

AQUAGUARD® 5000

APPLICATION RECOMMENDATIONS

FOR CONCRETE, PLASTER & FIBERGLASS

SWIMMING POOLS, SPAS & FOUNTAINS

Section 1 – Introduction

- 1.1 This document has been prepared to establish acceptable practices and guidelines for application of **AquaGuard®** epoxy coating products on swimming pool & spa surfaces. These recommendations are intended, to assure that the restoration of the swimming pool or spa surface will meet the manufacturer's criteria for the proper application of **AquaGuard®**.

The procedures outlined in these recommendations apply to all concrete or plaster swimming pools, spas and fountains.

Section 2 – Preliminary Preparation

- 2.1 All pools should be drained away from the pool itself, not in the immediate area. Utilize storm drains when available, no less than one hundred feet away from pool.
- 2.2 If necessary, groundwater should be stabilized by removing the hydrostatic plug at the bottom of the drain. It may also be necessary to install an overhead well point if groundwater is higher than 24 inches above the pool bottom. You may consult a pool professional.
- 2.3 Remove or cover any hardware, hardware accessories, plates, machined surfaces, light fixtures, or other similar equipment to avoid contact with the **AquaGuard®** epoxy material. Apply 1-2 rows of Red Duct Tape to waterline tile – this is a 14 day tape and may be purchased at Home Depot or Sherwin Williams, or similar no residue duct tape.
- 2.4 Dewatering a Fiberglass Pool - There are many Fiberglass Pools that were installed with side wall mount main drains. And no underground well point found at the deep end of the pool. In these circumstances we recommend the following procedure: Drill a 1" pilot hole at the lowest point of deep end to allow ground water into the pool. Keep a sump pump on till ground water has completely percolated from the ground for neutral balance. Now drill a 2 ½ " hole with a hole saw bit, you will need to install a SP1022 fitting into the floor with 4 stainless steel self-taping screws (#10 1/1/2 length) and fast set marine 5200 Silicone. Once installed let dry 1 hour then hook PVC pipe to overhead Pool Pump, let run for 24 hrs. per day during project. Once filling remove pipe and

install a Hayward 1 ½ in. flat vacuum cap to fitting with Silicone Sealant (NOTE: All parts available with order).

- 2.5 Installing Waterline Tile to a Fiberglass Pool or Spa - Level Waterline with a 3/8" clear 50' Tube or Laser. Mark Pool every 6" with a Pencil. You will need Fast Set silicone (from Aquatic Technologies) and Power Grab (Home Depot). Apply 3 rows Fast Set and 2 rows Power Grab every 3-4 ft. Apply tile immediately and let dry 24 hours. Grout Tile with Acid Resistant Grout, let dry overnight. Next Day tape tile completely with Red Duct Tape. Apply **AquaGuard®** Trowel Patch to top and bottom of Pool tile, this will secure the tile from water intrusion or lifting off. Let dry 6-12 hours to set then sand if necessary. Now begin **AquaGuard® 5000** coating Application.

Section 3 – Surface Preparation

- 3.1 Surface preparation is the most important step in the application of **AquaGuard®** Coating. Improper surface preparation is responsible for most of the problems associated with dis-bonding or delamination of a coating material on concrete, steel or fiberglass surfaces. As much care as possible must be taken to insure good surface preparation.
- 3.2 Before applying **AquaGuard®**, the entire surface must be thoroughly cleaned using a high pressure cleaner to remove any loose Marcite, dirt, grease, oil, release agents, or other surface contaminants or residue. In some cases, a diluted solution of trisodium phosphate (TSP) and water can be used to remove stubborn oil and greases (1/3 cup to 5 gallons water). A diluted solution of 50/50 Muriatic Acid should be used to etch all concrete surfaces. After acid washing, a solution of sodium bicarbonate must be used to neutralize the acid and maintain proper pH balance. Fiberglass surfaces should be profiled by using an orbital sander with 60 grit sanding paper. After the above steps have been completed, **THE ENTIRE POOL MUST BE THOROUGHLY RINSED WITH WATER TO REMOVE ANY ACIDIC RESIDUE AND TO RESTORE NEUTRALITY.**
- 3.3 Thoroughly inspect the surface area to determine the extent of any damage or degradation in the existing cementations surface. Check for hollow spots, cracks and any other defects. Repairs should be made with hydraulic cement or **AquaGuard® Epoxy Trowel/Patch Kit**. **DO NOT USE BONDO, it can not be used in Concrete or Fiberglass Swimming Pools it is not water resistant and will dissolve.** Repairs must be thoroughly dried and cured prior to the application of the coating material. **All repairs to the surface should be sanded or ground smooth so that the repaired area does not show through the epoxy topcoat.**

The immediate areas under waterline tiles, around light fixtures, returns and drains should be sealed with an epoxy patch kit to help prevent leaking. The entire surface

must be free of dirt, oil, and any loose cement prior to application of the coating material.

