



Technical Application Specification: TAS - 370

CHROMA STAIN (ACID STAIN)



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Purpose and Scope of this Specification:

This specification shall act as the Floric Polytech Inc. Manufacturers Standard Application Specification of Installation Procedures for Floric Polytech Chroma-Stain. These application procedures for Floric Polytech Chroma-Stain are intended solely for applications over previously prepared, structurally sound concrete surfaces (for any other surfaces: Consult Floric Polytech Inc.), by professionally trained and qualified contractors with full knowledge of industry standards and practices. Floric Polytech makes no claim to contractor's qualification; however annual training schools are available for contractors seeking "factory trained" status for warranty purposes.

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Product Description:

Florid Polytech Chroma-Stain is a single component coloring solution of acidic metallic ion particles (acid stain), which when placed on the cementitious surface chemically reacts with the metallic ions with the particles in the cement (free alkali) to form oxides in the pores of the concrete. These oxides become a permanent part of the substrate and will not crack or peel. The resulting effect creates a colored translucent, variegated and some times marbled effect. For example, the formation of an iron oxide will produce a reddish brown mottled rust color, or the formation of a copper oxide will produce a bluish green color. Considerable variations in color and tone normally result from the use of Chroma-Stain acid, and many special color effects may be achieved using different application techniques. Acid stains may give you a unique looks and visual character that cannot be achieved using conventional polymer or pigment type stains, this is due to the acid reacting individually with each substrate depending on its cement content, age, porosity and the manner in which hydration took place. These variables are the reason for its inherent beauty.

Thickness: N/A (Penetrating)

Description/Packaging & Coverage:

<u>Item #:</u>		<u>Amount Required (Per 100 sq ft)</u>
2900-Color	Chroma-Stain (1 gallon / 3.78 liters)	
	Coverage: 200 sq ft per gallon (one coat application)	1 gallon
	Coverage: 400 sq ft per gallon (two coat application)	2 gallons

NOTE: Varying job site conditions such as porosity and texture of the surface, may effect actual material consumption. The above table is designed only as a guide in determining actual materials required. Mock up samples and/or job site mock-ups are highly recommended.

NOTE: Coverage will vary widely depending on the porosity and texture of the surface a minium of two separate chroma-stain applications is normally required, however one application may be made if effect is reached in a single coat application. Weathered and old worn concrete may require additional applications of stain to obtain particular effects. Chroma-Stain when applied undiluted will cover approximately a minimum of 200 ft²/ per US gallon (3.7 – 4.9 m²/L) per application.

Test Sections and Mock ups:

Staining and antiquing are expressions of individual talents and techniques. Experimentation with colors and application procedures are highly recommended prior to tackling a project with this product. It is recommended that samples and mock-ups be used. Representative test sections must be produced on each concrete surface or topping to be stained and sealed for the Owner's approval in writing, and even then variation should be expected as substrate free alkali levels change, which effect final color.

1) STEP ONE: SURFACE PREPARATION AND SURFACE EVALUATION

Cleaning of Flatwork: Use a heavy-duty rotary floor machine that operates at approximately 175 rpm and is equipped with a brush or with a pad-driver. Use a suitable commercial detergent, bristled brush or janitorial pad on standard concrete, however care must be taken when cleaning toppings not to scratch or scare the surface with too heavy of an aggressive brush or pad, test a small obscure area first prior to general cleaning.

Cleaning of horizontal or vertical surfaces: Use a pressure washer or steam cleaner, equipped with a fan tip that has a minimum pressure capability of 2000psi (14 Mpa). Care should be taken not to over expose areas of surface, leaving wand patterns in the finished substrate.

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Using equipment and procedures described in the above section, thoroughly clean surface, surface should be free of any containments that will impede the penetration and reaction of the stain. Contaminant such as: sealers, bond breakers, paint, oils curing compounds, etc, will inhibit the Chroma stain from reacting with the free alkali thus not producing color. Failure to remove all contaminants and coating that impede the penetration of Chroma-Stain into the concrete will cause severe appearance defects. After cleaning, rinse the surface until the rinse water is completely clean and mask off all adjoining walls and surfaces. Allow the surface to dry completely before applying the chemical stain. **Caution:** Do not use acid washing as a cleaning method for surface as this reduces and may eliminate the surface ability to react with stain.

Newly placed concrete:

New concrete must be protected from damage and allowed to cure a minimum of 14 days. Do not use liquid curing materials. Cure concrete flatwork with new and unwrinkled, non-staining curing paper. Cure all surfaces by the same method and apply the chemical stain when the concrete is at the same age. Immediately prior to stain application, clean the cured concrete or topping surface thoroughly. Sweep the surface, then pressure wash or scrub with a rotary floor machine and detergent.

