

Ten Steps to Quality Chemical Service

onBalance – Que Hales, Doug Latta and Kim Skinner

We recently authored an article entitled *Ten Steps to Quality Pool Plaster*. The purpose of that article was to point out that there are professional, quality practices that ensure quality plaster finishes; and that although the vast majority of plaster finishers are intimately familiar with and adhere to these steps, a minority of the profession violate them at will, with the resulting poor finishes giving the entire industry a bad reputation. This is especially important to us in the service industry on those occasions when the results of poor plastering practices have been blamed inappropriately on chemical treatment.

We felt that a good follow-up would be to discuss ten steps contributing toward quality, professional chemical care of swimming pools. As with the plaster article, these ten items cannot be considered comprehensive, yet following them will result in avoiding the vast majority of possible chemical-related pitfalls.

We hope you enjoy considering them as much as you enjoyed the last offering.

Step 1 – Testing – Test your pools!

This is basic, and can actually be fun when the technology is explored. Make sure to test consistently with a quality, appropriate test kit. Remember that some technology may be most appropriate for spot checks or supplemental pool owner testing, where others may be expensive and/or sensitive enough to only be appropriate in your lab.

Poolside tests should be made with frequencies in line with how fast an analyte can change: sanitizer and pH usually get tested every time, while calcium or TDS may be tested much less frequently. Of course, at regulated pools there may be a specified frequency at which each test must be taken.

Remember to document readings and chemical usage at every visit.

Step 2 – Treatment – The primary concern we have about chemical treatment is the health of the people using the pool. Don't get so caught up in (important but secondary) issues such as algae control, water balance, filtration, etc. that you neglect disinfecting the water. Know the ANSI-APSP chemistry recommendations and use them, understand and follow chemical labels, and address chemical issues promptly rather than waiting until the next service visit.

Step 3 – The Saturation Balance – Balanced water is important in sustaining the life of cement-based components of the pool surface. The service professional will maintain balance (-0.3 to +0.5 LSI) in the pool by either calculating and adjusting the water according to the saturation index when servicing the pool... or by simply maintaining the water chemistry levels within the ideal ANSI-APSP ranges. Note that maintaining water at the bottom end of the ideal pool ranges (pH 7.4, TA 80, CH 200, 78°F, CyA 20, with a TDS around 500) results in a balanced SI of -0.3, and maintaining water at the top end of the ideal pool ranges (pH 7.6, TA 120, CH 400, 82°F, with a TDS around 1000) results in a balanced SI of +0.5.

Of course, high calcium can be offset by lower pH or TA, high TDS can be offset by higher calcium, etc. We at *onBalance* actually prefer a higher pH – around 8.0. However, we compensate with a higher cyanuric acid level plus borax, resulting in sufficient total alkalinity while lowering the carbonate alkalinity. (Try playing around with these values on our fun, free and dynamic Saturation Index Calculator at www.poolhelp.com/sic.)

Step 4 – Proper Chemical Addition – When adding chemicals to water, there are two principles that will protect both service techs and swimming pools, as well as promoting optimum blending. The first is to pre-dilute less soluble chemicals before adding them to pools. This helps to ensure that high concentrations of, for example, acids, pool salt, or other aggressive chemicals do not come in direct contact with alkaline interior pool surfaces with the potential for aggressive damage to those surfaces. The second principle is to always add chemicals to water, not water to chemicals. Moistening such widely different chemicals as acidic muriatic acid and basic calcium hypochlorite can result in relatively violent reactions that can potentially injure the service tech.

Leave pre-blending chemicals to the manufacturer – inappropriate mixing of incompatible chemicals can result in fire and/or explosion, and inappropriate mixing can even include such practices as putting trichlor tabs in an in-line feeder and then adding calcium hypochlorite through the skimmer. Bang! Read labels and follow safety instructions.

Step 5 – Additional Chemical Safety – Because of the potential for damage to persons and property, additional care needs to be paid to the storage, transportation, and disposal of hazardous pool chemicals.

For example: *Storage* – Have you made sure that you do not store acids on shelves above bases, have you made sure that chemicals are stored off the floor to keep them out of possible water leaks, have you secured tip-able containers to prevent spillage and possible earthquake disasters? In terms of *Transportation*, are you aware of federal, state and local rules regarding the loading of various chemicals in route trucks? Are you aware of the maximum amounts you may transport without a Commercial Driver's License, a HazMat endorsement, and truck placards? As far as *Disposal* is concerned, are you familiar with the federally and locally appropriate ways to dispose of those wet gooey trichlor tabs, or that rotting jug of who-knows-what that your new account asked you to remove from her garage?

Step 6 – The Water Clarity Tripod – There are three factors contributing to water clarity: chemistry, filtration and circulation.

Make sure that the chemicals are balanced. pH levels above 8.3, for example, will precipitate calcium, resulting in cloudy water.

Make sure the filter is functioning efficiently, removing suspended solids.

And make sure the circulation is efficient (moving water round and round and top to bottom) and that the system circulates long enough per day to deliver the right amount of water to that filter you are maintaining so efficiently.

Step 7 – Specialty Chemicals – The experienced service tech will not always need specialty chemicals to maintain a particular pool – but when one is needed, we must know the products, their strengths, interactions, and cost benefits. These chemicals can include algaecides, clarifiers, stain preventives, sanitizer boosters, etc. There are also special “delivery systems” such as salt systems to generate and deliver chlorine, ionizers to deliver copper and silver as algaecides, etc.

Step 8 – Start-up Chemistry – The experienced tech will be familiar with the various methods of starting up the chemistry in new plaster pools, as well as their relative strengths and weaknesses. Be prepared to do traditional and bicarb starts right, as needed, and be prepared to explain why you do not want to do an acid start...

Understand the important roles of brushing and vacuuming, documentation of all initial startup procedures and treatments, prompt communication of all startup concerns with involved professionals, and contacting resources when you encounter difficulties.

Be sure all cleaning devices are operational and cannot scratch or gouge plaster. And regardless of the type of startup, never leave fresh plaster untended for long periods of time.

Step 9 – Never Stop Learning – The fact that you are reading this publication shows that you are interested in furthering your knowledge of your craft. We at onBalance research, write, teach and publish because we share that interest. There is always more to learn and understand, and most of it will have direct applications that will benefit both your customers and your bottom line. Whether it is new ways to balance chemicals, new ways to treat problems, or even increasing attention to water safety such as repairing gates, protecting pets and certifying in CPR... the professional chemical service tech never stops adding to his or her fund of knowledge and skill through industry publications, online resources, trade shows and other classes.

Step 10 – Join and Contribute – We feel that quality chemical service includes being involved and up-to-date. Join your industry's trade association(s), learn and lend a hand. Become a member – unite and support!