

CANYON TONE STAIN®

PIGMENTED WATER-REPELLENT STAIN

WITH PLIOTEC® TECHNOLOGY

Technical Data & Application Instructions

PRODUCT DESCRIPTION

CANYON TONE STAIN is a modified, water-based acrylic, penetrating pigmented sealer. It possesses superior color stability, ultraviolet resistance, alkali and pollution resistance, and water-repellency. Toning pigments are chemically suspended in the acrylic resins, thus eliminating settling and color variations on the structure.

CANYON TONE STAIN is integrally locked into the substrate as a result of its low viscosity and microscopic penetration properties. It will not peel, crack or blister from a properly prepared concrete or masonry surface. CANYON TONE STAIN allows moisture vapor to escape from the building interior, while providing excellent water-repellency on the exterior through the use of hydrophobic resins.

BASIC USES

CANYON TONE STAIN is a penetrating sealer and stain with excellent water-repellent properties. It is design for use on properly prepared, above-grade, smooth or textured concrete, masonry, brick, stone or stucco. CANYON TONE STAIN corrects natural color imperfections in the substrate by imparting permanent color uniformity plus water-repellency, without disturbing the natural texture of the substrate. It is not designed for application to horizontal surfaces.

CANYON TONE STAIN is used as a uniform color finish on precast and poured concrete, glass fiber reinforced concrete, brick, stucco and stone surfaces. **CANYON TONE STAIN is not designed to waterproof concrete block or other porous substrates.** It can be used over masonry substrates to achieve color uniformity only. Contact UNITED's Technical Service Department for additional information. As a water-based system, CANYON TONE STAIN can be used on interior surfaces as well as exterior. CANYON TONE STAIN complies with all VOC regulations.

Highway bridge structures, sound walls, median barriers, foundations, tunnels, retaining walls and related building structures are all candidates for the application of CANYON TONE STAIN.

PHYSICAL PROPERTIES TABLE I

Property	Value	Method
Solids by Weight	40% (±2)	ASTM D2369
Solids by Volume	24% (±2)	ASTM D2697
Weight per Gallon	10.5 lbs (±.2) (4.8 kgs)	ASTM D1475
Viscosity	900-1500 cps @ 70°F	ASTM D2196
Dry Time*	20 minutes	ASTM D1640
Cure Time*	1 hour	ASTM D1640
Gloss	4.0 (60° Gardner)	ASTM D523
Permeability	10 Perms (±2) @ 4 dry miils	ASTM E96
Adhesion to Concrete/Masonry	300 lbs/sq. in. (2,069 kPa)	ASTM D3359
Low & High Temp. Service Limits	-70°F to 200°F (-57°C to 93°C)	

*Dry time and cure time at 75°F (24°C), 50% R.H.

COLORS

CANYON TONE STAIN is available in a wide selection of natural toned colors. All other colors are custom matched by UNITED for the specific application. UNITED has the color tinting facilities to match virtually any color. Color chips or samples must be furnished to UNITED for all custom colors.

WARRANTY

UNITED COATINGS warrants to the Building Owner that, when properly applied, CANYON TONE STAIN will not peel or flake, will have excellent color retention and uniformity, and will act as a water-repellent for a period of 10-years from the date of application.

