



Aquatic Consulting Services

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Pool Tip #58: Pool Water Temperature

Here's something you will never get two people to agree on. Water temperature preferences vary from person to person, depending on their age, health, the activity in which they are participating, and what they have become accustomed to when they enter a pool.

What is considered to be an appropriate pool water temperature varies by region of the country. For example, pools are usually kept colder in New England and warmer than average in Florida. Typically, spas are maintained at 104° Fahrenheit. Multi use pools are usually kept at 83° - 86°, while competitive pools are usually maintained at cooler temperatures between 78° - 82°. Depending on the target population, instructional and therapy pool water temperatures usually range between 86° - 94°.

As water temperature increases, costs of pool operation also increase. Besides the obvious cost of energy to heat the pool and surrounding area, evaporation rates speed up and destruction to the surrounding equipment and surface materials intensifies. Chemical usage goes up. Calcium is less soluble in warm water, so water is more difficult to balance and problems associated with calcium scale deposits mount. Perspiration rates increase and more ammonia is added to the pool. Chloramine levels escalate rapidly as a result. Organic loading escalates. TDS levels also increase at a faster rate, requiring more frequent dilution, and draining and refilling of the pool.

Pool operators should select a temperature based on priority facility usage and programming, and age of participants, while managing the maintenance concerns.

Cooler water temperatures are needed for: high level competitive or fitness swimming, aerobic fitness activities, and activities in which participants are generating a lot of heat that needs to be dissipated. Warmer temperatures are needed for instructional programs, low level fitness and health maintenance programs, therapeutic programs, and programs catering to young children or seniors.

No matter what the water temperature, someone is likely to complain that the water is either too warm or too cold. If a patron tells you the water feels too warm, tell them not to wear a bathing cap, to drink plenty of water, and to reduce the level of intensity at which they are working out. If the water feels too cold, suggest they wear a bathing cap, wear a Lycra dive skin, rash guard or neoprene wet suit, and work faster and harder so that they use more energy and generate more heat.

Ambient air temperature in indoor pools should be maintained for the comfort of

participants and instructors, coaches or therapists who are in the water – not for spectators on the deck who are dressed in street clothes. To prevent excessive loss of heat due to evaporation, make sure air temperature is always maintained 1-3 degrees warmer than pool water temperature. Relative humidity should be maintained around 50%. At a minimum, ventilate in compliance with ASHRAE Standard 62-1989 "Ventilation for Acceptable Indoor Air Quality". Provide at least 8 complete air exchanges per hour in the natatorium with a minimum 40% fresh air. Make sure you have the capability of bringing in 100% fresh air when needed. Since pollutants travel from positive to negative pressure areas, natatoriums should be positively pressured in relation to the out of doors, and negatively pressured in relation to surrounding occupied spaces. Maintain air contaminants below specified values or concentrations.

Drafts, stratification of air, thermoclines or temperature gradients should not be evident. The air velocity in the area from deck level to 8' above the deck should be less than 25 feet per minute. Air should be introduced into the pool area from low to high. A common design error is to install all ductwork at ceiling level. Supply registers should be placed low in the natatorium and grills adjusted so that fresh air blows across the pool surface. This is necessary even though it increases the rate of evaporation, because heavier than air pool chemical gasses need to be moved away from the pool surface.. Return/exhaust ducts should be located at ceiling level.

The air temperature in spectator seating areas should be cooler than the air in the natatorium, and the velocity should be higher, in the range of 40 – 50 fpm. Better yet, design a spectator viewing room adjacent to the pool deck, and separated from the pool deck by safety glass windows. The room should be large enough to accommodate the anticipated number of spectators, allowing at least 20 square feet per person. Depending on the season, the viewing room should be heated and/or air conditioned and the temperature in the room maintained for the comfort of the spectators. Comfortable seating, coat racks, vending machines, reading materials, toys, televisions and other distractions are often provided to help keep people occupied while they wait.