoining surfaces. Comply with manufacturer's recommendations for cleaning.
- B. Wipe windows with dampened cloth or sponge immediately following application.
- C. Remove temporary coverings and protection from adjacent work areas.

END OF SECTION