

CANYON TONE STAIN

MASTER GUIDE SPECIFICATION

SECTION 07180

Pigmented, Water-Repellent Acrylic Penetrating Sealer

PRODUCT DESCRIPTION

PART 1 – GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Precast Concrete: Section 03400
- B. Membrane Waterproofing: Section 07110
- C. Sealants: Section 07900
- D. Special Coatings: Section 09800
- E. Painting: Section 09900

1.02 QUALITY ASSURANCE

- A. Qualifications of Applicator: In order to qualify for the Manufacturer's warranty program, the water-repellent stain shall be applied by a Manufacturer-certified Applicator.
- B. Qualifications of Manufacture: Water-repellent stain Manufacturer shall be an ISO 9001:2000 Certified Company and be current on all methods and procedures as set forth in the program.
- C. Jobsite Mock-Up: After initial samples have been approved, apply two (2) separate coats of water-repellent stain to one side of the mock-up wall located at the jobsite. Stain shall be of the type and color that will be used on the actual building. Application procedures and absorption rates shall be as hereinafter specified, unless otherwise recommended by the Manufacturer in writing, to achieve color uniformity and to effectively repel moisture from the substrate.
 - 1. Approval by the Architect or Owner shall serve as a standard of comparison with respect to color and overall appearance.
 - 2. General application to actual surfaces on the building shall not proceed until jobsite mock-up has been approved in writing by the Architect or Owner.

Delete paragraph B for projects not requiring a jobsite mock-up

1.03 SUBMITTALS

- A. Submit Manufacturer's literature, Approved Applicator certificate and samples to the Architect or Owner in accordance with requirements specified in General Conditions and Division 1, General Requirements.
- B. Manufacturer's Literature: Manufacturer's literature shall be submitted for review before work is started. Literature shall show material specifications, physical properties (including ASTM test methods utilized), Manufacturer's estimated application rate for each surface to which the stain is to be applied, current application instructions of the Manufacturer, and Material Safety Data Sheets.
- C. Samples: After initial color selection has been approved, submit two (2) precast concrete units to match those being used in the work, with water-repellent stain spray-applied over the entire surface in two (2) separate applications. The untreated precast units shall be furnished by the General Contractor. Water-repellent stain shall be of type and color that will be used on the actual building. Samples shall be resubmitted until approved by the Architect or Owner. Approval by the Architect or Owner shall serve as a standard with respect to color and overall appearance.

Modify above paragraph to meet project substrate and submittal requirements

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original sealed containers, clearly marked with the Manufacturer's name, brand name, type of material, batch number and date of manufacture.
- B. Store materials in an area where temperatures will not be less than 50°F (10°C) or higher than 90°F (32°C), and in accordance with OSHA & local code requirements.

1.05 JOB CONDITIONS

- A. Temperature and relative humidity conditions during time of application shall be per Manufacturer's application instructions. Do not apply material under rainy conditions or within two (2) days after surfaces become wet from rainfall or other moisture. Do not apply when weather is foggy or overcast.
- B. Take precautions to ensure that workmen and work areas are adequately protected from health hazards resulting from handling, mixing and application of material.
- C. Furnish all scaffolding and the necessary equipment to complete the work. Scaffolding shall comply with all local, state and federal requirements as to safety.
- D. Provide drop cloths and other forms of protection necessary to protect all adjoining surfaces to render them completely free of overspray and splashes. Any surfaces that have been damaged or splattered shall be cleaned, restored or replaced to the satisfaction of the Architect or Owner.
- E. Application of the water-repellent stain shall be completed prior to applying sealant between joints. If sealant is applied prior to staining, a test must be conducted prior to installation to verify compatibility of the stain and sealant.
- F. Provide ventilation or forced air circulation during and after interior application of stain until fumes are no longer evident.

Delete paragraph F for exterior applications only. Ventilation Systems to Meet OSHA requirements.

PART 2 – PRODUCTS

2.01 DESCRIPTION

An acrylic, penetrating stain designed to provide long term color uniformity, ultraviolet resistance, anti-carbonation characteristics, alkali and pollution resistance, plus water-repellency without disturbing the natural texture of the substrate. For use over vertical, above-grade smooth or textured concrete, exposed aggregate concrete, glass reinforced concrete, brick, stone, stucco and other masonry surfaces.

