

HOW LONG SHOULD A POOL HEATER LAST?

BY PAUL RHODES, CAMT, AND RON PERKINS

Swimming pool heaters can be a great addition to any apartment community's amenity offerings. A pool heater can help to extend the swimming season year-round in most markets, especially those with limited "summer" climates. A spa can be pitched to prospective residents as a healthy perk for those who live there.

Most pool heaters come with two-year warranties. Maintenance technicians, however, should not be satisfied with only two years of production from a piece of equipment that can cost between \$2,000 and \$5,000. With proper care, a commercial-grade swimming pool heater should last 10 years or more.

Operation. One way to think of how a pool heater works is to compare it to a tankless water heater. Tankless water heaters heat water on demand as the liquid flows through the heat exchanger, compared to a "tank" water heater, which maintains the water temperature at a desired degree. If water flow stops while the heater is in operation, pressure inside of the pipes can cause problems.

Pool heaters even tend to "dance" from the boiling water within when the pool pump is turned off while the heater is still operating. Often, there is a safety flow switch or interlock that is used to ensure that the pool heater will not fire if pool water is not flowing.

Balance. Many swimming pool operators are in the habit of performing chemical checks once or twice (the preferred minimum) each day. These tests often consist of chlorine and pH testing, which is a good start. While pH is the most critical factor in extending a heater's life, true balance comes from more than just that single test result.

The pH level is measured on a scale of 0 to 14, and is a calculation of the amount of acids and alkalis in the pool water. The farther from the recommended level of 7.4pH (in either direction, higher or lower), the more damaging the water can be on the swimming-pool components.

The heater produces extreme temperatures in short order, which when added to the pool, places increased importance on other measurements tracked by operators. Two other measurements that are very important when discussing heater longevity are Total Alkalinity (or TA) and Calcium Hardness. These tests should be checked weekly and maintained in specified ratios with pH, while taking into account the temperature of the water and the number of people who are swimming. This is the complete

definition of water balance.

The measure of a pool's water balance is completed by using the Langelier Index. In simple terms, the result of the Langelier Index can tell if pool water is corrosive (destructive to the heater and other components in contact with the pool water), balanced (working safely with the heater and other components) or scale forming (allowing calcium deposits to build on surfaces). If choosing not to specifically use the Langelier Index, an alternative is to instruct technicians to address core concerns through achieving a balance that falls within a predetermined range.

Corrosion or scale on heater surfaces are both conditions that are commonly not covered by pool heater warranties and can cause premature failure. (Note: for instruction on the importance of water balance, consult the National Swimming Pool Foundation's Certified Pool Operator program.)

Safety. While pool heater technology is continually advancing—including options such as heat pump, electric coils and solar—the most often used heating method is gas. This means that operators must be aware of the exhaust and carbon monoxide (CO) that is associated with combustion heating. It also means that venting must be observed and maintained.

It must be ensured that the heater has enough free air to produce a good flame. Lacking a solid flame means the heater will operate inefficiently and cost more to maintain.

In addition to the safety required for the heater itself, operators must be in control of the spa water's temperature. If the heater is connected to a "hot tub," the temperature of the water should never be above 105 degrees; temperatures in excess are unsafe for bathers. (Local regulation may set the maximum temperature lower than 105 degrees; please consult your local code.)

Ensuring a heater's long life is the same as it is with longevity for all pool equipment: consistent and knowledgeable maintenance.



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Additional pool maintenance resources are posted in NAA Connect at bit.ly/PoolMaint