

## SECTION 07 19 00 Water Repellents

**Specifier Note:** This product guide specification is written according to the Construction Specifications Institute (CSI) 3-part format. The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building codes. Coordinate this section with other specification sections and the drawings. Delete all “Specifier Notes” when editing this section.

**Specifier Note:** This section covers StarSeal EF water repellent series. StarSeal EF [Weather Seal] [Weather Seal Plus] [Weather Seal 100] are silane based penetrating sealers which will penetrate deeper and impart a greater amount of reactive material into the surface providing greater protection than comparable silicone based products.

StarSeal EF [Weather Seal] [Weather Seal Plus] [Weather Seal 100] provides long term protection against salt corrosion, deicing chemicals, mildew, water, wind driven rain, airborne contaminants surface spalling from freeze/thaw cycles and other harsh weather conditions

**Specifier Note:** **StarSeal EF** products are high performance building materials that are dedicated to reducing their environmental foot print by improving the environmental performance of buildings, the air quality of its inhabitant’s and reducing the effects of volatile organic compounds (VOC’s) on the environment.

**Specifier Note:** This guide specification is provided as a start point for the design professional. Any modifications to the specification are the responsibility of the design professional. Contact Vexcon Chemicals with any questions regarding this product.

**Specifier Note:** The products in this section are not recommended for below grade application. Before editing this section, consult with Vexcon to obtain complete product information on the water repellent required for the project.

### PART 1 – GENERAL

#### 1.1 SUMMARY

A. This section specifies StarSeal EF water repellent protective material for new construction and major renovations applied to exterior [vertical] [and] [horizontal] {pre-cast concrete} [cast in place] [stucco] [brick] [stone] concrete and masonry surfaces.

**Specifier Note:** Edit the list of related sections as required for the project. List other sections dealing with the work directly related to this section.

## 1.2 RELATED SECTIONS

- A. 071916 - Silane Water Repellents
- B. 033000 - Cast In Place Concrete
- C. 034000 - Pre-Cast Concrete
- D. 042200 - Concrete Unit Masonry
- E. 044000 - Stone Assemblies

## 1.3 REFERENCES

### A. American Society for Testing Materials – ASTM

1. ASTM C 672 Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.
2. ASTM C 67 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
3. ASTM C 140 Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
4. ASTM D 5095 Standard Test Method for Determination of the Nonvolatile Content in Silanes used in Masonry Water Repellent Treatments

### B. National Cooperative Highway Research Program – NCHRP

1. NCHRP 244 Concrete Sealers for Protection of Bridge Structures.

### C. United State Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED)

1. New Construction and Major Renovations v2.2.

### D. United States Department of Environmental Protection (EPA)

1. Method 24 – Determination of Volatile Matter Content of Surface Coatings

## 1.4 SUBMITTALS

- A. Comply with section 013300 – Submittal Procedures
- B. Comply with section 013100 – Project Management and Coordination/LEED Submittals
  - 1. Obtain written certification from manufacturer on manufacturer's letterhead for all field applied sealants and coatings indicating compliance with LEED NC 2.2 EQ 4.1/4.2 Low Emitting Materials
    - a. The Volatile Organic Compound (VOC) content in grams/liter or lbs./gallon. per EPA method 24, compliance with South Coast Air Quality District (SCAQD) rule # 1113 dated June 2008, the environment label and the declaration requirements of ISO 14020 and ACT 15 of the Federal Trade Commission guide on use of environmental marketing claims.
  - 2. Provide documentation from manufacturer to validate compliance with LEED NC 2.2 MR 5.1/5.2 Regional Materials
  - 3. Provide documentation from manufacturer indicating contribution towards LEED NC 2.2 MR 2.1/2.2 Construction Waste Management.
- C. Manufactures product data sheet: Include manufacturer's specifications, surface preparation, special notes and application instructions.
- D. Manufactures material safety data sheet
- E. Test Data: Confirm compliance with specified requirements.
- F. Comply with section 017700 – Closeout Procedures

## 1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Specialize in manufacture of water repellent protective materials with a minimum of 10 years successful experience.
- B. Applicator shall have prior experience applying water repellent treatment.
- C. Regulatory Requirements: Products shall comply with federal, state and local VOC regulations.
- D. Product shall contribute to LEED NC 2.2 points.
- E. A test application is necessary on each surface to be treated to ensure compatibility and desired water repellency.
- F. If the material in the test area does not fully penetrate due to an existing coating or inadequately cleaned surface prepare surface in accordance with manufactures instructions.

G. If a tacky residue remains after 24 hrs, the application rate must be modified. Remove per manufacturers instructions.

H. Tests should be applied using the same equipment and techniques planned for job application.

I. Test areas should be available for inspection by the project engineer.

## 1.6 DELIVERY, STORAGE AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage: Store materials in clean, dry area in accordance with manufacturer's instructions. Keep containers sealed until ready for use.

