

AquaGuard 5000

Application Recommendations

Section 1 - Introduction

1.1 This document has been prepared to establish acceptable practices and guidelines for application of AquaGuard 5000 epoxy coating products on swimming pool surfaces. These recommendations are intended to assure that the restoration of the swimming pool surface will meet the manufacturer's criteria for the proper Application of AquaGuard 5000.

The procedures outlined in these recommendations apply to all concrete, steel & fiberglass swimming pools, spas and fountains.

Section 2 - Preliminary Preparation

2.1 All pools should be drained away from the pool itself, not in immediate area. Utilize Storm drains when available.

2.2 If necessary, groundwater should be stabilized by removing the hydrostatic plug at the bottom of the drain. It may be necessary to install a plug if one is not available. It may also be necessary to install an overhead well point if groundwater is higher than 24 inches above the pool bottom.

2.3 Remove or cover any hardware, hardware accessories, plates, machined surfaces, light fixtures or other similar equipment to avoid contact with the epoxy compound.

Section 3 - Surface Preparation

3.1 Surface preparation is the most important step in the application of **AquaGuard 5000** 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 5000**, 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. A diluted solution of muriatic acid should only be used to etch a very smooth surface. After acid washing, a solution of sodium bicarbonate must be used to neutralized the acid and maintain proper pH balance. Fiberglass surfaces should be profiled by using a grinding machine. 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**. Litmus paper may be used to determine the pH of the Neutrality range 6-8 pH.

3.3 Thoroughly inspect the surface area to determine the extent of any damage or degradation in the existing cementitious surface. Check for hollow spots, cracks and any other defects. Repairs should be made with a mixture of gray Portland cement sand and a high latex acrylic bonding agent. Repairs must be thoroughly dried and cured prior to the application of the coating material.

All repairs to the surface shall be sanded or ground smooth so that the repaired area does not show through the epoxy top coat.

The immediate areas 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.

Section 4 - Application of AquaGuard 5001 Primer/Sealer Concrete Only

4.1 All Personnel shall 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 against accidental spillage.

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. 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 roller applying. We do offer trowel filler, for all degraded areas.

4.3 Preheat or cool AquaGuard primers to 80 to 85°F, add one (1) gallon can of activator to the five (5) gallon can of resin. Mix at 450-600 rpm for 2.5 minutes with a mixing paddle designed per Aquatic Technologies, Inc. recommendations.

4.4 PRIMER/SEALER APPLICATION DATA

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| Working Time | 45 minutes |
| Pot Life | 35 minutes at 77°F |
| Curing Time | 6-24 Hours Depending on Geographic Area |

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 surficial residues. An industrial grade vacuum may be used to clean the surface.

4.6 Roll one coat of AquaGuard 5001 primer (4-6 mils) to the dry pool surface (pool must not be wet). Coverage for the primer/sealer is approximately 450-550 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" nap phenolic core epoxy roller. The primer/sealer must dry for a minimum of 8 (eight) 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 cementitious pool surfaces that may retain moisture. 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 a porcupine roller or equivalent spiked roller to eliminate and or remove gas bubbles. All AquaGuard sealers are moisture tolerant. A two coat application may be necessary to porous cementitious surfaces.

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.

5.2 Preheat or cool the AquaGuard 5000 to 80-90°F. Add the 2 gallon can of activator to the 5 gallon can of resin. Mix at 450-600 rpm for 2.5 minutes with a mixing paddle designed per Aqua Technologies recommendation. Mix 38-40 ozs. of Xylene Solvent to the resin or 19-20 ozs. if you split the unit. (we recommend that you pre-mix the Xylene Solvent to the resin).

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 without the use of an indirect heater to direct heat into the pool after rolling top coat or primer.

5.4 AquaGuard top coat shall be applied to the entire surface in a 3 (three) coat process using a 3/8" nap phenolic core epoxy roller. Apply the initial base coat approximately 12-15 mils. Allow each coat to dry for a minimum 6-8 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 8 hours commencing any detail work or tape removal. Coverage for the top coat is approximately 550-650 sq. ft. per unit of product. Let dry for 24 hours prior to filling pool or spa.

5.5 PRECAUTION: During the application of any high build epoxy, gas bubbles and pinholing 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)

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|---------------------|------------|
| Working Time | 45 minutes |
| Pot Life | 60 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 and top coat, 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 top coat.

5.8 Install a slip-resistant finish on all pool stairwells immediately after applying the epoxy top coat to the stairwell steps. This is required for all commercial or cooperative swimming pools. Evenly disperse an ultra-pure fine grain silica sand or #3 glass beads across the steps surfaces to achieve the desired slip-resistant texture.

