SECTION 07190
(07 19 16)
WATER REPELLENTS

(Water repellent stain specification to impart color and reduce water absorption in decorative CMU)

The intent of this guide specification is to assist in creating a project specification and is not intended to be used as a "stand alone" specification. Please read the specification carefully and modify it as needed to fit the needs of your particular project.

OKON® PLUS COLOR™ (OPC™) is a water-repellent stain-base that is mixed with latex paint to produce a semi-solid, water-repellent stain for exterior, vertical cementitious surfaces. OPC can be mixed with any exterior latex paint and contains no pigments to change its color. A test application is required to determine the final appearance and coverage rate because the appearance will be influenced by the porosity, texture and color of the substrate as well as the opacity of the paint color. Application of OKON Plus Color alone may not provide sufficient protection against water absorption from rain and it may be top coated with OKON W-2 or OKON Plugger to provide additional water repellency that may qualify for a 5-Year Warranty.

PART - 1 GENERAL

1.1 SUMMARY

A. This section includes clear water-repellent stain system for vertical, decorative CMU.

B. System description –

1. Performance requirements: The application of water repellent stain shall provide finished surfaces color without altering the natural texture of the substrate, and shall resist water penetration from rainfall. It is expected that the stain will highlight the natural variation in the porosity and density of the substrate as its penetration will vary between types of cement and aggregate.

C. Related Sections include the following:

1. Section 04 20 00 – Concrete Unit Masonry

Note 1 – Cross reference Section 04 20 00 with this section.

Specification must include waterproofing of the backside of parapet walls with flexible membrane. This should be done by extending the roof membrane up the backside of the wall under a metal cap on the parapet wall or application of flexible waterproofing membrane per Section 09 96 53.

Raked mortar joints disqualify a project for a 5-Year Warranty.

Zinsser offers a 5-Year Material Warranty for pre-qualified projects when OKON Plus Color is top coated with OKON Plugger. Application of OKON Plugger may slightly intensify the color of the stain by adding a slight sheen. In addition to be top coated with OKON Plugger, light-weight block (as defined by ASTM C-90-96) must contain an integral water repellent to be eligible for a 5-Year Warranty.

2. Section 07 50 00 – Membrane roofing

Note 2 – Specifications must include waterproofing of parapet caps, preferably with metal flashing, as well as the backside of all parapet walls with a pigmented, elastomeric membrane. OKON Plus Color and OKON Plugger are not satisfactory as a method of sealing the parapet caps or the backside of parapet walls.

3. Section 09 96 53 – Pigmented Elastomeric Membrane Coating to waterproof backside of exposed parapet wall.

4. Section 09 96 66 – Graffiti Resistant Coatings

Note 3 – Specification must require that any graffiti resistant coating be compatible with OKON Plus Color or OKON Plugger Water Repellent.

1.2 SUBMITTALS

A. Comply with Section 01 33 00 Submittal Procedures

B. Product Data: Submit manufacturer's technical bulletins and MSDS on each product.

C. Applicator Certificates: Signed by manufacturer certifying that the applicator complies with requirements.

D. Certification by water repellent manufacturer that's products supplied comply with local regulations controlling VOC emissions.

E. Color sample – Samples of each color applied to substrate used on project must be submitted to architect for approval. Architects may use paint color swatches to direct color choices but must be shown samples of each color applied to substrates to illustrate influence of substrate color and variation in transparency between colors. A second coat of stain may be applied and will significantly increase the color saturation of the stain. <u>The architect must pre-approve in writing a second application of stain.</u>

1.3 QUALITY ASSURANCE

A. Provide water repellent stain with the following properties based on testing manufacturer's standard products, according to test methods indicated, applied to substrates simulating project conditions using same materials and application methods to be used for project.

B. Field Sample: OKON Plus Color creates a water repellent stain and when topcoated with OKON W-2 or OKON Plugger may qualify for a special 5-year water protection warranty.

1. Install at Project site or pre-selected area of building an area for field sample, as directed by Architect.
2. Provide mockup of at least 100 square feet (9.3 sm) to include surface preparation, sealant joint, and juncture details and allow for evaluation of concrete stain topcoated with specified water repellent.
3. Conduct a minimum of three RILEM tests before and after the concrete stain and water repellent have been applied. Allow stain and sealer to cure three days before completing the post-application test. At least one RILEM test should be performed on a mortar joint within the test area. The average water loss should never exceed 1 mL in 3 minutes or be less than 90% improvement when compared to test conducted prior to application of the stain.

4. Apply material in strict accordance with manufacturer's written application instructions.
5. Obtain Architect's written approval of field sample before start of material application, including approval of aesthetics, color, texture, and appearance.
6. Manufacturer's representative will review surface preparation, application, and workmanship.
7. Field sample will be standard for judging workmanship on remainder of Project.
8. Field sample must be maintained during construction for workmanship comparison.
9. Field sample must not be altered, moved, or destroyed until Work is completed and approved by Architect.
10. Intermix enough product at one time to cover areas between architectural breaks. See manufacturer's technical data bulletin for application instructions.
11. Intermixing OKON Plus Color and latex paint produces a low viscosity stain that must be remixed frequently to ensure color uniformity.

