



# Concrete Acid Stain Technical Data

## Technical Data

**Product Descriptions & Uses:** Concrete Acid Stains are designed to enhance new and existing concrete surfaces by adding decorative and unique shades of color. The variegated and translucent color effects are a result of the unique formulation of blended acid metallic salts in water - based solutions that are slightly acidic. This provides a variation of earth tone colors similar to the oxidation of a copper roof or the patina of a bronze sculpture.

The stains lightly etch and penetrate new or existing concrete and chemically form permanent insoluble colored precipitates that remain in the concrete as part of the surface pores. Concrete Acid Stains can also be used on various other cement based materials including, but not limited to, self leveling and other topping systems, gunite, cement plaster, stucco, and shotcrete. They can also be used on other products such as natural stone, marble, limestone, etc.

Concrete Acid Stained floors are superior in durability and abrasion resistance to that of concrete surfaces coated with acrylic stains or other types of paint which can wear or delaminate. Because of the chemical reaction with concrete, Concrete Acid Stains become part of the surface and will not chip, crack, peel, fade or wear only as to the wear of the concrete. This variegated finish includes a wide drift in each of the colors that is not considered a defect, but rather a reason this method of concrete coloration is chosen. There are ten standard colors that can give you numerous appearance variations by applying over one another.

**Limitations:** Concrete Acid Stains are not to be used in order to hide or cover any blemishes or errors in construction. In certain cases, the stains may accent finishing marks or blemishes in concrete in an unpredictable manner.

Direct Colors Concrete Acid Stains require various times of activation in order to achieve optimal performance. Because of this, when stains are first applied they appear different than their end result. Each individual concrete substrate will produce varying, unique results. Some of the many factors that can affect the appearance include, but are not limited to: finishing technique, mix designs, curing practices, age, condition of concrete, porosity of concrete and base color of surface.

Concrete Acid Stains bring an element of uncertainty and unpredictability in its final appearance, which can include uneven or molten effects. This is not considered to be a defect, but the reason this method of coloration is chosen. It is always strongly recommended to sample the color on the same surface to be stained to be sure the finished appearance is desirable.

**Materials and Composition:** Concrete Acid Stains are composed of a unique formulation of blended metallic salts, in an acidic, water based solution. These metallic salts penetrate and react with the chemical substance in concrete to deposit the colors into the pores of the concrete. Each color is composed of a complex proprietary formulation containing no pigments or resins. This formulation creates a more effective chemical reaction and deeper color penetration.

**Application and Color effects:** Many different affects and appearances can be achieved using Concrete Acid Stain. **Test samples help determine both if the surface can be successfully acid stained as well as to select the best colors for your project. When preparing the surface to be stained, do not use an acid wash or**

**use muriatic acid to clean the surface, as this will remove the free lime needed for its reaction in the concrete.** Experienced applicators may want to sand the surface prior to staining using a floor polisher with a maximum of 50-100-grit mesh or paper. The function this will serve is to open the pores of the surface. The surface must then be cleaned thoroughly and completely dry before applying stain. For machine troweled or excessively polished floors, apply **DCI Hard Troweled Floor Prep** to open the pores of the concrete before staining. To avoid costly application errors, drop a teaspoon or less of stain onto the concrete before applying stain to an entire floor. If the stain produces a fizzing reaction, your surface is ready for staining. If not, the concrete may have been cleaned with muriatic acid, machine-troweled or waterproofed during the pouring process. For more information contact Direct Colors or visit our website, [www.directcolors.com](http://www.directcolors.com).