PERFORMANCE PROPERTIES

TABLE 2

Property	Test Procedures	Value
Resistance to Accelerated Weathering	Color retention & ultraviolet resistance after 3,000 hours continuous exposure in QUV Cabinet as per ASTM G154	No deleterious effects. Color is within 5 N.B.S units as per ASTM D2244 & D1729. No chalking or flaking as per ASTM D659 & D722
Resistance to Natural Sunlight	Color & gloss retention after 18,000 megalous of radiation exposure as per ASTM G90	Color and gloss change less than 1 CJE unit
Reduction of Chloride Ion Penetration	Sealed concrete panels tested as per ASTM D1218 for chloride ion resistance	CANYON TONE STAIN achieved a reduction of 73% @ 1.6 to 13 mm penetration and 94% @ 13 to 25 mm penetration
Resistance to Wind Driven Rain	Rilem Tube Method #11.4 used to determine the ability to reduce water penetration in a pressurized environment	0 penetration @ 4 dry mils (102 microns) after 60 minutes exposure
Resistance to Salt Spray*	Harshaw Salt Spray Cabinet – ASTM B117 (5% Sodium Chloride fog solution)	No deleterious effects; no color fade and no efflorescence – after 500 hours
Resistance to Sulfide Staining†	Immersion in saturated Hydrogen Sulfide – ASTM D1712	No signs of discoloration after 15 minutes
Resistance to Chemical Reagents°	Immersion in the following solutions for 7 days: 10% Sodium Hydroxide	No softening; very slight color change
	10% Ammonium Hydroxide	No softening; very slight color change
	Mineral Spirits KB Value 38	No softening or color change

*Test conducted with **CANYON TONE STAIN** on concrete masonry blocks.

†Sulfide gas is a common industrial pollutant, which discolors the pigment in many stains.

°Sodium Hydroxide and Ammonium Hydroxide were tested to show **CANYON TONE STAIN'S** resistance to alkaline conditions found in concrete and masonry. Mineral Spirits is commonly used for graffiti removal.

ADVANTAGES

- **Uniformity of Appearance:** **CANYON TONE STAIN** contains a relatively low degree of pigmentation. Depending upon the desired color, a maximum of 1 pound of toning pigments are used per 1 gallon (3.8 liters) of finished product. These toning pigments are chemically suspended in solution at all times by a proven process that eliminates settling and color variations on the structure.
- **Color Retention:** Toning pigments used in **CANYON TONE STAIN** standard colors are laminar silicates, titanium dioxide and inorganic oxides. These non-fading toning pigments are as durable as natural stone and will greatly resist ultraviolet and ozone attack.
- **Single Package:** **CANYON TONE STAIN** is a ready-to-use material after mixing. It has no pot life problems. Shelf life is unlimited.
- **Fast Application:** **CANYON TONE STAIN** dries quickly and can be rapidly applied in 2 coats over most surfaces.
- **Non-Oxidizing:** **CANYON TONE STAIN** does not contain any ingredients that will oxidize, such as vegetable and marine oils, paraffins, stearates or organic pigments, which cause rapid degradation and allow moisture intrusion. **CANYON TONE STAIN** contains pure, non-yellowing acrylic polymers. **There are no filler resins or plasticizers.**
- **Non-Lapping:** **CANYON TONE STAIN** utilizes a unique acrylic resin formulation which, together with its low degree of pigmentation and sheen, virtually eliminates lap-marks under most application conditions.
- **Water-Based:** Non-toxic and odor free for easy, safe application on both interior and exterior surfaces. Meets all Federal, State and Local V.O.C. requirements.
- **No peeling or Flaking:** Due to the micro-penetrating qualities and tenacious adhesion of **CANYON TONE STAIN** to concrete and masonry surfaces, the stain weathers like natural concrete and does not peel or flake from the substrate as do typical “paint” finishes.

SURFACE PREPARATION

Surfaces to receive water-repellent stain shall be structurally sound, clean, dry, fully cured, and free from dust, efflorescence, scale or other foreign materials. New concrete that has been treated using a curing or release compound, must be cleaned using **United Cleaning Concentrate (UCC)** or equal biodegradable cleaner. Rinse thoroughly using clean water to remove all traces of the chemical cleaner. Existing concrete must also be cleaned using **UCC** and water, and thoroughly rinsed. If general cleaning is not adequate, or if substrates are too dense to achieve adequate penetration, they should be brush-blasted to clean and/or open the surface. Bug-holes, voids and stress cracks in the concrete or masonry surface must be repaired using **UNITED'S Uni-Crete** or other polymer cement repair material approved by **UNITED** prior to application. Materials such as curing agents, form release agents, bond breakers and other concrete processing materials shall be completely removed prior to proceeding with the coating application.

