

Decorative CONCRETE SUPPLY

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The following is a guideline and specification for use in both selecting and application of Acid Stains

Concrete Resurrection Acid Stain

- *Will not chip, crack or peel*
- *Beautiful penetration color*
- *Helps reduce surface glare*
- *Can be applied as interior and exterior use*

The final colors of stains can not be guaranteed by use of color charts. Charts should only be used as a reference point. Each concrete slab will produce different looks depending on age, type of cement, finish and contractor experience. Success will depend heavily on stated application and surface preparation.

*The choice of both **color** and **color combinations** along with the type of sealer to be used should be outlined and decided before the job begins. Color charts should be provided. **Note** the color sample chips on stains may not give an accurate presentation as placement, type of cement, curing & surface preparations, finishing, etc can greatly affect the final look.*

Color selections

• <i>Western Saddle</i>
• <i>Brown Stone</i>
• <i>Black Walnut</i>
• <i>Rich Mahogany</i>
• <i>Golden Sand</i>
• <i>Olive Mist</i>
• <i>Clay Canyon</i>
• <i>Azure Sky</i>

*Color charts should only be used as a reference look.**

Sealer options will be given at the end of this document; sealers will greatly affect the final look of stains.

Section I

SURFACE PREPARATION

Careful consideration should be taken to insure proper curing and cleaning of the slabs. The floors should be pre-inspected by contractor, owner and architect before work begins.

*It is also recommended that concrete have a 28 day cure time before stain is applied and that a moisture migration test preformed. There should **never** be more than 3/lb of moisture transmitted during a 24 hour time frame. Calcium/chloride test the measure MVT should always be done by either the contractor or an outside testing laboratory before stains are applied. When vapor barriers are installed more time might be required before the application of stains.*

REFERENCE ASTM F1869
REFERENCE ASTM F 2170

*If moisture is an issue consider **MVERS** (Moisture Vapor Emissivity Reduction System) problems cost the construction industry millions of dollars yearly be sure tests are conducted.*

Cold weather and placement inside can slow the hydration process thus slow down the time frame for staining (pre- job meeting should be held and these issues covered when stains are specified). F/N most slabs now poured have “vapor barriers” installed these can effect both stains and especially sealers thus the need for moisture testing!

For best stain results it is recommended that Surf/Prep “a mild surface conditioner” be used on all slabs prior to staining. This will allow for more consistent results while still allowing the variegated look that stains give. Most concrete that darkens with water will accept stain.

*All cures, sealers, and glue from tile, carpet and linoleum must be **100% removed** in order for the stain to penetrate the concrete*

NEVER USE MURIATIC ACID

Acids will affect the calcium hydroxide needed for the stains to work and color properly interior masonry walls should not be cleaned with materials containing acids. ‘ADDRESS ISSUES SUCH AS THESE IS PRE-JOB MEETINGS’ (if these issues do occur use of dyes or water-based stains can help correct the problem)

When floors are tightly finished and toweled use of mechanical methods creating an ICRI / CSP of 1 or 2 can “open the floor up to accept the stains”

“ICRI Guideline 03732”

Accepted methods are:

- **buffers with black pad**
- **buffers with sanding screen**
- **grinders with metal**
- **resin pads with grits of 35 to 125 depending on the porosity of the concrete**

Following these guidelines will also allow for the sealer to also properly adhere to the concrete thereby avoiding “peeling” of sealers seen on many jobs!

Prior to application of stains and adjacent areas, walls, trim, painted projects, cabinets, woodwork etc must be protected from:

- **Overspray**
- **Run/Offs**
- **Spills**
- **Tracking “wet foot prints”**

Walls and cabinets should be protected by a minimum of 36” of protective material (2-3 mill poly and use of painters tape on finished surfaces)

PH testing of concrete ASTM F 710

SECTION II **APPLICATION**

Application of stains should be done by experienced contractors with qualified references and job referrals. Use of stains may require dilution or application on a “wet surface” in order to achieve desired results. (Stains will produce a natural mottled variegated look on cured concrete)

Application on a (test area) should be done and approved before application and the test area should dry for a minimum of 4 hours in normal weather and 8 or overnight in cold or humid conditions. When test is done the dry residue should be vacuumed and mopped clean the “wet look”. When cleaned it will give a preview of “the look” when sealing is completed.

Stains should be shaken before application just shake and rotate the container before application begins.

