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## Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat*, *SectionFormat*, and *PageFormat*, as described in *The Project Resource Manual—CSI Manual of Practice, Fifth Edition*.

This section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all “Specifier Notes” after editing this section.

Section numbers are from *MasterFormat 2010 Update*.

## SECTION 07 19 16

### SILANE WATER REPELLENTS

Specifier Notes: This section covers the following Nox-Crete Products Group water repellent silane sealers for the protection of horizontal concrete, including suspended concrete decks, slabs, and pavements, from the deleterious effects of water, deicing salts, and freeze/thaw-related scaling damage:

“Stifel GC”: Standard performance for horizontal surfaces.

“Stifel SC”: Maximum performance for horizontal surfaces.

Consult Nox-Crete Products Group for assistance in editing this section for the specific application.

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Silane water repellents.

##### 1.2 RELATED REQUIREMENTS

Specifier Notes: Edit the following list of related sections as required. Limit the list to sections with specific information that the reader might expect to find in this section, but is specified elsewhere.

- A. Section 03 30 00 – Cast-in-Place Concrete.
- B. Section 03 40 00 – Precast Concrete.

### **1.3 REFERENCE STANDARDS**

Specifier Notes: List standards referenced in this section, complete with designations and titles. Delete standards not included in the edited section. Including a standard here does not require compliance with that standard.

- A. ASTM C 672/C 672M – Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.
- B. NCHRP 244 – Condition Evaluation of Concrete Bridges Relative to Reinforcement Corrosion, Volume 5: Methods of Evaluating the Effectiveness of Penetrating Sealers.

### **1.4 SUBMITTALS**

Specifier Notes: Edit submittal requirements as required. Delete submittals not required.

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including surface preparation and application instructions.
- C. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- D. Manufacturer's Project References: Submit manufacturer's list of successfully completed silane water repellent projects, including project name and location, name of architect, and type and quantity of silane water repellents furnished.
- E. Warranty Documentation: Submit manufacturer's standard and extended warranties.

### **1.5 QUALITY ASSURANCE**

- A. Manufacturer's Qualifications: Manufacturer regularly engaged, for past 5 years, in manufacture of silane water repellents of similar type to that specified.

Specifier Notes: Edit site test application as required. Delete site test application if not required.

- B. Site Test Application: Construct site test application of silane water repellents for evaluation of surface preparation techniques and application workmanship.
  - 1. Construct site test application using same materials for use in the Work.

2. Construct site test application at locations determined by Architect.
3. Do not proceed until workmanship of site test application is approved by Architect.
4. Approved Site Test Application: Standard for workmanship of silane water repellents.

Specifier Notes: Edit preinstallation meeting as required. Delete meeting if not required.

C. Preinstallation Meeting:

1. Convene preinstallation meeting 2 weeks before start of application of silane water repellents.
2. Require attendance of parties directly affecting work of this section, including Contractor, Architect, applicator, and manufacturer's representative.
3. Review surface preparation, mixing, application, protection, and coordination with other work.

**1.6 DELIVERY, STORAGE, AND HANDLING**

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

B. Storage and Handling Requirements:

1. Store and handle materials in accordance with manufacturer's instructions.
2. Keep materials in manufacturer's original, unopened containers and packaging until application.
3. Store silane water repellents between 40 and 100 degrees F (4 and 38 degrees C).
4. Store materials in clean, dry area indoors, out of direct sunlight.
5. Protect materials from freezing.
6. Protect materials during storage, handling, and application to prevent contamination or damage.

**1.7 WARRANTY**

Specifier Notes: Specify warranty. Consult Nox-Crete Products Group for information regarding extended warranties.

A. Manufacturer's Warranty: [Standard] [3-year extended] [5-year extended] [10-year extended].

**PART 2 PRODUCTS**

**2.1 MANUFACTURER**

A. Nox-Crete Products Group, 1444 South 20th Street, PO Box 8102, Omaha, Nebraska 68108. Toll Free 800-669-2738. Phone 402-341-1976. Fax 800-329-6733. [www.nox-crete.com](http://www.nox-crete.com). [customerservice@nox-crete.com](mailto:customerservice@nox-crete.com).

