

Condo Insights

#61 Swimming Pools – Part 3 Sanitizing options and operating costs

Swimming pools are a common amenity in seashore condos because they offer a comfortable place to swim, exercise, and cool off. Part 3 in this series will discuss the most common types of disinfection chemicals and systems, costs of operation and budgeting for pool operation.

Health codes require primary chlorine or bromine sanitation in all commercial aquatic facilities. Chlorine can handle all sizes of aquatic facility water, is convenient to use and is an effective way to kill bacteria and algae. There are various compounds of chlorine used in swimming pools, some of which are stabilized, some are not. Stabilizers extend the life of chlorine in the water. Chlorine can come in liquid or tablet form. There are different types of chlorinators, including inline, floating and saltwater. While chlorine is typically inexpensive to use, recent chlorine shortages have made it significantly more expensive in recent years. A downside to chlorine is that it reacts with organic materials like lotions and sweat and it creates byproducts that cause red eyes, dry skin and lung irritation.

According to the Certified Pool Operator (CPO) Handbook, understanding the differences between chlorine and bromine is crucial for maintaining safe and effective pool water sanitation. Both have pros and cons regarding effectiveness, stability, odor, and skin/eye irritation. Chlorine acts as a fast-acting oxidizer, killing bacteria and algae quickly; on the other hand, bromine acts as a slower ionizer, sanitizing water over a longer period. Chlorine breaks down quickly in sunlight, requiring frequent dosing, especially in outdoor pools; bromine is more stable making it a better option for indoor pools or hot tubs where sunlight exposure is limited. Chlorine can have a strong, noticeable odor, especially when combined with other contaminants, whereas bromine generally has a less potent odor compared to chlorine. Chlorine can irritate skin and eyes, especially with high concentrations or prolonged exposure; bromine is generally considered gentler on skin and eyes than chlorine. Chlorine is generally more cost-effective than bromine. Bromine is effective over a wider pH range than chlorine. Mixing bromine and chlorine can create bromine chloride, which is less effective at sanitizing and can also cause a strong odor.

Saltwater pool sanitation systems have become popular among aquatics facilities because they produce chlorine without irritating swimmers' skin. Saltwater pools have lower levels of chlorine than traditional chlorinated pools. Chlorine is produced through electrolysis and uses added salt (sodium chloride) to form hypochlorous acid (which acts as a sanitizer) and hydroxyl ions (oxidant or filter aid). A downside to saltwater sanitization is that improper maintenance, faulty sensors, or chemical imbalance can cause any saltwater pool to become super chlorinated which can damage equipment, pool surfaces, and become dangerous for swimming. In addition, salt produced by the saltwater pool can damage or attack the cement, plaster, and coping of the pool; and the high salt concentration found in the saltwater pools may affect grass, planters, trees, and shrubs near the pool.

Chemical controller systems offer automated pool chemistry management, improving safety, reducing workload, and optimizing chemical use, all contributing to efficiency and a safer environment for swimmers and pool staff. Controllers continuously monitor and adjust pH, chlorine (or other sanitizers), and other key parameters, ensuring optimal and consistent water conditions for swimming. Properly balanced and sanitized pool water is essential for preventing recreational water illnesses and infections. Consistent water chemistry minimizes eye irritation, skin irritation, and other potential health problems associated with imbalanced pool water.

Controllers automate the process of dosing and mixing chemicals, reducing the need for manual chemical adjustments, which in turn reduces potential for human error. Controllers dispense chemicals only when and as needed, minimizing waste and saving money. Automatic chemical control allows for consistent water quality around the clock, ensuring the pool is always safe and clean. Controllers can track water chemistry data and alert staff to any problems or unusual conditions.

By dispensing chemicals only when needed, chemical costs can be reduced. Controllers can also be integrated with other pool equipment, such as pumps and heaters, optimizing their efficiency and reducing energy consumption. Automation reduces the need for staff to spend time on chemical testing and adjustment, freeing them to focus on other tasks. Maintaining stable water chemistry helps prevent corrosion and damage to pool equipment, extending its lifespan.

Annual operating costs for pool facilities include costs for municipal and county inspections and registration; water quality testing by certified labs; costs of chemicals and consumables; general maintenance & repair to aquatic facilities, pumps, motors, filters and heaters; opening and closing costs; the cost for a Certified Pool Operator; and service personnel for regular cleaning and operation of the aquatic facility. Many of these annual costs (such as for inspections, registration, testing, CPO, opening and closing) are fairly consistent year by year.

In New Jersey, a condominium pool is generally considered a public recreational bathing facility and therefore subject to the rules and regulations governing those facilities, rather than being classified as a commercial pool. (NJAC 8:26) New Jersey defines "public recreational bathing facilities" as any bathing beach, swimming pool, wading pool, hot tub, or spa used by the public or by residents of multiple living units, including condominiums. Because condominium pools serve residents of multiple units, they fall under the category of public recreational bathing facilities and are not considered private. This means that condominium pools in New Jersey are subject to the same health and safety standards, including lifeguard requirements, as other public pools.

in New Jersey, public recreational bathing facilities are required to have a written standard operating procedure, also known as an aquatic's facility plan. The plan must include: a diagram of the facility, evacuation plan, lifeguard schedule (if not exempt), staff responsibilities, emergency contacts and phone numbers, location of first aid and rescue equipment, staff emergency procedures, location of the emergency shut off switch for suction outlets, hours of operation, schedule of operational activities such as water quality testing and recordkeeping, and a zone of protection of the lifeguards.

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