Existing, older concrete:

Existing or old concrete must be completely clean and penetrable. Pressure wash or scrub to remove dirt and other contaminants. Sandblast concrete that has been preciously coated with liquid curing materials, paints, coatings, waxes, or water repellants, or surfaces that cannot be successfully cleaned by other methods. Shot blasting surface may leave cornrow profiles in floor and may need to be followed by a light terrazzo grinding application. Remove small spots of paints with a scrapers and a commercial paint stripper. If the chemical stain does not react on dense, hard-troweled floors, open the surface by lightly acid washing with a very diluted acid solution or by light sandblasting or terrazzo grinding. After rinsing and drying, inspect and test he surface for penetrability. Perform additional general or spot cleaning and rinsing as necessary.

2) **STEP TWO: STAIN APPLICATION**

Equipment:

Floric Polytech Chroma-Stain is normally brush applied and scrubbed in to surface, or in large areas a two person crew may use a hand pump up sprayer and scrub application one following closely behind the other, one applying the stain solution and the other scrubbing it in. Using different application tools such as lambs' wool applicators, sea sponges, and small spray bottles for sprit zing on additional colors may create special effects. Test sections must be applied using appropriate cleaning and application method before use and application of project.

Protection:

Care must be taken to protect surrounding areas, masking with plastic or standing laminate shield in saw cuts. Saw cuts must be deep enough to keep stain from traveling or bleeding into adjacent areas. Do not use porous masking, paper or cardboard materials. **Note:** Protect walls and surrounding surfaces not to receive concrete floor stain. Do not allow stain to come in contact with wood, metal or any surfaces not intended to be stained. **Caution:** Acid stain fumes may rust certain metals; take care to protect any exposed metal in and around application area.

Cleaning:

Clean all surfaces as described in step one (Surface Preparation and Substrate Evaluation). Divide the area into work sections, and apply the Chroma-Stain solution at the coverage rate given above. Safety precautions must be followed and full protective gear must be worn. The color of the Chroma-Stain solution will not resemble the final color, but will be transformed after first applied, turning cloudy as reaction occurs. The Chroma-Stain solution should fizz when applied if it does not, additional cleaning is needed or the surface is not sufficiently reactive in order to be chemically stained (having not enough free alkali to create a reaction).

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Manual Application for Small areas:

For manual application method of transferring use a professional grade acid resistant brush, with uncolored nylon bristles of medium stiff ness that has the ability to hold liquids. For even smaller areas use an inexpensive bristle or foam paintbrush, replacing them often to avoid surface contamination. Transfer the Chroma-Stain solution to the surface and immediately scrub in with a brush. **Note:** Do not use push brooms, mops or rotary floor machines for applying stain. Containers used for transferring material must be acid resistant none leaking, such as plastic pails and plastic mop buckets with nylon rollers. **Caution:** Do not use metal containers.

Manual Application for Larger areas:

For larger areas, pour the solution into a plastic container and lift from the container to the concrete with the brush, holding the bristles upward, or spray the solution evenly across the surface a few inches ahead of the brush while scrubbing. When spraying use a professional grade plastic acid resistant hand pump sprayer to apply material, followed directly by scrubbing with a bristle brush. **Note:** Do not apply using an airless paint sprayer or pressure pot.

Scrub the Chroma-Stain solution into the surface using a circular or figure eight motion, working in small sections and keeping the brush in contact with the concrete and in continuous motion. Gradually spread the Chroma-Stain solution until all fizzing action ceases. Do not spread reacted material to new sections, but brush it back over the section just treated. Maintaining a wet edge, work new Chroma-Stain applications into the edges of adjacent, still-wet, previously treated areas. During scrubbing, keep the surface thoroughly and uniformly saturated. **Caution:** Do not allow the liquid to splash, drip or puddle in joint indentations and depressions unless desired for the color effect.

Vertical Surfaces:

Apply the Chroma-Stain solutions to vertical surfaces using the same methods as above, starting at the bottom and working upward. Avoid excessive rundown. Allow the Chroma-Stain solution to remain in contact with the concrete until the desired effect is obtained, minimum of approximately four hours. Apply additional coats in the same manner, normally allowing the residue to remain on the surface between coats. **Note:** Take proper precautions to prevent contact with the surface until the residue is removed and the surface rinsed.

