Olympic
POOL AND DECK COATINGS

Kelley Technical Coatings

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ALL OLYMPIC PRODUCTS ARE VOC COMPLIANT

Bulletin No. 141

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 coated or recoated. Coating will not bond to contaminated surfaces. If you apply over any surface residue or foreign matter, it (the foreign matter) will soon disintegrate and fall away from the surface taking the coating 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 coating by a three step procedure: (1) WASHING (2) ACID ETCHING and (3) WASHING. The how-to and why of each operation will be 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 No. 910 POOL WASHING COMPOUND or tri-sodium phosphate (TSP) before recoating. Always use TSP or our pool washing compound before and after etching; then scrub and hose off with clear water.

Pools are scrubbed easier by using Olympic No. 910 POOL WASHING COMPOUND. If this is not available, use TSP. 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 coating.

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 coated. These could leave a "soapy" residue which would prevent the adhesion of the coating. Always use a chemical type softener and cleaner such as OLYMPIC No. 910 POOL WASHING COMPOUND or TSP. Often when a pool is well scrubbed, the appearance will be satisfactory without recoating or with only a touch up job in a few spots. Again, it may only be necessary to recoat the floor or one or more wall sections. Always hose of No. 910 POOL WASHING COMPOUND or 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 coating is able to penetrate into the porosity created by the acid etching and create an excellent adhesion for succeeding coats. Acid etching performs another very important function as it removes the "laitance" from the surface. Laitance is the fine sand, cement and grit which migrates to the surface. It forms a thin layer approximately 1/32 of an inch, (.079 centimeter) thick and is the weakest part of the slab. Unless it is removed by etching, it will lose adhesion and as it falls away it will take the previously applied coating with it. Acid etching is the most practical way to remove the "laitance".

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.

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 No. 910 POOL WASHING COMPOUND or TSP 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 probable coating failure. The surface should then be hosed off with clear water.

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 coated with OLYMPIC ZERON and POXOLON 2 (epoxy) pool coatings can usually be cleaned to a "new coating" appearance. For recoating either of our epoxy coatings, they should never be recoated until the finish is almost worn or eroded from the surface. This means that the coating should be cleaned up until requiring a new coat, which usually takes from five to seven years.

UNCOATED CONCRETE OR PLASTER must also be scrubbed with No. 910 POOL WASHING COMPOUND or tri-sodium phosphate solution, if they have been in service. If they have not been in service, and 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.

In the past, many pools were coated or grouted with a low-cost cement-base coating. This type of coating was so unsatisfactory that it is seldom used today. It was never intended to be used in swimming pools, as it does not have any of the desirable characteristics required of swimming pool coatings. This type of coating has always been good for interior and exterior aboveground masonry and concrete blocks. It is a very poor substitute for the standard pool coatings formulated from chlorinated rubber or epoxy resins.

Cement coatings are coarse and gritty and provide a poor appearance. They quickly become stained and are a perfect base for algae concentration. When any of these materials or other residue are attached to this surface, they are very difficult to remove. This type of coating will usually disintegrate within a limited time. If a surface finished with cement coating is to be finished with a good pool coating, the remaining cement coating should all be removed. Normally it can easily be removed by scrubbing with a strong muriatic acid solution at least twice. The acid should then be neutralized with TSP and hose off with clean water. Sand or water blasting is still the best way to remove cement coating.

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.

WARNING!
If you scrape or remove old paint, you may release lead dust. **LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE.** Wear a NIOSH approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at **1-800-424-LEAD** or log on to **www.epa.gov/lead**

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: KELLEY TECHNICAL COATINGS, INC. 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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