Section 6- Spray on Application of the AquaGuard 5000

6.1 The top coat shall be applied normally with the outside temperature between 60-98°F. The top coat shall be heated to 90-95°F. and sprayed between 105-110°F. The hose should also be kept warm prior to spraying the top coat.

6.2 Heat both the resin and activator of the top coat material to a desired temperature of 90-95°F. This can be accomplished by using a portable air heater or by storing in a warm area.

6.3 Mix both the resin and activator for 2.5 minutes using an electric paddle mixer at 450-600 rpm per the manufacturer's recommendations - 16-24 ozs. of Xylene Solvent may be required due to airless spray pump equipment size

6.4 Once the product has been properly mixed and the desired temperature has been obtained, place pail underneath spray pump and thermometer in pail.

6.5 Pot life for epoxy top coat is approximately 13 minutes at 90-95°F with the working temperature between approximately 100-110°F, the pail must be removed and a new cooler product used. If not, the pump shall be flushed with solvent.

6.6 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.

“Slowly Increase Pump Pressure Until It Reaches 80-100 PSI”

6.7 It is possible to roll primer at any time during the day, but **Avoid Applying in the heat of the day, between 10 AM and 2 PM.** If you do spray the top coat between 10 AM and 2 PM, you may encounter some bubbles. Repair as necessary.

6.7 Hold the spray gun approximately 3-3.5 feet from surface to be sprayed, never any farther than 3.5 feet. 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.

6.8 TOP COAT APPLICATION DATA (AT 90- 95°F)

Working Time 20 Minutes

Pot Life 15 Minutes

Drying Time 4-8 Hours

Curing Time

24 Hours

6.9 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 prior to the application of the top coat.

6.10 Install a slip-resistant finish on 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 an ultra-pure fine grain silica sand, #3 beads or Shark Grip across the step surfaces to achieve the desire slip-resistant texture. After the top coat has dried, lightly brush a thinned mixture of top coat over the silica, sand or glass beads.

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 24-36 hours at 75°F for the complete curing of the AquaGuard surface prior to filling the pool. A sequestering agent may be used after the pool is full to prevent staining due to mineral laden water.

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, Inc. makes no guarantee or results, and assumes no liability for damages incurred by the use of our product.

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, Inc. harmless from any claim, action, damages, liability asserted by any third party against Aquatic Technologies, Inc. because of any Aquatic Technologies product used by the Applicator, and Applicator shall maintain coverage sufficient to hold Aquatic Technologies, Inc. harmless under this indemnity.

AQUAGUARD 5000

15 POINT CHECK LIST

1. DRAIN POOL - AWAY FROM POOL.
2. CHECK GROUND TABLE FOR STATIC PRESSURE
3. INSTALL AUXILIARY PUMP TO REMOVE STATIC PRESSURE IF NECESSARY.
4. ACID WASH POOL - NEUTRALIZE- PROFILE POOL FOR GOOD ADHESION.
5. CHECK ENTIRE SURFACE FOR HOLLOW SPOTS - REMOVE ANY AND ALL SUCH AREAS. REPLACE WITH HIGH BOND MORTAR AND BONDING AGENTS.
6. REMOVE ALL LIGHTS, DRAIN COVERS, RETURN OUTLET FITTINGS AND CHECK ALL GASKETS.
7. PROTECT ALL TILE AND POOL HARDWARE WITH TAPE. PROTECT DECKING WITH VISQUEEN.
8. ROLL AN EPOXY SEALER OVER ENTIRE SURFACE TO:
 - a. STRENGTHEN EXISTING CONCRETE SURFACE.
 - b. STOP AIR ESCAPING FROM CONCRETE.
9. ROLL A 6-8 MIL BASE COAT OF **AQUAGUARD 5001** SEALER. DRYING TIME. 4 HOURS OR MORE.
10. REPAIR ALL HOLES OR DEGRADED AREA WITH AQUAGUARD 5000 REPAIR PUTTY.
11. HEAT TOP COAT TO 95-100 DEGREES. SHOOT 40-50 MIL. PROTECTIVE TOP COAT **DRYING TIME 12 HOURS OR MORE.**
12. REMOVE ALL TAPE AND VISQUEEN, CLEAN POOL HARDWARE, RE-INSTALL AND ADJUST ALL FITTINGS.
- 13: TOUCH-UP ANY NECESSARY AREAS TO ENSURE A SECURE JOB.
14. FILL POOL AND ADJUST CHEMICALS.
15. USE FILL TANKS WHEN NECESSARY