Neutralize:

After the final application has remained on the surface for a minimum of approximately four hours remove all residue by wet scrubbing with a detergent, then rinse until the water is completely clean. Neutralize surface with a diluted solution of 1 pint common household ammonia to 5 gallons clean water, followed by a thorough rinsing with clean water. **Note:** Once rinsing has begun, do not allow Chroma-Stain residue to dry on substrate, until substrate is completely clean and neutralized. Color streaking may occur if residue is allowed to oxidize. **Caution:** Check the pH of the surface using a litmus strip or pH pencil. If properly rinsed and neutralized, the pH should be in the range of 10-13 pH.

Clean-up and Collection:

Since Chroma-Stain may stain adjacent areas or harm plants, collect runoff by wet vacuuming or absorbing with an inert material. Dispose of all stain residue, runoff liquid, absorbent materials used during application, and discarded equipment in accordance with local, state, and federal regulations. **Note:** Use a acid resistant wet dry vacuum to recover diluted and neutralized Chroma-Stain residue, all run off should be contained and recovered using a vacuum or inert absorbent material scattered over the surface, rags may be used to wipe surface residue materials.

3) STEP THREE: GROUT (OPTIONAL)

Feature saw cuts maybe grouted at this point, using conventional polymer modified grouts. **Note:** However some colored grouts may need the surface to be sealed first to avoid grout staining of adjacent surfaces.

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4) **STEP FOUR: SEALING OR COATING FLAT WORK:**

Once surface has completely dried, which is normally a minimum of 24 hours after last surface rinsing. Surfaces should be sealed with a Floric Polytech Sealer as soon as possible to avoid surface contamination of dirt and dust. Interior application may need fans to evacuate high humidity to speed dry times, however fans should not be used to speed stain reactions times. **Note:** Floric Polytech offers a wide array of sealers, please consult your local Floric Polytech Representative for a sealer recommendation based on your projects specific requirements or call Floric Polytech toll free at 1 (866) 4 FLORIC. **Caution:** Selecting the wrong sealer can have a detrimental effect.

Sealer Curing, Protection and Cleaning:

Allow Floric Polytech sealer to fully cure, and inspect all surfaces prior to opening for traffic. Depending on the specific sealer used cure times will vary, refer to the specific technical data sheet for more information on individual cure times of sealers. Generally 24 hours minimum cure time is required for light foot traffic and 72 hours for Scissor lifts and heavy rolling loads. It is recommended that protecting board be used during subsequent construction phases.

5) **CARE AND MAINTENANCE:**

Surface may be cleaned using clean water and a non-caustic, biodegradable detergent cleaner with a damp mop application. Maintain Floric Polytech Chroma-Stain application via occasional waxing with Floric Polytech Synthetic Floor Finish (SW-117 or SW120). **Note:** Certain sealers such as Epathane 'CRU' and Polyaspartic 'HS' should not be used when a wax maintenance is required for project surface, consult a Floric Polytech factory technical representative for more information and sealer compatibility.

ENVIRONMENTAL CONDITIONS:

1. For safety reasons and the drying/curing process, adequate ventilation is required during the entire installation process of both to evacuate any fumes, and to reduce build up of moisture for the Chroma-Stain and subsequent sealer application.
2. Sealer should be applied in declining temperature to avoid out gassing of substrate which could affect sealing application cure.
3. A five percent variance between wet bulb reading and relative humidity is required prior to the application of sealer.

GENERAL CAUTIONS:

1. Read and follow Floric Polytech technical application specification TAS – 2002
2. Always obtain, read and observe Manufacturer's safety data Sheets (MSDS) before handling resinous materials. Become familiar with the products on paper before you open the container.
3. Read and observe precautionary statements on product labels.
4. Keep containers tightly closed.
5. Keep out of reach of children.

6. For proper workability it is important that the Floric Polytech materials be stored and mixed at a temperature of 55°F - 80°F (18°C - 26°C).

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7. All concrete curing agents, sealers and hardeners must be removed from the concrete prior to application of the bond coat.
8. Good ventilation must be provided during application, particularly in confined spaces.
9. To avoid a FIRE HAZARDS. Do Not Use any cleaning solvents such as (Acetone, Xylene, lacquer thinner, toluene or MEK etc) in conjunction with any powered tools or equipment i.e. (grinders, floor buffers, sanders, etc) when cleaning floors or removing existing coatings. Avoid working in areas with exposure to open flames such as heater, oven with pilot lights, welding or cutting equipment and any other such source of open flame. Please think and act safely when working with any flammable materials.

ADDITIONAL NOTES:

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