- 3.4 When repairing blisters in a fiberglass pool or spa you must grind the blister out and make smooth. Once water is released let dry for 24 hours. Fill all blisters with **AquaGuard® Patch** material, (this is a 1 quart kit with applicator tool). Fill in blister, let dry 4-6 hours (ambient temperature 76°F and up). Sand smooth with orbital sander and 60 grit sand paper.

Section 4 – Application of AquaGuard® 5001 Primer/Sealer for Concrete & Plaster Pools Only

- 4.1 **All personnel should wear proper safety equipment and protective clothing during the handling, mixing and application of all AquaGuard® products. This includes protective eye wear, OSHA approved vapor masks and soil resistant gloves.**
- 4.2 Thoroughly tape and cover areas that are not to be rolled with the coating material (tile, returns, pool light, etc.) to insure that these areas are adequately protected. The lower water tile line shall be taped 1/8 inch above the bottom of tile edge to insure ease of tape removal and a good bond. Or undercut all tile lines with a diamond blade approximately 1/8 inch in depth at a 45° angle. This cut can be filled with the initial sealer coat, and continuously filled when roll applied. We do offer trowel/patch kit for all derogated areas.
- 4.3 **AquaGuard®5001 Primer/Sealer should be used at a temperature of 80-85°F, add one (1) gallon can of activator to the five (5) gallon can of resin. DO NOT LEAVE AQUAGUARD 5001 PRODUCTS IN DIRECT SUNLIGHT FOR AN EXTENDED TIME, THEY WILL OVER HEAT AND SHORTEN POT LIFE CONSIDERABLY!** Mix 1.5 minutes with a Drywall mixing paddle. **NOTE: Always mix product counter clockwise to reduce air entrapment and splash out. Never dilute the primer units, and they may be split in half (pre-mix resin 5 gallon can first for 1.5 minutes for proper blending).**

4.4 **PRIMER/SEALER APPLICATION DATA**

Working Time	45 Minutes
Pot Life	35 Minutes at 77°F
Curing Time	6-24 Hours depending on Geographic Area and Ambient Temperatures

- 4.5 Prior to application of the Primer/Sealer, inspect the entire pool surface to insure that the surface is clean and completely free of any dust, dirt, or any other superficial residues. An industrial grade vacuum may be used to clean the surface. Wipe all Fiberglass pools and spas down with MEK or Acetone Solvent. This will help with a

mechanical bond. NOTE: All **AquaGuard®** products should be installed with 2-3 installers per coat for ease of application or split unit in ½.

- 4.6 Roll one coat of **AquaGuard® 5001 Primer/Sealer** to the dry concrete or plaster pool surface (pool must not be wet). Coverage for the Primer/Sealer is approximately 650-750 square feet per unit of product. Actual coverage will vary depending on the porosity and absorption rate of the surface.
- 4.7 The Primer/Sealer shall be applied to the entire surface with 3/8" X 9" Phenolic nap core roller. The Primer/Sealer must dry for a minimum of 4-6 hours prior to the application of the top coat. Do not thin this product with solvents.
- 4.8 **CAUTION:** Gas bubbles and pin holing may occur during the application of the primer/sealer. This is common on Marcite and other porous cementations pool surfaces that may retain moisture and air. This problem may be reduced by insuring that the surface has had sufficient time to dry and by applying the coating material during the coolest part of the day (early morning or late afternoon). If gas bubbles or pinholes appear, use nap roller with duct tape around the cage attached to an extension pole, and roll down the walls and floor in a continuous motion right after the initial application of **AquaGuard® Primer/Sealer**. This will avoid further air entrapment in to the **AquaGuard®** top coat.

Section 5 – Roll On Application of the AquaGuard® 5000 Top Coat

- 5.1 Prior to the application of the top coat, inspect the entire primed surface and check for any gas bubbles or pinholes. Repair as required with **AquaGuard®** Repair Kit Patch Material.
- 5.2 Keep the **AquaGuard® 5000** at a temperature of 80-90°F. **DO NOT LEAVE AQUAGUARD 5000 PRODUCTS IN DIRECT SUNLIGHT, THEY WILL OVER HEAT AND SHORTEN POT LIFE CONSIDERABLY!** Mix 5 gallon can of resin and 2 gallon can of hardener for 1.5 minutes with a drywall mixing paddle. Add 48 ozs. of Xylene Solvent to the resin or 24 ozs. if you split the unit (we recommend that you pre-mix the Xylene Solvent to the resin for 1.5 minutes). **NOTE: When mixing liquid products always mix counter clockwise to reduce air entrapment and splash out. AquaGuard® should be applied with 2 installers on smaller pools and 3 or more installers for larger pools or pools with spas for ease of application.**
- 5.3 The ideal application temperature of the mixed product should be maintained between 80-90°F to insure ease of application and a consistent finish. The top coat should not be applied at temperatures below 55°F. Thermometers can be purchased at Lowes or Home Depot in the Barbecue Section to check

temperature of **AquaGuard®** products. Once product has been mixed, we recommend splitting **AquaGuard®** liquid into separate buckets for each installer. This will increase pot life considerably. **Do not use roller pans.**

5.4 **AquaGuard®** top coat shall be applied to the entire surface in 2-3 coat process using a 3/8" X 9" Phenolic core nap and roller. Apply the initial base coat approximately 8-10 mils. Allow each coat to dry for a minimum 4-6 hours depending on ambient air temperature. Sand any runs or sags. Roll apply the finish coat to a thickness of approximately 8-10 mils and allow to dry for a minimum of 4-6 hours commencing any detail work or tape removal. Coverage for the top coat is approximately 650-750 Sq. Ft. per unit of product. Let dry for 24 hours prior to filling pool or spa. Using a sequestering agent when filling is always recommended. Check with your local pool store for this.

