

## SECTION 07180

WATER-REPELLENT SEALER FOR MASONRY  
10/01

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 67	(1994) Sampling and Testing Brick and Structural Clay Tile
ASTM C 156	(1995) Water Retention by Concrete Curing Materials
ASTM C 309	(1995) Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 666	(1992) Resistance of Concrete to Rapid Freezing and Thawing
ASTM D 3278	(1989) Test Method for Flash Point of Liquids by Setaflash Closed-Cup Apparatus
ASTM E 96	(1990) Water Vapor Transmission of Materials
ASTM G 53	(1986) Accelerated Weathering and UV Stability

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

## SD-03 Product Data

Water Repellent Sealer;

Manufacturer's descriptive data including catalog cuts and Material Safety Data Sheets (MSDS). Descriptive data shall include complete technical characteristics, curing and drying times, and detailed mixing, thinning and application instructions.

## SD-04 Samples

Water Repellent Sealer;

One Liter sample of water repellent sealer specified herein. The sample containers shall include the same information on the label as specified herein for containers delivered to the job.

#### SD-07 Certificates

Volatile Organic Compound (VOC) Content;

Certificate stating that the water repellent materials proposed for uses conforms to the VOC restrictions of the local air pollution control district.

Qualifications of the Applicator;

Certification attesting that the applicator is approved by the manufacturer of the water repellent sealer shall be submitted to the Contracting Officer prior to commencement of the work of this section.

Qualifications of the Manufacturer;

Qualifications of the Manufacturer: Certification attesting that the firm experienced in manufacturing products similar to those indicated for this project and that has a record of successful in-service performance.

#### 1.3 PACKAGING, LABELING AND STORING

Sealers shall be in sealed containers that legibly show the designated name, quantity, date of manufacture, manufacturer's directions including any warnings and special precautions, and the name of manufacturer. Containers shall be stored in accordance with the manufacturer's written directions and as a minimum stored off the ground, under cover, with sufficient ventilation to prevent the buildup of flammable vapors at temperatures between 5 and 32 degrees C. Containers of sealer shall be kept from freezing at all times.

#### 1.4 WARRANTY

The manufacturer of the water repellent sealer shall guarantee that work under this section shall be free of defects in materials and workmanship for a period of 5 years from the date of final acceptance. Warranty shall provide for reapplication of the sealer system if water penetration occurs during the warranty period as a result of defective materials or workmanship from this section of work.

#### 1.5 ENVIRONMENTAL CONDITIONS

Surface, air, and material temperatures shall be 7 degrees C or higher during application. Do not apply water repellent sealer when temperatures are expected to fall below 7 degrees C within 12 hours, or if rain is expected within 4 hours of application. Sealer shall be applied only to surfaces that are completely free of surface moisture as determined by sight or touch. In no case shall sealer be applied when there is visible frost or ice.

PART 2 PRODUCTS

2.1 GENERAL

Water repellent sealer shall be a clear, water repellent solution designed to protect vertical concrete surfaces from water penetration. All exterior concrete masonry unit wall surfaces of the facility shall be treated with water repellent sealer unless otherwise specified.

2.1.1 Volatile Organic Compound (VOC) Content

Water repellent sealers shall comply with the applicable state and local laws enacted to insure compliance with Federal Clean Air Standards. Materials shall conform to the restrictions of the Feather River Air Pollution Control District.

