



Pool & Deck Coatings

Bulletin 941

Acid Etching and Surface Cleaning Pools

Pool surfaces **must** be completely clean and free from slime, scum, body and suntan oils, algae, calcium, and other surface residue before they can be satisfactorily painted or repainted. Paint will not bond to contaminated surfaces. If you paint over any surface residue or foreign matter, it (the foreign matter) will soon disintegrate and fall away from the surface taking the paint with it. New and old plaster and bare poured concrete pool surfaces must be clean and free from oil, grease, silicone, or wax type releasing agents before they can be etched. Pools are prepared for painting by a three step procedure: (1) WASHING, (2) ACID ETCHING and (3) WASHING AGAIN. The how-to and why of each operation are covered below.

WASHING POOLS

It is important to know that **acid will not remove suntan oil, body oils, diluted hair spray, or any oily or greasy substance.** These must be removed with tri-sodium phosphate before repainting. Always use tri-sodium phosphate or pool washing compound before and after etching; then scrub and hose off with clear water.

Pools are scrubbed easier by using tri-sodium phosphate. Mix either of these powders 8 oz. (230 grams) to each gallon (3.9 liters) of water. Warm water is best for the compound dissolves faster. Mix about five gallons (18.8 liters) of this solution for each 1,000 sq. ft. (94 sq. meters) of surface to be scrubbed. Most scrubbing is done with a long handled block brush which has nylon or other stiff bristles. By using brushes of this type while scrubbing the pools, you also remove loose particles which could result in poor adhesion of the paint.

The best procedure is to scrub the walls first. Rinse the walls as you scrub so the alkaline solution does not dry on the surface. When that happens, the remaining alkaline salts could cause a loss of adhesion when the pool is to be painted. These could leave a soapy residue which would prevent the adhesion of the paint. Always use a chemical type softener and cleaner such as tri-sodium phosphate. Often when a pool is well scrubbed, the appearance will be satisfactory without repainting or with only a touch up job in a few spots. Again, it may only be necessary to repaint the floor or one or more wall sections. Always hose off tri-sodium phosphate with clear water.

ACID ETCHING POOLS

Why acid etching? Acid etching opens millions of microscopic pores. By opening the pores, the prime coat of paint is able to penetrate into the porosity created by the acid etching and create an excellent adhesion for succeeding coats. Acid etching also removes unwanted mineral deposits.

MIXING AND THE APPLICATION OF ACID

All persons participating in acid etching should wear rubber boots, rubber gloves, and wear goggles. The etching solution should be mixed in a plastic bucket. Most commercial muriatic is either 20% or 30% hydrochloric acid. Mix one part of 30% muriatic acid with two parts of water. This makes a 10% acid solution. Be sure to check the strength of the muriatic when you buy it. If it is a 20% acid, then mix one part of water to one part of acid to secure a 10% solution. For a 15% solution, mix 30% acid 50/50 with water. For 20% muriatic, mix one part of water to two parts of acid. Also, 2 lbs of sulfamic acid crystals maybe used per gallon of water.

CAUTION! ALWAYS POUR THE ACID IN THE WATER. NEVER POUR WATER IN THE ACID.

Pour the acid solution on the surface and brush it out with a long handled deck brush. Etch a small area at a time. As soon as the acid ceases to effervesce it should be hosed off with clean water. About 5 minutes is the average time for the acid to perform the etching function. Do not permit the acid to dry on the surface, as it will be difficult to remove. Figure one gallon (3.79 liters) of etching solution to each 100 sq. ft. (9.39 sq. meters) of surface. Properly etched, the surface should feel like fine sandpaper. On vertical surfaces, the etching solution should be swabbed on liberally with a mop, long handled deck brush, or garden sprayer. Drop or splash a small spot with water. If the water soaks in fairly quick, the surface is sufficiently etched. If it remains on the surface, it needs additional etching with a stronger solution.

Variations in the hardness and the density of plaster or concrete may result in smooth areas after etching. These spots or areas should be re-etched with a stronger (15%) solution. Be liberal with the acid solution. The more you put on the surface, the better the etch.

After the etching is completed and the surface is hosed off, the surface should be scrubbed with tri-sodium phosphate solution using 8 oz. (227 grams) of the compound to each gallon (3.79 liters) of warm water. Use a deck brush and plenty of "elbow grease" on this final scrubbing operation in order to remove all remaining traces of the acid. Any remaining acid could form soluble acid salts and result in a probably paint failure. The surface should then be hosed off with clear water.

Bulletin 941 continued

Most pools in good condition, except for discoloration and staining, can be cleaned up to a nice appearance by this acid cleaning. This will also remove light algae and chalk. Heavier concentrations of algae can be removed with Clorox or with a paste made of powdered chlorine and water. Apply paste with a scrub brush.

Pools painted with DURA SEAL pool coating can usually be cleaned to a "new paint" appearance. For repainting our epoxy coatings, they should never be repainted until the finish is almost worn or eroded from the surface. This means that the coating should be cleaned up until requiring paint, which usually takes from five to seven years.

Unpainted concrete or plaster must also be scrubbed with tri-sodium phosphate solution, if they have been in service. Also, if the concrete or plaster is new, they require acid etching. Then, the acid must be neutralized by washing the pool with a tri-sodium phosphate solution.

Cement paints are coarse and gritty and provide a poor appearance.

CAUTION!

Do not mix in galvanized container. Close container after each use. Avoid contact with eyes, skin or clothing. Rubber gloves, rubber boots, and goggles should always be worn by the person etching concrete. In case of contact, flush off immediately with water. For eyes, get quick medical attention. Protect evergreen shrubs, grass and plants from solution.

KEEP OUT OF THE REACH OF CHILDREN

Information herein given has been accumulated through many years of experience and verified by our technical personnel and is based upon tests believed to be reliable, but RESULTS ARE NOT GUARANTEED.

NOTE: SMART SEAL makes no implied warranty of merchantability, no implied warranty of fitness for a particular purpose and no other warranty, either express or implied, concerning its products.

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