



Product Application Sheet

Pool Shell Preparation

The interior cementitious finish of a pool is the only cosmetic part of a pool that is handcrafted in an uncontrolled environment. For this reason it is **absolutely imperative** that supervision of the shell and shell preparation prior to plastering be carefully monitored and any questionable areas corrected. This includes:

NEW CONSTRUCTION

- Step 1.** High or low spots in the shell **need** to be ground down or filled to help the applicators apply a consistent $\frac{3}{8}$ inch (approximate minimum) finish thickness. Hydration problems can occur if the finish is applied too thick or too thin.
- Step 2.** Weepers, return and suction line penetrations **must** be sealed with hydraulic cement at least seven days prior to cleaning and acid washing the pool shell. Possible voids may create leaks and gray streaks.
- Step 3.** After a **minimum 28 day cure**, the pool shell should be de-watered, cleaned, and acid washed. Extremely wet areas in the shell will cure differently and create shaded areas. **Example: A wet bowl can cause a halo around the main drain.**
- Step 4.** The equipment and electric hook up **must** be in place before the final finish is applied. Proper fire-up, immediately following the pool fill helps correct any environmental problems the applicators may experience during the finish application.
- Step 5.** "Where uncontrollable ground water or rainy season is prevalent" a dead line **must** be installed.
- Step 6.** Acid wash, neutralize, and rinse entire pool surface to remove efflorescence, and debris.

Note: The use of a scratch coat is recommended to promote a good bond and even curing when the shell has porosity problems. This includes renovation as well as new construction.



RENOVATION

- Step 1.** Inspect the existing pool surface for degradation and stains. There is usually a reason why these problems occur. Re-plumb chlorinators with a Hartford loop, tether floaters, remove metallic pool fittings including pipe and replace with plastic. Replace bronze gate valves with plastic ball valves, install bypasses on heaters, and discontinue the use of metallic algaecides. If the pool is stained always lower the pH and add a testable sequestering agent to pre-release any existing metal stains that exist within the plumbing system for at least a week. This will help prevent metallic stains from re-staining the new finish. Repair all leaks.
- Step 2.** The use of a scratch coat is recommended to promote even curing and a good bond over an existing finish. Whether shotcrete, gunite, poured, or hand packed, every pool shell is different because of location, environment, and especially the competency of the technicians on the job. **Assume nothing.** Be there and manage the job. The pool contractor is responsible for the entire construction of the pool, start to finish. We are working with a cementitious product that takes up to a year to cure. Follow manufacturer's recommended start-up procedures. Maintenance and operation is also critical during this 10 - 12 month period.

Renovations need inspection and correction of existing troublesome conditions to prevent the same unsightly circumstances from re-occurring.



Hydrazzo® Application

- Step 1.** Prep the pool surface according to manufacturer's recommendations.
- Step 2.** Drain all water from equipment and pipes and/or plug return lines before application. All weepers and plumbing leaks should be repaired at least 24 hours prior to application.
- Step 3.** If calcium chloride is needed, pre-dilute and screen calcium chloride in 5 gallon buckets of water. One for each batch. Excess calcium (1.5%+) causes trapped moisture (graying/hydration), rapid drying causing checking and /or crazing, poor bonding and the inability to close off, working the water, air and fines to the surface.
- Step 4.** Add a measured amount of water to mixer with calcium chloride liquid. Dispose of residue in an environmentally safe manner.
- Step 5.** Add proper number of bags according to mixer capacity. Make sure to box different batch numbers.
- Step 6.** Mix 6 to 8 minutes. Short mix times create a false set; prolonged mix times do not allow enough troweling time.
- Step 7.** Apply evenly (min $\frac{3}{8}$ ", max $\frac{3}{4}$ "). The use of a $\frac{3}{8}$ " calibrated rake helps. Material that is too thick (over $\frac{3}{4}$ ") is not effectively troweled unless it is layered. Material that is too thin can dry too rapidly causing cracking and/or crazing.
- Step 8.** Fill in spike holes with aggregate and cement, not just cream.
- Step 9.** Finish trowel for a good bond, and smooth finish as you would a white plaster pool. Hard trowel waterline tile, decorative tile, seats and steps front and back to eliminate shrinkage.
- Step 10.** During final trowel remove accumulated excess paste with trowel from surface into a bucket for disposal. This will help reveal divots, spike holes, or trowel marks for immediate repair and promote a better exposure. Expose the same day after at least 4 hours of cure time in a warm environment 80 degrees and rising. An overnight cure is not a problem as long as the material is well troweled*.

