

SECTION 07 19 16

SILANE WATER REPELLENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Application of an invisible Alkylalkoxysilane water repellency. Specification includes limited surface preparation.

B. Related Sections: Related sections include the following:

PLACE RELATED SECTIONS BELOW. EXAMPLES INCLUDE:

1. Section 03 30 00 – Cast-in-Place Concrete
 - a. Section 03 31 00 – Structural Concrete
 - b. Section 03 33 00 – Architectural Concrete
 - c. Section 03 34 00 – Low Density Concrete
2. Section 03 40 00 – Precast Concrete
3. Section 03 45 00 – Precast Architectural Concrete
4. Section 03 47 00 – Site-Cast Concrete
5. Section 03 48 00 – Precast Concrete Specialties
6. Section 03 49 00 – Glass-Fiber-Reinforced Concrete
7. Section 04 21 00 – Clay Unit Masonry
 - a. Section 04 21 13 – Brick Masonry
 - 1) Section 04 21 13.13 – Brick Veneer Masonry
 - 2) Section 04 21 13.13 – Surface-Bonded Brick Masonry
 - b. Section 04 21 19 – Clay Tile Masonry
 - c. Section 04 21 23 – Structural Clay Tile Masonry
 - d. Section 04 21 29 – Terra Cotta Masonry
8. Section 04 22 00 – Concrete Unit Masonry
 - 1) Section 04 22 00.13 – Concrete Unit Veneer Masonry
 - 2) Section 04 22 00.16 – Surface-Bonded Concrete Unit Masonry
 - a. Section 04 22 23 – Architectural Concrete Unit Masonry
 - 1) Section 04 22 23.13 – Exposed Aggregate Concrete Unit Masonry
 - 2) Section 04 22 23.16 – Fluted Concrete Unit Masonry
 - 3) Section 04 22 23.19 – Molded-Face Concrete Unit Masonry
 - 4) Section 04 22 23.23 – Prefaced Concrete Unit Masonry
 - 5) Section 04 22 23.26 – Sound-Absorbing Concrete Unit Masonry
 - 6) Section 04 22 23.29 – Split-Face Concrete Unit Masonry
 - b. Section 04 22 33 – Interlocking Concrete Unit Masonry

9. Section 04 25 00 –Unit Masonry Panels
10. Section 04 27 00 – Multiple-Wythe Unit Masonry
 - a. Section 04 27 13 – Composite Unit Masonry
 - b. Section 04 27 23 – Cavity Wall Unit Masonry
11. Section 04 28 00 – Concrete Form Masonry Units
 - a. Section 04 28 13 – Dry-Stacked, Concrete-Filled Masonry Units
 - b. Section 04 28 23 – Mortar-Set, Concrete-Filled Masonry Units
12. Section 04 40 00 – Stone Assemblies
 - a. Section 04 41 00 – Dry-Placed Stone
 - b. Section 04 42 00 – Exterior Stone Cladding
 - 1) Section 04 42 13 – Masonry-Supported Stone Cladding
 - 2) Section 04 42 16 – Steel-Stud-Supported Stone Cladding
 - 3) Section 04 42 19 – Strongback-Frame-Supported Stone Cladding
 - 4) Section 04 42 23 – Truss-Supported Stone Cladding
 - 5) Section 04 42 26 – Grid-System-Supported Stone Cladding
 - 6) Section 04 42 43 – Stone Panels for Curtain Walls
13. Section 04 43 00 – Stone Masonry
14. Section 04 70 00 – Manufactured Masonry
 - a. Section 04 71 00 – Manufactured Brick Masonry
 - b. Section 04 72 00 – Cast Stone Masonry
 - c. Section 04 73 00 – Manufactured Stone Masonry
15. Section 09 24 00 – Portland Cement Plastering
16. Section 09 25 23 – Lime Based Plastering
17. Section 09 25 33 – Lime Cement Based Plastering
18. Section 09 75 00 – Stone Facing
19. Section 09 96 96 – High Performance Silicate Finishes

1.2 DEFINITIONS

- A. Water repellency: A solvent-free environmentally friendly silane liquid water repellent applied to absorbent mineral surfaces.

1.3 SYSTEM DESCRIPTION

- A. A vapor-permeable water repellent protective treatment for mineral surfaces including concrete, cast stone, and masonry. It is used to protect all types of uncoated/unpainted porous mineral surfaces, whether alkaline or neutral, against water absorption and corrosive effects of acid rain and atmospheric pollution.
 1. Water Repellency: A very low VOC, solvent-free Alkylalkoxysilane repellency with 100% active ingredient that is drawn into the capillaries of the substrate and by chemical reaction forms a micro-thin silica gel coating within the pores repelling liquid

water and salt ions by reducing surface tensions. Does not impede vapor permeability. Will not change appearance of treated surfaces (remains invisible) and will not yellow over time.