CANYON TONE STAIN is a natural penetrating stain. It is not designed to form a heavy "paint-like" film. If **CANYON TONE STAIN** is unable to penetrate, it will form a surface film. Surfaces such as glazed or dense brick, glass fiber reinforced concrete, and extremely smooth, dense concrete must be sweep sandblasted prior to application of **CANYON TONE STAIN** to allow for maximum penetration. Although **CANYON TONE STAIN** has been used successfully on numerous recoat projects over a wide range of existing paints and coatings, a test area should always be applied to verify compatibility. **CANYON TONE STAIN** will provide the same color stable, water-repellent properties, however, adhesion to the substrate will depend on the bond of the existing paint or coating.

ESTIMATED TOTAL COVERAGE RATES TABLE 3

Surface	Total Square Feet/ Gallon – Estimated
Concrete	
Cast-In-Place	125 (3.0 m ² /l)
Precast	125 (3.0 m ² /l)
Glass Fiber Reinforced	
Concrete (GFRC)	150 (3.7 m ² /l)
Concrete Block† Standard	75 to 100 (1.8 to 2.4 m ² /l)
Split-Face	50 to 75 (1.2 to 1.8 m ² /l)
Brick†	75 (1.8 m ² /l)
Stucco	
Spray-On†	50 (1.2 m ² /l)
Troweled†	100 (2.4 m ² /l)

Apply approximately ½ the total number of gallons in each of the two (2) separate applications.

Note: The above absorption (coverage) rates are provided for estimating purposes only. Absorption rates will depend upon the texture and porosity of the substrate. Allow for extra surface area when estimating coverage for raked joints and fluted or split-face surfaces. Estimated coverage rates are totals for two coats.

A minimum of 4 dry mils is required at any location to qualify for UNITED COATINGS' 10-year CTS warranty program.

APPLICATION

CANYON TONE STAIN may be applied by roller or airless spray equipment. Any airless spray equipment capable of 1,000 psi (6,980 kPa) and ½ gallon per minute (1.9 l/minute) delivery can be used for applying **CANYON TONE STAIN**. Utilize higher capacity spray equipment on large projects for maximum production. A reversible self-cleaning spray tip with orifice size of .015" to .021" (.38 to .53 millimeters) and minimum 40 degree fan angle is recommended.

Brush or roller application is recommended only for edging work and for confined areas that would require extensive masking or protection from spray during application. When applying **CANYON TONE STAIN** with a brush or roller, do not apply material at a coverage rate exceeding that which has been spray applied. Multiple application methods, at varying coverage rates, may result in variations in the finish sheen.

Refer to Table 3 entitled "Estimated Total Coverage Rates" for the type of substrate and approximate total coverage rate per gallon. The coverage rates listed are the approximate total for two (2) separate applications. **These figures are provided for guideline use only.**

CANYON TONE STAIN is applied in a minimum of two separate coats. The first application shall achieve an indepth penetrating color base. The second application shall achieve color uniformity, aesthetic satin tone and water-repellency. The second application can be applied as soon as the first application is dry to touch. The minimum dry film thickness shall be a 4 mils (102 microns) at any 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. A cross-hatch (vertical/horizontal) spray technique must be employed. Wherever possible, either spray to a termination point or maintain a wet edge. Darker colors applied over light colored substrates may require additional coats for full color uniformity. Exceptionally coarse and/or porous substrates may require a third coat of **CANYON TONE STAIN** to achieve uniform color and sheen.