The application of the stain will vary according to size, design and desired effect. Each of our acid stain colors can be cut with water to produce an array of different colors and shades. However, if the water content is too high, the chemical reaction between the acid and the concrete won't be strong enough to color your project surface. We do not recommend cutting our stains by more than 4 parts water to 1 part acid stain ratio when staining your floor. Some colors vary more than others when increasing the water content and many factors determine how dark the stain will take such as age of concrete, cement content and weathering. As the acid stain dries and processes, an alkali and minerals residue will form on the surface of the concrete. This is completely normal and is part of the reaction process. Each stain has different activation times to fully color the concrete, generally from two to eight hours. However, the stains can be left on for longer if a darker color is desired. For larger areas consisting of one uniform color, we recommend a plastic pump sprayer (no brass or metal nozzles, as this will corrode).

When you first apply the stain to the surface you should notice a light "fizzing" reaction with the concrete. This is the metallic salts and acid reacting with the free lime of the concrete and is a sign that the surface is accepting the stain. Do not rinse surface between coats, but allow each color to remain on surface for the allocated amount of time referred above in order to achieve optimal performance. There are several techniques for acid staining floors to choose from. The basic technique has been described above. To produce a "marbled" effect with distinct areas of color, begin with your lightest color as a base coat. Base coat colors can either be a light acid stain color such as Azure Blue or Malayan Buff or one of the darker stains cut with water. Apply one heavy coat of your base color and allow to dry for one hour before spraying additional accent colors. Continue to apply the lighter to darker colors to accent the floor until satisfied with the results. Reserve a quantity of your base color to spray a thin coat of stain over the entire floor after applying the final accent color. This will "float the color in" to avoid a blotchy look on the floor and produce a more even overall appearance.

For a veined appearance, spray your secondary or "veining" color on the surface first. While still wet, feather the primary color into and around the secondary color allowing it to flow together at the edges. Be careful not to cover your secondary color completely especially if it is a lighter shade. This will produce a more diffused and natural appearance.

After the final coat of your stain has been applied, completely dried and has processed for the minimum recommended time, remove the white salty residue with a

mixture of water and baking soda to clean and neutralize the surface. Brushes and soapy water can be used to remove stubborn debris. After surface is completely dry with no standing water or moisture, the surface can then be sealed to protect from any harmful elements.

**Sizes:** Concrete Acid Stains are available in quarts (.94 liters), one gallon (3.78 liters) and five gallon (18.9 liters) containers. Samples kits are available with all colors for testing purposes.

**Coverage:** Coverage will vary widely depending on the porosity, texture of surface, application technique, age of concrete, number of applications and various other factors. A typical gallon should give you a cover approximately 200 square feet. (18.58 square meters)

**Shelf Life:** The typical shelf life of our Concrete Acid Stain is one year from date of purchase. Containers should always be stored out of direct sunlight, tightly closed and upright.

**Warranty:** Since no control is exercised over the products use, Direct Colors warrants only that our products are of consistent quality within manufacturing tolerances. No other oral or written representation or statement of any kind, express or implied, now or hereafter made is authorized or warranted. The sellers and manufactures obligations under this warranty shall be limited to refunding the purchase price of that portion of the material proven defective. Seller and/or manufacturer will not be liable for special, incidental or consequential damages, including for delays or lost profits. Communication of this warranty and its limitations to end-users is not the responsibility of Direct Colors Inc. but should be communicated by those in direct contact with the end user. Any claim regarding product defect must be received in writing three months from the date of manufacture. No claim will be considered without such written notice or after the specified time interval.

**Cautions:** DANGER! OXIDIZER! CAUSES SEVERE EYE AND SKIN IRRITATION AND POSSIBLE BLINDNESS! CAUSES EYE AND SKIN BURNS! MAY BE FATAL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN! PROLONGED OR REPEATED BREATHING MIGHT CAUSE ULCERATION OR PERFORATION OF NASAL MEMBRANES. EXPOSURE TO BROKEN SKIN MAY RESULT IN ULCERS. CANCER HAZARD DEPENDS ON THE LEVEL OF EXPOSURE AND DURATION. KEEP OUT OF REACH OF CHILDREN! FOR PROFESSIONAL USE ONLY! WEAR RESPIRATOR, PROTECTIVE CLOTHING, GOGGLES AND GLOVES.

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