2.02 MATERIAL

Water-repellent stain shall be UNITED COATINGS' "CANYON TONE STAIN", or equal, meeting the following minimum requirements:

- A. Solids by volume shall be a maximum of 33% (±2) [ASTM D2697]
- B. Weight per gallon shall be 10.6 lbs (4.8 kg) (±.2) [ASTM D1475]
- C. Dry time shall be 15 minutes @ 75°F (24°C), 50% R.H. [ASTM D1640]
- D. Cure time shall be 1 hour @ 75°F (24°C), 50% R.H. [ASTM D1640]
- E. Gloss (Angular Reflectance) shall be 4 @ 60° Gardner [ASTM D523]
- F. Adhesion to concrete shall be a minimum of 300 lbs./sq. in. (2.069 MPa) [ASTM D3359]
- G. Temperature limits for service conditions shall range from -70° F to 200° F (-64°C to 93°C)
- H. Toning pigments shall be inorganic oxides
- I. Materials shall meet the performance requirements as specified in Paragraph 2.02
- J. Stain shall have a minimum 10-year history of successful performance under weather conditions similar to those encountered at the project site
- K. Graffiti Resistant Topcoat (optional): **ACRYSHEEN**, clear, semi-gloss 100% acrylic sealer, as supplied by Coatings Manufacturer for increased dirt release characteristics and to aid in the removal of graffiti and other stains

2.03 COLOR

Color of the stain shall be _____, as selected by the Architect or Owner from Stain Manufacturer's available colors.

2.04 PERFORMANCE REQUIREMENTS

- A. Resistance to dirt or soil collection: Treated specimen shall meet the following requirements after 12 months concentrated weather exposure in southeast (high humidity) environment when tested in accordance with ASTM D3719:
 1. Dirt collection index of 90% minimum
 2. No fungal growth
- B. Resistance to concentrated sunlight: Color retention and ultraviolet resistance of the treated specimen shall meet the following requirements after 18,577 mega joules of radiation when tested in accordance with ASTM G90 on a Q-Track sunlight concentrator:
 1. No cracking visible under 45X magnification

2. Instrumental color change of less than .90 CIE units
3. Instrumental gloss change of less than 1 unit tested @ 60° Gardner
- C. Resistance to Accelerated Weathering: Color retention and ultraviolet resistance of the treated specimen shall meet the following requirements after 1,500 hours of testing in accordance with ASTM G154 in a QUV cabinet:
 1. Color Retention: Within five (5) N.B.S. (National Bureau of Standards) units when tested in accordance with ASTM D2244; or shall show no appreciable change when tested in accordance with ASTM D1729. Inspection is compared to unweathered specimen.
 2. Ultraviolet Resistance: No chalking or flaking when tested in accordance with ASTM D659 and D722.
- D. Resistance to Salt Spray: Color retention and degree of efflorescence of the treated specimen shall meet the following requirements after 500 hours of testing in accordance with ASTM B117 in a Harshaw Salt Spray Cabinet:
 1. Color Retention: Within five (5) N.B.S. (National Bureau of Standards) units when tested in accordance with ASTM D2244; or shall show no appreciable change when tested in accordance with ASTM D1729. Inspection is compared to unweathered specimen.
 2. Degree of Efflorescence: Specimen shall exhibit no efflorescence when tested in accordance with ASTM D2831.
- E. Resistance to Sulfide Staining: No discoloration after 15 minutes immersion in saturated Hydrogen Sulfide gas solution when tested in accordance with ASTM D1712. Compare with control specimen not exposed to Hydrogen Sulfide gas solution.
- F. Resistance to Chemical Reagents: Specimen shall exhibit none or slight color change and no softening or deterioration after 7 days immersion in the following chemicals: Ammonium Hydroxide - 10%; Sodium Hydroxide - 10%; Mineral Spirits, KB value 38. Inspection is compared to specimen not exposed to chemical reagents.
- G. Verification of Minimum 10-Year Exposure to Appropriate Climate: Stain shall have been in use in a similar climatic region 10 years or more and show no sign of fading, peeling or flaking. Supply project locations exceeding 10 years of service.
- H. Moisture Vapor Transmission: Must allow moisture from building interior to pass through the substrate and stain with a perm rating of 10 (±2) when tested in accordance with ASTM E96.

PART 3 – EXECUTION

3.01 PREPARATION OF SURFACES

Surfaces to receive water-repellent stain shall be structurally sound, clean, dry, fully cured, and free from dust, efflorescence, scale or other foreign materials. Methods and materials used for cleaning of substrate shall be as recommended by the Manufacturer of the water-repellent stain. Bug-holes, voids and stress cracks in the masonry surface must be repaired with cementitious patch or repair material approved by the Manufacturer of the water-repellent stain prior to application. Materials such as curing agents, form release agents, bond breakers and other concrete processing materials shall be completely removed in accordance with the Manufacturer's printed instructions for removal prior to coating application.