5.5 **PRECAUTION:** During the application of any high build epoxy, gas bubbles and pin holing may occur. This is particularly important when applying the finish coat. Steps outlined in **Section 4.8** of this document discusses procedures to help minimize this problem. Always attempt to apply the finish coat during the **coolest part of the day.**

5.6 **TOP COAT APPLICATION DATA (80°F)**

POT LIFE	30 Minutes
DRYING TIME	4-8 Hours
CURING TIME	24 Hours

5.7 If unfavorable weather conditions and other unforeseen factors cause a delay (greater than 24 hours) between the application of the Primer/Sealer and Topcoat, the entire surface will require additional preparation. If this occurs, lightly sand the primed surface and wash with MEK prior to the application of the topcoat.

5.8 Install a slip-resistant finish on final coat to all pool stairwells immediately after applying the epoxy topcoat to the stairwell steps. This is required for all commercial or co-operative swimming pools. Evenly apply a non-skid ultra-pure fine grain Silica or Sand additive to all entry points, or walk around gutters. We can also supply this product if needed.

Section 6 – Spray On Application of the AquaGuard® 5000 Top Coat

- 6.1 The top coat shall be applied with the outside temperature of between 60°F or above. The top coat shall be heated to 80-90°F. by either indirect heater, or by leaving in the sun with clear plastic over the **AquaGuard®** units on cool days (check with thermometer).
- 6.2 Mix 5 gallon can of resin and 2 gallon can of hardener for 1.5 minutes using an electric drywall paddle mixer. 18-24 ozs. of Xylene Solvent may be required due to airless spray pump equipment size and to insure proper spray pattern of the **AquaGuard®** coating.
- 6.3 Once the product has been properly mixed and the desired temperature has been obtained, place pail underneath spray pump.
- 6.4 Pot life for epoxy top coat is approximately 13 minutes at 90-95°F. With proper spray equipment sizing **AquaGuard®** coatings should be spray applied in 5-7 minutes per unit with a 535-635 tip.
- 6.5 Set the spray pump to 60-80 psi. With the trigger pulled, make sure the spray man slowly sprays the solvent in a 2 gallon pail until the top coat is seen (we recommend gas driven sprayers).

****Slowly increase pump pressure until it reaches 95-100 psi****

- 6.6 Hold the spray gun approximately 3-3.5 feet from surface to be sprayed, never any farther than 3.5 feet or bubbling may occur. Spray the entire surface area to a thickness of approximately 40-60 mils. Coverage of the top coat is approximately 125 sq. ft. per unit of product. It may be necessary to chalk box areas for pre-determined amount to be sprayed to achieve an even spray and mileage.
- 6.7 If unfavorable weather and other unforeseen factors cause a delay (greater than 24 hours) between the application of the primer and top coat, the entire surface will require additional preparation. If this occurs, lightly sand the primed surface and wash with MEK Solvent prior to the application of the top coat.
- 6.8 Install a slip-resistant finish on final coat to all pool stairwells immediately after applying the epoxy top coat to the stairwell steps. This is required for all commercial and cooperative swimming pools. Evenly disperse a non-skid ultra-pure fine grain silica or sand additive across the step surfaces to achieve the desire slip-resistant texture.

Section 7 – Final Inspection

- 7.1 Remove all taping materials and protective coverings. Use caution when removing the taped area on the bottom of the water line tile. To achieve a straight line around the tile line, first bend the tape downward then peel upwards. A razor knife may be used to trim any excess coating material.
- 7.2 Visually inspect the entire coated surface. Check for any discontinuities, pinholes or other defects. Repair as required.
- 7.3 Allow a minimum of 24 hours at 75°F for the complete curing of the **AquaGuard®** surface prior to filling the pool. A sequestering agent should be used after the pool is full.

Section 8 – Disclaimers and Limitations

- 8.1 The information and recommendations contained in this document of procedures are to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, *Aquatic Technologies Group, LLC* makes no guarantee or results, and assumes no liability for damages incurred by the use of our product.
- 8.2 The Applicator assumes all responsibility for proper safety procedures, surface preparation and application of **AquaGuard®** epoxy lining. The applicator shall indemnify and hold *Aquatic Technologies Group, LLC* harmless from any claim, action, damages, liability asserted by any third party against *Aquatic Technologies Group, LLC* because of any *Aquatic Technologies Group, LLC* product used by the Applicator, and Applicator shall maintain coverage sufficient to hold *Aquatic Technologies Group, LLC* harmless under this indemnity.