Note 1: Troweling spreads smooths and compresses the mixture driving the larger aggregates back and bringing the mediums and smaller aggregates forward. At the same time troweling works the cement paste and mix water to the surface reducing the amount of water in the mixture, reducing hydration problems and shrinkage that causes check cracking and/or crazing (low humidity, heat, wind, etc.).

Note 2: In adverse conditions (dry heat, wind, etc.) Mist pool surface to prevent crazing during overnight cure.



Hydrazzo® Exposure Phase (Minimum of 2 Personnel)

Step 1. Mix 1-gallon acid with 3 ounces of acid wash additive (liquid dish detergent such as Dawn).

Example: 6 gallons of acid with 18 ounces of acid wash additive in a 15-gallon carboy or other plastic container. You now have one consistent mix for approx. 800 square feet of surface area walls and floor.

Step 2. Saturate finish with clean fresh water to prevent over penetration of wash down solution. *Keep finish saturated with water.*

Step 3. Generously sprinkle neutralizing agent (sodium bicarbonate) in approximately an 8-foot diameter around the main drain (the deepest part of the pool).

Step 4. Place a submersible pump in main drain or the deepest part of the pool, to immediately remove neutralized acid from pool.

Step 5. Using an acid resistant garden hose, squirt fresh water backwards into the drum or carboy to prime siphon until bubbles stop. Allow siphoning until acid runs freely. Use a ball valve on the end of the hose for regulation.

Step 6. Keep the walls and floor saturated with fresh water prior to acid washing.

Step 7. Acid wash the walls from the floor up and then the floor from the deepest end to the shallow end. Allow 30 seconds of contact time before rinsing with fresh water.

Using a stiff bristled brush, spot acid wash any remaining pasty areas. **(Use the acid wash procedure to expose the aggregate as evenly as possible before polishing.)**

CAUTION: Failure to remove the excess paste in the above procedure will result in an uneven cure causing (graying, blotching, mottling), and other hydration problems associated with poor workmanship. White aggregate pools are more difficult to expose properly because there is no colored quartz aggregate to target. Please follow the directions carefully to achieve the greatest results possible.

Step 9. Thoroughly rinse the pool.

Note: Plastic Sprinklers cans may be used on small pools and spas.



Hydrazzo® Polishing Phase

Use the Mini-Mag™ to polish the pool to a smooth texture. **DO NOT EXCEED 2500 PSI.** Be careful to stay away from the tile line to prevent the diamond abrasives from scratching the tile. Use a Hydro-Glove™ with the Hydro Abrasives™ to hand polish the hard to get areas such as inside corners of steps, swim-outs, bench seats, waterline tile and around light niches. Allow the tool to do the work.

- Step 1.** After polishing phase carefully spray down finish with pressure washer and brush to remove remaining residue.
- Step 2.** Give homeowner a used Hydro-Pad™ for future removal of stains or rough areas.
- Step 3.** Fill pool with no interruptions and follow start up procedure. Brush the pool.
- Step 4.** Maintain the pool water using the "Saturation Index" and a good testable sequestering agent to help prevent scaling (efflorescence), a normal phase of the hydration process. Do not exceed chemical levels recommended by the manufacturer. *Dilution is the low cost solution!*

Note 1: *The use of metallic sanding discs or hydraulic oil driven polishing equipment can permanently destroy the curing phase of a cement finish. The acid solution with soap is very important to achieve contact time without over exposing finish. Soap is high in alkalinity and buffers the acid strength.*

Note 2: *The curing process of dark plaster causes more visible efflorescence, which are calcium hydroxide crystals forming in the capillaries and on the surface of the pool. This phenomenon can be controlled with a proper start-up procedure. A proper start-up consists of chemical balance and brushing. After 28 to 60 days this initial curing process usually stops. The beauty of Hydrazzo® is that it can be re-acid washed and polished if proper start-up is not followed. The deepest area of the pool should be protected with sodium bi-carb or soda ash during the acid washing process preventing over exposure. **Care should be taken to ensure that the acid solution is completely neutralized and removed in an environmentally acceptable manor.***

Note 3: *Different aggregate finishes have different water demands. That means: If the aggregate is still absorbing water as it is being pumped or troweled it can get hard prematurely in the hoses or as it is being troweled. This can appear as being too lean in cement. Follow the manufacturers directions. Mix batches adequately before applying which is usually 6 to 8 minutes after the last bag is dropped. The material will stay trowelable longer for better compression eliminating shrinkage and hydration problems.*

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