**2.2 MATERIALS**

Specifier Notes: Specify Nox-Crete Products Group “Stifel GC” or “Stifel SC”. Delete material not required. Consult Nox-Crete Products Group for assistance in determining appropriate silane water repellent for the specific application.

- A. Silane Water Repellents: “Stifel GC”.
  - 1. Description: Single-component, water-based, silane water repellent for exterior horizontal concrete surfaces.
  - 2. Odor: Mild.
  - 3. Freeze Point: 32 degrees F (0 degrees C).
  - 4. Flash Point, Penske Martin Closed Cup Test: Greater than 212 degrees F (100 degrees C).
  - 5. Vapor Pressure: Less than 17.5 mm Hg at 20 degrees C.
  - 6. VOC: Less than 400 g/L.
  - 7. Active Solids: 10 percent.
  - 8. NCHRP 244:
    - a. Series II, Reduction in Chloride Ion Absorption: 90 percent.
    - b. Series IV, Accelerated Weathering Test, Southern Exposure, Reduction In Chloride Ion Absorption: 88 percent.
  - 9. Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals, ASTM C 672:
    - a. Scaling: 0.
    - b. Mass Loss: 0.
  
- B. Silane Water Repellents: “Stifel SC”.
  - 1. Description: Single-component, water-based, silane water repellent for exterior horizontal concrete surfaces.
  - 2. Odor: Mild.
  - 3. Freeze Point: 32 degrees F (0 degrees C).
  - 4. Flash Point, Penske Martin Closed Cup Test: Greater than 212 degrees F (100 degrees C).
  - 5. Vapor Pressure: Less than 17.5 mm Hg at 20 degrees C.
  - 6. VOC: Less than 400 g/L.
  - 7. Active Solids: 15 percent.
  - 8. NCHRP 244:
    - a. Series II, Reduction in Chloride Ion Absorption: 90 percent.
    - b. Series IV, Accelerated Weathering Test, Southern Exposure, Reduction in Chloride Ion Absorption: 88 percent.
  - 9. Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals, ASTM C 672:
    - a. Scaling: 0.
    - b. Mass Loss: 0.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Examine concrete surfaces to receive silane water repellents.
- B. Notify Architect of conditions that would adversely affect application.
- C. Do not begin surface preparation or application until unacceptable conditions are corrected.

### **3.2 PREPARATION**

- A. Protection of In-Place Conditions: Protect adjacent surfaces, glass, glazed tile, painted surfaces, and vegetation from contact with silane water repellents.
- B. Surface Preparation:
  - 1. Prepare surfaces in accordance with manufacturer's instructions.
  - 2. Clean surfaces of dirt, dust, debris, oil, grease, rubber tire residue, curing compounds, bond breaking membrane, sealers, laitance, paint, and other contaminants which could adversely affect silane water repellents application.
- C. Concrete:
  - 1. New Concrete: Cure concrete a minimum of 28 days before application of silane water repellents.
  - 2. Existing Concrete: Remove surface contaminants and open substrate for maximum silane water repellent penetration in accordance with manufacturer's instructions.
  - 3. Apply joint sealants before silane water repellent application.
- D. Allow cleaned surfaces to dry for a minimum of 48 hours before application.

### **3.3 MIXING**

- A. Mix materials in accordance with manufacturer's instructions.

### **3.4 APPLICATION**

- A. Apply silane water repellents in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Apply silane water repellents to clean and dry substrates.
- C. Uniformly apply silane water repellents at application rate in accordance with manufacturer's instructions.
- D. Do not apply silane water repellents to the following:
  - 1. Frost covered or permeated surfaces.
  - 2. Bituminous or other organic solvent-soluble joint sealants, membranes, coatings, or toppings.
  - 3. Incompletely cured joint sealants.

### **3.5 PROTECTION**

- A. Protect applied silane water repellents from damage during construction.

**END OF SECTION**