

Heating Facts for Outdoor Pools

This fact sheet explains how you can reduce your outdoor swimming pool heating costs and save energy.

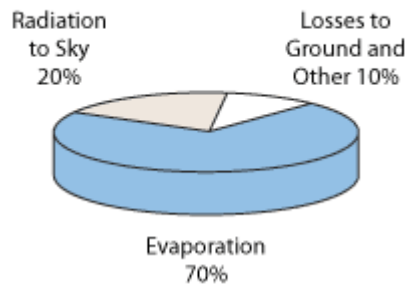
Heating an outdoor swimming pool will require energy. Pool owners & operators can save a significant amount of energy by reading this guide. Much of the energy is often wasted and can be saved with proper management.

How Pools Lose Heat

Pools lose energy in a variety of ways, but evaporation is by far the largest source of energy loss for swimming pools. When compared to evaporation, all other losses are small. The reason evaporation has such an impact is that evaporating water requires tremendous amounts of energy. It only takes 0.24 watts to raise 45 grams of water 1 degree, but each 45 grams of 26.6C water that evaporates takes a whopping 307 watts of heat out of the pool.

The following diagram illustrates the impact of evaporation on the total energy consumption of the outdoor pool. This is why heaters are often sized on the surface area of the pool rather than the volume of water in it, as the surface area is where the evaporation occurs.

Outdoor Pool Energy Loss Characteristics



Minimize Evaporation

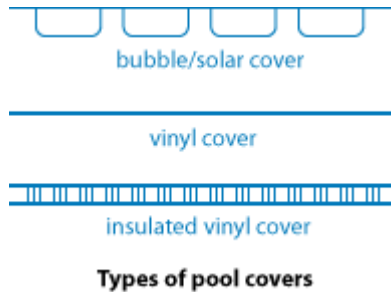
Since evaporation is the major source of heat loss for swimming pools, to minimize evaporation, one must cover the pool. Covering your pool when it's not in use is the single most effective way of reducing your pool heating costs. Savings of 50-70% are possible. There are many energy management improvements that can be implemented with outdoor pools.

Pool Covers

There are three main types of pool covers. See our 'Guide on Pool Covers' for more detailed information.

Pool covers also provide many other benefits besides saving energy. They conserve make-up water by 30-50% and can reduce chemical consumption. Cleaning time is cut by preventing dirt and other debris from entering the pool.

It is highly recommended that the first step to cutting pool energy loss be the evaluation of the economics of using a swimming pool cover.



Covers must be managed properly for safety. They should always be completely removed before anyone enters the pool.

Wind Breaks

One item that can greatly increase evaporation from outdoor pools is wind blowing over the pool. An 11 kilometer wind at the surface of the pool can increase energy consumption by 300%. Adding trees, shrubs, fences, or other wind break material can significantly lower the heat loss from the pool while it's open.

Pool covers are great at stopping evaporation when the pool is closed, but can't do anything to cut evaporation when the pool is open.

The windbreak needs to be high enough and close enough to the pool that it doesn't create turbulence over the pool and increase evaporation, but try not to block the sun from shining on the pools surface.

Efficient Operation

Consider carefully the temperature that you keep the pool water. Each degree rise in the temperature can cost you an additional 10%. 25-27C for active swimming and 28C for general use. To maintain a pool at 28C costs almost double than of a pool at 24C.

Don't backwash your filter more frequently than necessary. Backwashing too frequently wastes water, while not backwashing wastes energy by requiring the pump to work longer to achieve the same standard of filtration, thus costing more.