C. Handling: Protect materials during handling and application to prevent damage or contamination.

D. Do not use materials beyond manufacturer's shelf life limits

## 1.7 PROJECT CONDITIONS

### A. Environmental Requirements

1. Do not apply water repellent treatment when surface temperatures are below 40°F
2. Do not apply water repellent treatment when surface temperatures are above 85°F
3. Do not apply water repellent treatment on windy days
4. Keep from freezing
5. Mix well before each use
6. Do not apply if rain is expected within 8 hours after application
7. Do not apply earlier than 24 hours after rain
8. Do not apply to frozen surfaces

## 1.8 SEQUENCING

- A. All caulking, patching and joint sealants should be installed and fully cured prior to application.
- B. Concrete should be fully cured.

## 1.9 WARRANTIES

- A. Provide manufacturers [5] [10] year warranty against loose of water repelling characteristics

## PART 2 – PRODUCTS

### 2.1 Acceptable Manufacturer

A. Vexcon Chemicals 7240 State Road Philadelphia PA 19135  
Toll Free Technical Assistance 888.Vexcon1, fax 215.332.997, website [www.vexcon.com](http://www.vexcon.com)  
email [sales@vexcon.com](mailto:sales@vexcon.com).

- B. Substitutions: Not permitted

### 2.2 Acceptable Material

**Specifier Note:** Refer to Vexcon Chemicals product data sheet or contact Vexcon to determine the appropriate water repellent treatment to be specified. Edit this list to include only those products to be included in the work.

A. Product: StarSeal EF Weather Seal

B. Description: Low VOC silane water repellent

C. Compliances:

1. US EPA method 24

a. VOC < 91 grams/liter or 0.76 #/gal

2. ASTM D 5095

a. Minimum solids 20%

3. Meets all state, federal and local VOC clean air regulations including South Coast Air Quality District (SCAQD) rule # 1113 dated June 2008

4. ASTM C 672: 75 freeze thaw cycles-Zero

5. ASTM C 67: Reduces water absorption by greater than 83%

6. ASTM C 140: Reduces water absorption by greater than 83%
7. NCHRP 244 series IV: Reduce water and salt penetration by minimum 76%
8. LEED NC 2.2 EQ 4.1

\*\*\*or\*\*\*

A. Product: StarSeal EF Weather Seal Plus

B. Description: Low VOC silane water repellent.

C. Compliances:

1. USEPA method 24
  - a. VOC < 89 grams/liter or 0.74 #/gal
2. ASTM D 5095
  - a. Minimum solids 40%
3. Meets all state, federal and local VOC clean air regulations including South Coast Air Quality District (SCAQD) rule # 1113 dated June 2008
4. ASTM C 672: 75 freeze thaw cycles-Zero
5. ASTM C 67: Reduces water absorption by greater than 84%
6. ASTM C 140: Reduces water absorption by greater than 84%
7. NCHRP 244 series IV: Reduce water and salt penetration by minimum 83%
8. LEED NC 2.2 EQ 4.1

\*\*\*or\*\*\*

A. Product: StarSeal EF Weather Seal 100

B. Description: Low VOC silane water repellent.

C. Compliances:

1. US EPA method 24
  - a. VOC < 138 grams/liter or 1.16 #/gal
2. ASTM D 5095
  - a. Minimum solids 100%

3. Meets all state, federal and local VOC clean air regulations
4. ASTM C 672: 75 freeze thaw cycles-Zero
5. ASTM C 67: Reduces water absorption by greater than 84%
6. ASTM C 140: Reduces water absorption by greater than 84%
7. NCHRP 244 series IV: Reduce water and salt penetration by minimum 90%
8. LEED NC 2.2 EQ 4.1

## PART 3 – EXECUTION

### 3.1 EXAMINATION

A. Verify by examination that the concrete and masonry surfaces are acceptable to receive the specified water repellent treatment. Notify project engineer in writing if surfaces are not acceptable to receive the specified product

### 3.2 PROTECTION

A. Adjoining glass, vegetation, metal and painted surfaces should be protected from over spray and splash. Inadvertent splashes should be removed following manufacturers instructions.

### 3.3 SURFACE PREPARATION

A. Prepare surface in accordance with manufacturer's written instructions. The use of compatible Vexcon surface prep and specialty cleaning products is recommended were required

### 3.4 APPLICATION

#### A. Horizontal Surfaces

1. Apply in accordance with manufactures written application instruction for horizontal surfaces.

#### B. Vertical Surfaces

1. Apply in accordance with manufactures written application instruction for vertical surfaces.

### 3.5 FIELD QUALITY CONTROL

- A. Inspection: Inspect final water repellent work and compare to test area. Determine if the treated surface are suitably protected.

END OF SECTION