



Water Losses (C22)

As water can be lost from a swimming pool for several perfectly normal reasons, such as splashing and evaporation, it is important to identify if this is the case, or whether the pool tank is leaking.

Firstly, when the pool water surface is exposed to the atmosphere and the temperature of that water is above the air temperature, the water will evaporate and what is left will be cooled.

The rate of evaporation is increased by the wind speed across the surface of the water and so consequently the temperature is reduced further. The amount of evaporation is difficult to calculate due to the constantly varying factors but an average of 3mm in 24 hours (when an indoor pool is uncovered) is a guide and it can be significantly higher for outdoor pools. Covering the pool water, when not in use, particularly at night will significantly reduce evaporation and heat losses.

Secondly, water can be lost by splashing. Not only when the splash water does not fall back into the pool but lands on the surrounding area but also as the effect of splashing increases the surface area of the water and therefore marginally increases the evaporation and cooling losses.

Thirdly water losses can occur by water being dragged out of the pool when swimmers exit the pool, which can amount to 0.75 of a litre per person, each time they exit.

Fourthly, water is lost from the pool when the pool filter is cleaned. Most domestic pool water is filtered through a sand filter and in order to clean the sand the water flow is reversed discharging the dirt from the filter and water into the drain. This is perhaps the most significant, natural, water loss from a pool. Keeping a written record of this, and other maintenance tasks, will ensure that it is not performed more often than necessary to keep the filtration running at its optimum.

These three areas can account for a reduction of water level of 25 to 30mm per week in an outdoor pool. If you think that this figure is being exceeded, then contact your SPATA Member.



Pool leak

It goes without saying that any leaks visible in the plant room will cause a water loss and should be stemmed by you, or your SPATA Member. Water can also be lost in other, more serious ways:

Firstly, when the rotary or backwash valve, which controls the filter cleaning process, is worn or broken, it allows water to go to the drain as well as back to the pool. This is a fairly simple task for a pool engineer to repair.

Secondly, water can be lost from a broken or misaligned hydrostatic valve. These valves are fitted in concrete pools to prevent the pool shell being lifted out of the ground by ground water pressure, especially when the pool is empty. The valve is located in one of the floor outlets and is held in place by the weight of the water above it. If the ground water pressure gets greater than that exerted by the pool water the valve opens and allows ground water into the pool until the pressures equalise. Dirt coming in with the ground water can block the closure of the valve and a water loss can occur. This again is easily fixed by an experienced pool engineer.

Thirdly, water can be lost through a crack between the floor and wall fittings of the pool. In the case of a concrete pool this is where the pipes and other fittings puncture the shell and with liner pools where the flange on the pipes and fittings seal the liner material. This type of loss is normally detected by a dye test, perhaps using a pool diver, and generally requires a simple repair.





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Lastly, water can be lost when a pipe in the circulation and filtration systems has been cracked or broken. When this occurs in the plant room the repair is usually easy but not so when underground. In that case the pipes will have to be hydraulically pressure tested for soundness to identify in which area the fault lies. Once this has been established, and confirmed, the location of the loss has to be found underground which can be difficult.

If there is suspicion that the pool is losing more water than it should naturally there is only one way to proceed and that is slowly! The first thing to do is to establish the magnitude of the leak and this is reported in millimetre loss per week.

The pool should be covered to prevent evaporation and swimming should be discouraged to avoid other types of water loss. The auto top-up, if fitted, should be turned off. All valves in the plant room should be closed and, obviously, no filter cleaning should take place. At this point the water level should be measured down from the top of the wall or a mark of the water level made on the front of the skimmer. The pool should be left in this static condition for up to a week and the level marked again so that the mm drop can be calculated, or the pool tank can be tested for leaks using the evaporation measurement container.



Once this has been done, it will be necessary to discuss the problem with your SPATA Maintenance Company. It is important to stress that each check of the potential areas of loss should be accompanied by a check. For example, if the cleaning valve (backwash) is faulty, it can be repaired or replaced and then a further check for water loss must be made to see that the fault has been cured. If a skimmer line is found to be faulty it should be plugged off and the water loss test repeated without it to show that that is the only area of loss.

Always take the determination of the cause of a suspected un-natural water loss slowly and logically.