2. Application over any mineral surface to create a water repellent zone within the substrate.

1.4 SUBMITTALS

- A. Product Data: Submit product data showing material proposed. Submit sufficient information to determine compliance with the Drawings and Specifications. Provide published documentation describing materials, characteristics, and limitations.
- B. Samples: Submit samples for verification purposes, fabrication techniques and workmanship.
- C. Manufacturer's Instructions: Submit manufacturer's instructions including technical data sheets, material safety data sheets, mixing instructions, application requirements, special procedures, and conditions requiring special attention.
- D. LEED Submittals: Submittals that are required to comply with requirements for LEED certification include the following:
 1. Low Emitting Materials: Submit certification by the manufacturer confirming that products (i.e., adhesives, sealants, paints, coatings, etc.) meet or exceed the volatile organic compound (VOC) limits set by specific agencies or other requirements. Clearly state VOC limits in the submittal.

1.5 QUALITY ASSURANCE

- A. Qualifications:
 1. Manufacturer Qualifications: Provide evidence that Manufacturer is a firm engaged in the manufacture of silane repellency of types required whose products have been in satisfactory use in similar service for a minimum of ten years, and is certified for establishing and applying an ISO 9001 Quality Management System and ISO 14001 Environmental Management System.
 2. Applicator Qualifications: *(BELOW, KEEP ONE AND DELETE THE OTHER)*
 - a. Provide evidence Applicator is a firm having a minimum of three years of successful application experience with projects similar in type and scope to that required for this Project, and having passed a product certification training course provided by the manufacturer prior to the execution of this unit of work.
 - b. Provide evidence Applicator is a firm having successful application of products within this specification with at least one project in the last 18 months similar in type and scope to that required for this Project, and having passed a product certification training course provided by the manufacturer prior to the execution of this unit of work.
- B. Mock ups: Prior to application of the work, fabricate and erect mock ups for each type of finish and application to verify selections made under sample submittals and to demonstrate aesthetic effects as well as qualities of materials and execution. Build mock ups to comply with the following requirements using materials indicated for final unit of work. Locate mock ups as directed by the Architect. Demonstrate the proposed range of aesthetic effects and workmanship to be expected in the completed work. Obtain the Architect's acceptance of mock ups before start of final unit of work.

1. Retain and maintain mock ups during construction in undisturbed condition as a standard for judging completed unit of work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Project site in supplier's or manufacturer's original wrappings and containers, labeled with manufacturer's name, material and product brand name, and lot number, if any.
- B. Store materials in their original undamaged packages and containers inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

1.7 PROJECT CONDITIONS

A. Environmental Requirements:

1. Substrate temperature must be between 41°F (5°C) and 77°F (25°C), ambient air temperature must be less than 86°F (30°C). Maintain temperature during and after application.
2. Do not apply when rain is expected, in high winds, or onto sun-heated or hot substrates.
3. Do not apply indoors or in enclosed spaces. Refer to product material safety data sheet.

1.8 WARRANTY

- A. Warranty period from date of Substantial Completion is 1 year.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: Items specified are to establish a standard of quality for design, function, materials, compatibility, performance, warranty, and appearance. Equivalent products by listed manufacturers are acceptable. The Architect is the sole judge of the basis of what is equivalent.
- B. KEIM Mineral Coatings of America, Inc., 10615 Texland Blvd. #600, Charlotte, North Carolina 28273. Telephone 704-588-4811. Email keim-info@keim.com.

2.2 MATERIALS

A. Water Repellency:

1. Alkylalkoxysilane technology with 100% active ingredient.
2. Highly vapor permeable. Leaves pores open to diffusion.
3. Will not change appearance of treated surfaces.
4. Will not yellow over time.
5. Solvent-free.
6. Very low VOC, less than 10 grams per liter VOC.
7. Basis of Design: "KEIM Silan 100", KEIM Mineral Coatings of America, Inc.

2.3 EQUIPMENT

A. Tools:

1. Water Repellency: Apply by natural bristle brush or Hudson type sprayer.

2.4 FINISHES

- A. Water Repellency: Apply full coverage wet coats removing material that is not absorbed.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Confirm by examination the areas and conditions under which the work is to be applied for compliance with manufacturer's instructions. Do not proceed with the work until unsatisfactory conditions have been corrected.
 1. Verify surfaces to be treated are fully cured to manufacturer recommendations, dust free, and absorbent.
 2. Verify substrate measures 40 percent or less humidity as indicated on a masonry moisture meter.
 3. Beginning of the work shall indicate acceptance of the areas and conditions as satisfactory by the Applicator.

3.2 PREPARATION

- A. Protection: Lay ground cloths and take measures as necessary to protect surfaces subject to contact by products specified by this Section.

3.3 APPLICATION

- A. Conform to reviewed product data, manufacturer's written instructions, and provisions of the Contract Documents.
- B. Plan the work properly.
 1. Work ahead of the sun on shaded façades.
 2. Work to logical stopping points (corners, seams, architectural features, etc.).
- C. Water Repellency:
 1. Apply in multiple flooding coats over surfaces allowing 10 minutes penetration time between coats until substrate will not absorb more. Wipe unabsorbed pooling material from substrate.
 2. Protect from wind, rain and freezing temperatures minimum 12 hours after application.

3.4 CLEANING

- A. Clean tools immediately with benzene or similar solvent.
- B. Leave applications clean and premises free from residue and debris from work of this Section.

END OF SECTION