2.2 WATER REPELLENT SEALER

Sealer shall be water-based, non-film forming, penetrating sealer. No mercuric, chromate, or lead compounds shall be permitted. Sealer shall meet the following minimum technical characteristics:

- a. Solids and Active Ingredients by Weight: . . . . . Approx. 5-12%
- b. Flash Point (ASTM D 3278): . . . . . Above 38 degrees C
- c. Penetration Depth (minimum): . . . . . 1.5 to 9.5 mm
- d. Volatile Organic Compound (VOC): . . . . . 400 g/l maximum
- e. Water Repellence Tests (ASTM C 67):. . . . . 85% minimum
- f. Loss of Moisture Performance (ASTM C 156 and ASTM C 309) at 24 Hours:. . . . . 0.433 k/meters squared
- g. Moisture Vapor Transmission Rate (ASTM E 96):. . . . . 82% minimum
- h. Accelerated Weathering and UV Stability (ASTM G 53):  
1000 hours. . . . . No loss in repellency
- i. Yellowing: . . . . . None
- j. Efflorescence: . . . . . Highly resistant
- k. Drying Time for Recoat (if necessary): . . . . . 1-4 Hours
- l. Surface Appearance after Application: . . . . . Minimum allowable change in gloss and color: 10%
- m. Resistance to Freeze Thaw (ASTM C 666)  
100 cycles: . . . . . 2.8% loss by weight

PART 3 EXECUTION

3.1 PROTECTION OF AREAS NOT TO BE TREATED

Surfaces not to be treated which are in contact with or adjacent to wall surfaces that are to receive water repellent treatment shall be removed or protected prior to surface preparation and sealing operations. Items removed prior to sealer application shall be replaced when application is completed. Surfaces contaminated by water repellent sealer materials shall be restored to original condition.

3.2 SURFACE PREPARATION

Surfaces to receive water repellent sealer shall be prepared in accordance with the manufacturer's written instructions and the following requirements:

3.2.1 Cleaning, Caulking, & Sealing

Surfaces to be sealed must be thoroughly dry, clean, and free from oil,

grease, tar, dirt, alkali, efflorescence, or other contaminants. Any apparent alkali or efflorescence shall be treated with a neutralizing compound. Caulking and sealant work must be done prior to the application and allowed 6-12 hours curing time before application is begun.

### 3.3 APPLICATION

Water repellent sealer shall only be applied by an applicator approved by the manufacturer, in strict accordance with the manufacturer's printed instructions. Surfaces that have been cleaned, pretreated, and otherwise prepared for sealing shall be sealed as soon as practicable after such pretreatment has been completed, but before any deterioration of the prepared surfaces. At the time of application, sealer shall show no signs of deterioration. The final appearance shall be free of film, runs, drops, ridges, waves, or other surface flaws.

#### 3.3.1 Manufacturer's Representative

An authorized representative of the manufacturer shall be notified a minimum of 48 hours in advance of the start of the application of the water repellent treatment, and shall be present during the initial application of the sealer, in order to meet warranty requirements. The manufacturer's representative, and a representative of the Contracting Officer shall approve surface preparation prior to application of the water repellent treatment sealer.

#### 3.3.2 Samples

A sample of the water repellent sealer shall be applied to a concrete masonry unit sample panel as required by SECTION 04200a MASONRY. When the sample panel has sufficiently dried, the approved applicator shall, in the presence of a representative of the Contracting Officer, take a 1 liter larger sealed, sample container and thoroughly mix and apply the sealer to the sample in accordance with the manufacturer's instructions. The approved sample panel will be used for quality control of the application of the water repellent sealer to the rest of the building.

#### 3.3.3 Coverage

Surfaces to be sealed shall be flooded with a minimum 100 mm runoff onto surfaces to assure maximum saturation into the substrate. Coverage shall be complete, and done so that the required penetration occurs uniformly over the wall surface. Special attention shall be given to insure that all edges, corners, and crevices receive an equivalent application to that of adjacent sealed surfaces. The coverage rate for water repellent sealer on concrete surfaces shall be in accordance with manufacturer's recommendations.

### 3.4 CLEANING

Cloths and other debris that might constitute a fire hazard shall be placed in closed metal containers and removed at the end of each day. Upon completion of the work, staging, scaffolding, and containers shall be removed from the site. Adjacent surfaces contaminated with sealer shall be properly cleaned and left in their original condition.

-- End of Section --