

Acid Stain Information Sheet

About Acid Stain

Acid Stained floors are growing in popularity. Many people are looking to stained floors as an alternative to carpet, tile and wood. The information below is an introduction to Acid Stained floors.

Acid Stain is not a paint or coating agent, rather, it is a coloring process involving a chemical reaction on a cementitious material. A solution made with water, acid and inorganic salts reacts with minerals already present in the concrete; the result of this reaction is color. Chemical stains can be applied to new or old, plain or colored concrete surfaces. Although they are often called acid stains, acid isn't the ingredient that colors the concrete. Metallic salts in an acidic, water-based solution react with hydrated lime (calcium hydroxide) in hardened concrete to yield insoluble, colored compounds that become a permanent part of the concrete. There are many manufactures of Acid Stain and most produce stain in 8 colors that are variations of three basic color groups: black, brown, and blue-green. The basic 8 colors are:

Color Chart



Tan
Suede tone with
caramel marbling
and Rust



Brown
Reddish brown
resembling old
leather (Cola)



Black
Tortoise shell
black with brown
marbling



Blue
Soft blue patina
with undertones of
moss green



Red
Terra cotta with
rust and brown
hues



Gold
Amber hued
undertones with
Rust and Tan



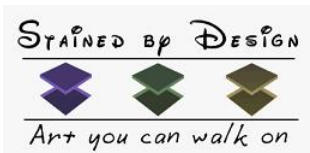
Green
Grey green
resembling aged
Italian marble



Umber
Earthy brown with
red and black
highlights

Acid Stain gives concrete a mottled, variegated, marble-like look. Never expect Acid Stain to be uniform or have an even tone, you will get different reactions from slab to slab, and even on the same job you may see different coloration patterns. Variations of colors and mottling are to be expected and enjoyed. It is the random mix of tones and shades that gives an acid stained floor its unique beauty.

Some stain manufactures will use adjectives such as Vintage or Antique to describe their version.



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How Stain works

Acid stains are made from hydrochloric acid, wetting agents and metallic ions. When this solution is placed on concrete it colors the concrete by chemically combining the metallic ions with the particles in the concrete to form oxides. The finish won't fade or chip—it is permanent. The acid in chemical stains opens the top surface of the concrete (this may be referred to as “etched”), allowing metallic salts in the mixture to reach the free lime deposits. Water from the stain solution then fuels the reaction. Stain will normally be applied to a surface for 4 hours. However, the surface will continue to develop its patina—an appearance of something grown beautiful especially with age or use; established character—for several more hours.

Other factors that affect the outcome include:

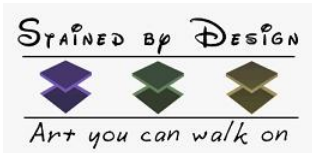
- Cement properties and amount
- Admixtures used
- Type of aggregate used
- Concrete finishing methods
- Concrete age and moisture content when stain is applied
- Weather conditions when stain is applied
- Efflorescence

In general, cements that produce larger amounts of calcium hydroxide during hydration will show more stain color, and higher cement contents produce more intense colors. If they are near the surface, calcium-based aggregates, such as lime-stone, take stain readily and deepen the color of the concrete above them. Solid aggregates, such as gravel, don't react with the stain.

Acid stains, unlike paints, are not opaque - they are translucent. Some areas will be darker than others, similar to marble or flagstone. Along with the naturally occurring variegations and marbling - any blemishes and imperfections in your concrete simply add character and charm. Even cracks can add to the look.

For information to give to your Builder, see my **Builder Info Sheet**.

For information on how to maintain your stained floor, see my **Care and Maintenance Guide**.



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Other Stains and Dyes

In addition to Acid Stains, sometimes Acrylic Stains and Dyes are used to create a layered look of tones that are not normally possible with Acid Stains alone. These stains for example, can be used to get Browns and Greens to exist in the color palette next to each other. These stains can also be mixed together to create a shade that can be matched to a color swatch. A sample of alternative stain colors is shown below.

Translucent Concrete Stains



Adobe



Patina Green



Flagstone



Brownstone



Sandstone



Fieldstone



Slate



Terra Cotta



Coal Black



Quartz White