1.4 DELIVERY, STORAGE AND HANDLING

A. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction 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 degree F (2 degree C) or above 100 degrees F (43 degrees C).

1.5 PROJECT CONDITIONS

A. Weather and Substrate Conditions: Do not proceed with application of water repellent under any of the following conditions, except with written instructions from the manufacturer:
   1. Ambient air and surface temperature is less than 50 degrees F.
   2. Concrete surfaces and mortar have cured less than 28 days.
   3. Rain or temperatures below 50 degrees F are predicted within 24 hours.
   4. Application is earlier than 24 hours after surface has been wet.
   5. Substrate is frozen or surface temperature is less than 50 degrees F.
   6. Windy conditions exist that may cause water repellent to be blown onto surface not intended to be coated.

1.6 WARRANTY

A. General Warranty: The special warranty specified in the article shall not deprive the owner of other rights the owner may have under other provisions of the contract documents and shall be in addition to, and run concurrent with, other warranties made by the contractor under requirements of the contract documents.

B. Special Warranty: If applicable - Submit a written warranty, executed by the applicator and water repellent manufacturer, covering materials, agreeing to repair or replace materials that fail to provide water repellency within the specified warranty period. Warranty applies to water penetration only and does not include the appearance of the stain coat or include deterioration or failure of coating due to unusual weather phenomena, failure of prepared and treated substrate, formation of

new joints and cracks in excess of 1.5 mm (1/16 inch) wide, fire, vandalism or abuse by maintenance equipment.

C. Warranty Period: Five (5) years from date of Substantial Completion.

D. Contractor Verification - Applicator must comply with manufacturer's warranty requirements providing written verification of total size of surface area covered and total gallons of product applied. This document will be accompanied with copies of invoices for product applied to project, including credits for any returned merchandise.

E. Final Inspection - Manufacturer will issue the Special Warranty after completing final inspection of the Project confirming that the performance of the sealer is equal to the test wall and after receiving the completed Contractor Verification documents.

PART - 2 PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to, the following:

1. OKON PLUS COLOR Concrete Stain System
2. OKON PLUGGER Water Repellent Sealer
3. OKON W-2 Water Repellent Sealer
4. OKON Graffiti Barrier Coat
5. OKON Products are manufactured and distributed by:

   Zinsser Co. Inc.
   173 Belmont Dr.
   Somerset, NJ 08875
   732-469-8100 or Facsimile 732-652-2491
   Internet Web Sites: www.okoninc.com or www.zinsser.com

B. Substitutions: Comply with Section 01 33 00 Submittals and 01 60 00 Products

2.2 MATERIALS

A. Water-based acrylic micro-emulsion and fluoropolymer containing (15) percent solids minimum by weight.

B. Minimum performance requirements for water repellent:
1. VOC compliant in SCAQMD - < 100 g/L
2. Water Vapor Transmission ASTM E96 - > 10 perms
3. When tested in combination with OKON W-2 or OKON Plugger - ASTM E514 Standard Test Method for Water Penetration and Leakage through Masonry tested on like substrate - >90% reduction in water penetration compared to unsealed surface

PART - 3 EXECUTION

3.1 PREPARATION

A. Clean substrate of substances that might interfere with penetration or performance of water repellents. Remove all dust, dirt, paint, bitumens, efflorescence, oil, pollution

deposits, and curing, forming, and parting compounds, other contaminants prior to application. Use abrasive brush blast or high pressure water as necessary to achieve the required surface condition.

B. Allow power washed surfaces to dry three days prior to coating. Surface should be dry to touch and show no visible signs of moisture prior to application of water repellent stain or clear water repellents.
C. Protect adjoining work, including sealant bond surfaces, from spillage or over spray of stain or water repellent. Cover adjoining and nearby surfaces of aluminum and glass if there is the possibility of water repellent being deposited on surfaces.
D. Coordination with Sealants: Do not apply water repellent until sealants for joints adjacent to surfaces receiving water repellent treatment have been installed and cured.
E. Water repellent stain work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, water repellent stain, and sealant materials identical to those used in the work.
F. Revisions of planned application, if any, as requested by Architect, will be by Change Order if application method constitutes a departure from requirements of Contract Documents at the time of contracting.

3.2 APPLICATION

A. Comply with manufacturers written application instructions. Consult manufacturer's technical representative if written instructions are not applicable to project conditions. Follow application method and rate established by Test Area.

3.3 FIELD QUALITY CONTROL

A. Manufacturers Field Service: Provide service of a factory authorized technical service representative to inspect and approve the substrate before application and to instruct the applicator on the product and application method to be used.

3.4 CLEANING

A. Protective Covering: Remove protective coverings from adjacent surfaces and other protective areas.
B. Immediately clean water repellent from adjoining surfaces and surfaces soiled or damaged by water repellent application as work progresses. Repair damage caused by water repellent application. Comply with manufacturers written cleaning instructions.

1. END OF SECTION 07190