THE AQUATIC COUNCIL, LLC

Indoor Pool? Stop That Smell!

It's an issue we all face – you don't want your indoor pool to smell like, well... a pool. A welcoming swim environment has to have great water and great air. Here's how you achieve both.

The Problem – Indoor pools plagued with poor air quality are suffering from a chloramine issue. That "pool smell" is often incorrectly attributed to chlorine. If you hear patrons complaining ...

about an overuse of chlorine they're likely misidentifying chlorine for chloramines – the gaseous byproduct of used chlorine in your pool. Beyond smelling bad, chloramines are responsible for a bevy of other swimmer issues – red eyes, itchy skin, swimmers cough and an increased propensity of juvenile asthma, all of which can all be traced back to chloramines.

The Cause – Combined chlorine (used chlorine in your pool that has been bound to organic or inorganic compounds) releases chloramines as a gas. Chloramines are heavier than air and tend to sit just above the pool surface, in close interaction with your patrons. Because of their low-lying location, they're often not adequately removed from the natatorium environment without additional considerations to airflow control. Due to their enclosed nature, indoor pools are especially susceptible to chloramine issues.

The Solutions – Chloramines can be controlled with a few mechanisms. A layered approach to chloramine control is best.

Water Replacement – Cycling in new fresh water, and draining water with higher combined chlorine counts works well. The downside? While you are draining away combined chlorine, you're also draining away heated, treated, chemically balanced pool water. This can be an expensive undertaking and should be closely controlled.

Air Control – Well-designed HVAC systems will remove chloramines from the air. New systems rely on source capture – drawing more air from the surface of the pool and pool deck to remove chloramines in greater concentration. Facilities with aging, weak or ineffective HVAC systems may utilize fans overnight, sweeping across the pool to aid the HVAC system in the removal of chloramines. Again, this process does work, but carriers a heavy price tag. The convective heat loss (your pool cooling due to moving air across its surface) will keep your heater firing all night. Higher gas bills and utility costs will follow.

UV and Ozone – Secondary oxidizers and disinfectants such as UV and Ozone work well at breaking down combined chlorine in the water. With combined chlorine counts reduced, chloramine production quickly decreases. These systems should be considered during new build and renovation projects. Beyond chloramine control they have many other water benefits.

Breakpoint Chlorination – The process of breakpoint chlorinating is often referred to as "shocking the pool". Combined chlorine can be oxidized chemically through this process. Breakpoint chlorination involves adding additional chlorine (or a similar oxidizer) to the pool. When enough oxidizer is added, the combined chlorine will separate, reducing the opportunity for chloramine production. Achieving breakpoint requires accurate testing of chemical values (Total Chlorine and Free Chlorine specifically). Once those values are known, they can be used in the following three steps:

1. Total Chlorine – Free Chlorine = Combined Chlorine
2. Combined Chlorine x 10 = Breakpoint Level
3. Breakpoint Level – Free Chlorine = Additional Chlorine Needed in PPM

For example, if your Total Chlorine tests at 2.5 PPM, and your Free Chlorine Tests at 1.5 PPM your math would appear as follows:

1. 2.5 PPM – 1.5 PPM = 1.0 PPM
2. 1.0 PPM x 10 = 10 PPM
3. 10 PPM – 1.5 PPM = 8.5 PPM

In this scenario, raising the chlorine by 8.5 PPM will achieve breakpoint. A trained operator can follow manufactures instructions on an oxidizer to safely add the required amount to the pool.

Special considerations to this process include diligent mathematics, safe chemical dosing, and ensuring an adequate amount of time to reduce chlorine counts to normal operating ranges before reopening the pool.

(http://www.aquaticcouncil.com/assets/chloramines)