3.02 MIXING

Water-repellent stain shall be thoroughly mixed in accordance with Manufacturer's directions. Mix all containers thoroughly prior to application. Do not thin the material.

3.03 APPLICATION

- A. Water-repellent stain shall be spray-applied using conventional or airless spray equipment in two (2) separate applications in strict accordance with the Manufacturer's printed application instructions and precautions, copies of which shall be at the jobsite. The first application shall achieve an in-depth penetrating color base. The second application shall achieve color uniformity, aesthetic satin tone, and water repellency. Material shall be applied using methods and equipment as recommended by the stain Manufacturer. Applicators shall be required to wear chemical respirators in accordance with OSHA requirements during application. Should jobsite or environmental conditions prohibit spray application, the stain may be applied by roller, taking care so as to not exceed the recommended application rate.
- B. The Applicator shall apply a field test on a small inconspicuous area of the actual building surface to determine the best absorption rate to achieve color uniformity, as well as to determine suitability of the application technique.
- C. Material shall be applied at the rate of approximately _____ sq. ft./gal. Absorption rates will vary depending on the surface texture and porosity of the substrate in order to achieve even staining and optimum water-repellency. The minimum dry film thickness shall be 4 mils (102 microns) at in any one location to qualify for UNITED COATINGS' 10-year warranty program. The use of a "wet film gauge" during application is highly recommended to confirm that the proper film thickness is achieved. The spray gun shall be held perpendicular to and not more than 18 inches (45 cm) from the substrate during application. The second application can be applied as soon as the first application is dry to touch. When utilizing stain on coarse or textured surfaces, a third application may be necessary to achieve color uniformity and optimum water-repellency.

*Fill in the number of square feet per gallon for proper coverage rate in the above paragraph.
Actual coverage rates are determined by the jobsite sample.*

Approximate total coverage rates are as follows:

1. Smooth Concrete ----- 125 sq. ft./gal. (3.0 m²/l)
2. Sandblasted Concrete ----- 100 to 125 sq. ft./gal. (2.4 to 3.0 m²/l)
3. Standard Concrete Block* ----- 75 to 100 sq. ft./gal. (1.8 to 2.4 m²/l)
4. Split-Face Concrete Block* ----- 50 to 75 sq. ft./gal. (1.2 to 1.8 m²/l)
5. Brick and Stucco ----- 75 sq. ft./gal. (1.8 m²/l)

**CANYON TONE STAIN is NOT designed to WATERPROOF concrete block or other porous substrates*

Apply approximately 1/2 total number of gallons in each of the two (2) separate applications. Allow for extra surface area when estimating coverage over fluted, raked, split-face or other textured surfaces.

- D. Each application shall be first in a uniform horizontal direction, followed by a uniform overlapping vertical direction. Two separate applications can normally be accomplished in one stage setting with minimal, if any, delay due to the rapid dry time. Work shall be scheduled so that the stopping point prior to each shut-down occurs at an opening, column or corner.
- E. If unevenness in color, lines from work termination or scaffolding, etc. exist, the Architect or Owner may have all such surfaces reapplied at the Contractor's expense. Reapplication, if required, shall be carried to a natural termination point.
- F. Brush or roller-apply stain only at locations where overspray would affect adjacent materials and where not practical for spray application, taking care to apply the stain at the same rate used for the spray application.
- G. Any surfaces that extend below grade must be sealed with a waterproof membrane specifically designed for such purpose. This will prevent ground moisture from wicking up the masonry surfaces.
- H. In areas indicated by the Architect or Owner, apply one coat of UNITED COATINGS' **Acrysheen** at the rate of 250 to 300 sq. ft. per gallon (6.1 to 7.3 m²/l).

3.04 CLEANUP

Clean up any overspray from adjacent surfaces with cleaner that will not damage surfaces, as recommended by the stain Manufacturer.

3.05 FIELD QUALITY CONTROL

Empty water-repellent stain containers shall not be removed from the jobsite until final completion or until so authorized in writing by the Architect or Owner.

3.06 10-YEAR STANDARD PRODUCT WARRANTY (Optional)

Upon completion of the stain application, and as a condition of its acceptance, deliver to the Architect or Owner two copies of the fully executed 10-year limited product warranty from the Manufacturer, including the following provisions:

1. Product used will act as a water-repellent for the full warranty period
2. Product used will not peel or flake for the full warranty period
3. Product used will have excellent color retention and uniformity for the full warranty period