Each application shall first be in a uniform horizontal direction, followed by a uniform, overlapping vertical direction. When applying **CANYON TONE STAIN** to ribbed, fluted, split-face or other textured finishes, take care to apply the stain from various angles to ensure that all surfaces are evenly coated. The spray gun shall be held perpendicular to and not more than 18" (45 cm) from the wall. Care should be taken during application to prevent runs or sags. Backrolling is an effective method of achieving hide over coarse or porous surfaces.

The Applicator should first apply a field test on a small, inconspicuous area of the building surface to determine the best absorption rate to achieve color uniformity. Refer to paragraph entitled "Sample Area Application."

Use soap and water to thoroughly flush equipment. Purge water from equipment using Mineral Spirits or Cellosolve solvent. Leave the solvent in the lines and equipment until the next use.

SAMPLE AREA APPLICATION

UNITED recommends that a sample area be applied by the Contractor, using the proposed application method and coverage rate, and desired **CANYON TONE STAIN** color. Approval shall then be obtained prior to any general application of the material. Sample application shall be conducted on an inconspicuous area of the actual building (minimum 50 square feet / 3.7 m²).

Applying the desired **CANYON TONE STAIN** color to a sample area will determine the best absorption rate to achieve color uniformity, as well as determine suitability of the application technique employed. Final appearance is affected by absorption rate, surface texture and color, porosity of the substrate and application technique. For these reasons, written approval should be obtained from the Architect and/or Building Owner prior to proceeding with the general application. Approved sample area shall serve as a standard of comparison with respect to color and overall appearance.

APPLICATION TIPS

Whenever **CANYON TONE STAIN** is ordered by a customer, every effort is made to send all containers of the **CANYON TONE STAIN** color in the same batch number. However, due to fluctuations in inventory levels, there are occasions when different batch numbers of the same color are sent to complete an order. Whenever this occurs, it is the sole responsibility of the **CANYON TONE STAIN** Applicator to make certain that only one batch number is used on any side of the building. Different batch numbers cannot be used on the same wall unless they are "boxed" or mixed together to insure total color uniformity.

When pre-cast panels or GFRC panels are stained at the factory and later constructed at the building jobsite, the Contractor must be certain that all panels attached on any given side of a building are stained with the same batch number of **CANYON TONE STAIN**.

PACKAGING & MIXING

CANYON TONE STAIN is a single component, ready-to-use material available in 5-gallon (19 liter) pails and 55-gallon (208 liter) drums.

Material shall be thoroughly mixed for a minimum of five (5) minutes prior to application. **Do not thin the material.** Use a power mixer with a blade capable of uniformly mixing the entire container. Periodically agitate the material during application to ensure even distribution of the pigment.

Shelf life in unopened containers is 2 years. Material should be stored at temperatures no lower than 40°F (4°C), or higher than 100°F (38°C). Do not open containers until ready to use the material.

LIMITATIONS & PRECAUTIONS

CANYON TONE STAIN will freeze and become unusable at temperatures below 32°F (0°C). Do not ship or store unless protection from freezing is available. Do not apply **CANYON TONE STAIN** at temperatures below 50°F (10°C) or when there is a possibility of temperatures falling below 32°F (0°C) within a 4 hour period after application. **CANYON TONE STAIN** requires complete evaporation of water to achieve cured properties. Cool temperatures and high humidity will retard cure. **Do not apply if weather conditions will not permit complete drying of material before rain, dew, fog or freezing temperatures.**

CANYON TONE STAIN is a low viscosity material designed to provide color uniformity and water repellency without disturbing the natural texture of the substrate. **It is not designed to fill or water-proof porous substrates under wind driven rain or other severe conditions.** For applications requiring waterproofing, a membrane-forming coating such as UNITED's **Aquathon, Aquathon 150** or **Master Wall** should be utilized.

Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator should be worn by Applicator. For interior applications, provide mechanical exhaust ventilation. Air line masks or positive pressure hose masks should be worn during interior applications.

For additional information on safety requirements, refer to OSHA guidelines and **CANYON TONE STAIN** Material Safety Data Sheet.



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