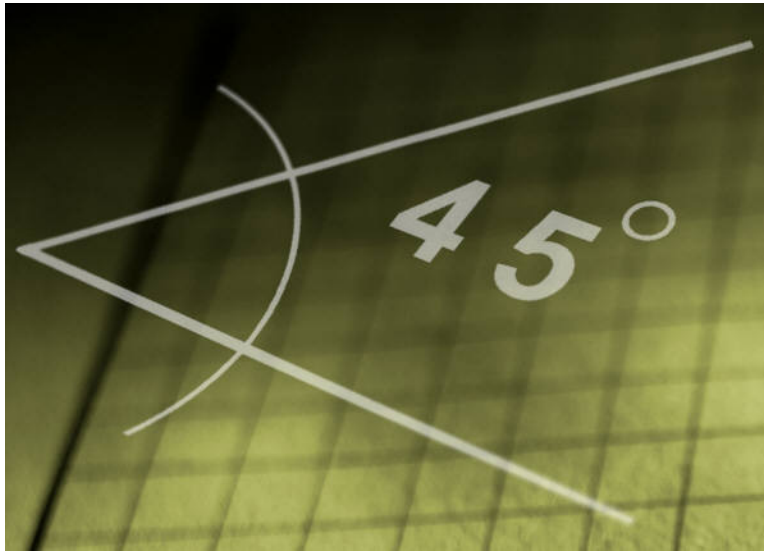
*Application should be done with a non-metallic pump-up sprayer (**SP Systems offers an excellent sprayer made for application of stains**) Spray a uniform pattern and you may use a Kraft type acid broom to hide any application swirl marks, keep a wet edge when applying and always broom in a circular motion and avoid over*

working of stains. A 2nd coat will enhance the look after the 1st coat has “dried” (**NEVER WALK IN WET STAINS!!!**) for the best results apply 2nd coat and do not broom in. Stains create an uneven variegated in the concrete and variations will and should be expected.

Stains may be applied to both wet and dry concrete when applying keeping a wet edge will give the best results, on larger projects start and stop points should be pre-determined.

When applying stains workers should wear protective gloves, and boot or shoe covers (disposable latex is fine) disposable dust masks, and eye protection should also be worn.

Concrete Resurrection Acid Stain comes in a concentrate and can be diluted at a normal rate of 1 to 1 with distilled water. When stains are diluted **1 to 1** coverage on most toweled floors will be approx 275SF/gal. More porous floors will take more stain. The most effective results will come from 2 “light” applications at different angles



Spraying from a different angle will allow for more complete coverage.

APPLICATORS

Contractors should provide both references, and any training references to both architect and owners. Lists of both completed jobs and addresses should also be provided.

SECTION III

CLEAN UP

The staining of concrete will leave a residue that “MUST” be removed before final application of stain and before any sealer is applied. Failure to remove this “residue” will result in both sealer and stain failures. The residue will be a bond breaker which does not allow the sealer to properly perform thus allowing staining to “look dull” and be subject to faster wearing. The residue should always be disposed of according to local ordinances.

When possible avoid excess water run-off

Removal of stain residue does require water all control joints or any cracks in the concrete should be checked for moisture before application of sealers! Run-off water can accumulate in these cracks or joints and affect the sealer. Many stain jobs will require specialty saw cuts!

Cutting of concrete results in a dust even with vacuum attachments, there can be a issue of dust along the edges of these cuts. So proper clean up along any cuts should be properly attended to.

SECTION IV **SELECTION OF SEALERS**

Pre-determining the correct sealer is very important in the success of stained floors pick a sealer that will hold up for the intended use of the floor (a water-based that would work in low traffic and use area would not be the sealer of choice for a high traffic kitchen area).

When ever time and work conditions allow pre-seal a small area this can show the final look of the stained project and you can use this area to see how the sealer holds up under expected conditions. When approved have approval letter signed and dated. Application of sealers should be done by experienced applicators

REFERENCE:

Murray Decorative Concrete Supply
guidelines for cures and sealers of decorative concrete

Water based sealers

These are easy to use and apply. Most will dry to clear hard surface, application should always be done over dry concrete surface. Moisture issues will lead to failures in both stains and the sealer. When applied, most water-based products appear a “milky” look, but will dry to a clear hard film. Most water-based should then have a wax applied for both scratch resistance.

Water-based can be:

- ***Acrylic***
- ***Urethane***
- ***Epoxy's***

Each of the above can provide clear hard sealed coating for the stain. Some may require a primer coat, and some may be 2 parts and will require mixing.

Solvent and Lacquer

These are a higher solid content and provide hard wear surface. They can be applied by either spraying or rolling 2-3 light even coats. This will achieve the best finished look.

Most will have a minimum solid content of 25%. Avoid applying heavy coats so the material can both dry and become hard. Application of this type of sealers produces a strong odor which can linger for up to several days, so caution should be used to avoid odor issues on interior jobs.

Epoxy's 100% solid and Polyaspartic

Excellent sealers for stained floors both are 2 part systems and will require mixing. These provide hard coating with a high gloss look low odors and will withstand high traffic and chemicals most of these types of sealers have very short working times.