



## TECHNICAL NOTE

### 70 – Glass in the pool

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Glass should not of course get into a pool, not even into the pool hall, and pool designers and managers should have introduced the necessary preventive safeguards. But if an accident happens, it is clearly vital that it is dealt with effectively. This technical note describes how.

#### Assessing the danger

The presence of glass and the hazards associated with it should be catered for in a risk assessment which identifies the hazards and who may be harmed, evaluates the risks involved and details how an accident should be dealt with. The consequences of having broken glass in a swimming pool are of course very serious, with a real risk of severe injury.

If operators suspect glass has got into the pool, it should be closed immediately. What happens next will depend on the nature of the pool and the glass involved. It may not be possible to know how it is broken, exactly how much there is, or what size pieces there may be. Based on what is understood to have happened, operators will need to choose from three options, only the first of which involves emptying the pool.

#### 1. Emptying the pool

This won't be an easy option unless the pool is small and can be emptied, made safe and refilled without the need for discharge approval from water authorities. Also, draining and refilling can take a week or so if the structure of the pool is to be protected (see *Swimming Pool Water* Chapter 5 ) Lost revenue, plus the cost of water and re-heating, makes this an expensive option.

Where emptying is feasible, large pieces of glass can be removed manually, with appropriate PPE, and remaining pieces hosed and swept towards the bottom drain. Prior to refilling, the entire pool should be swept with a fine brush, sweeping the water and any remaining fragments through the bottom drain

#### 2. Manual sweeping with fine brush

If the glass might have shattered into very fine shards that could be suspended in the general body of the water, the pool water should first be allowed to settle with no activity for an hour or more. It may help to turn off the circulation for a time, starting again when sweeping is about to start.

First, some larger pieces can be removed manually, with appropriate PPE, and the pool bottom swept with a pool brush, sweeping the water and any remaining fragments through the bottom pool outlet from where they will ultimately collect on the filter bed when circulation is restored and on backwashing be washed to drain.



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As a precautionary measure a commercial dive team could be engaged to inspect the pool base before reopening, just to check there is no remaining glass.

If the filtration system is switched off for a period, to allow suspended glass particles to settle, chemical levels should be checked before the pool is reopened.

Care will need to be taken when cleaning the strainer basket when next backwashing. And again when next cleaning the transfer channels and balance tank in a deck level pool system in the precaution that some shards may persist.

### 3. Pool vacuum cleaner

Again, the pool may need to be allowed time to settle out any fine shards; any large pieces should be removed manually. Then the pool bottom is vacuumed, ensuring the full area has been covered. This is best achieved by sweeping the pool bottom in a strict pattern, repeating two to three times using varying patterns. Ideally an electrically powered and operated machine, complete with rotating brushes and micro fine collection filter, should be used – if not available on site, then perhaps borrowed or rented.

As a precautionary measure a commercial dive team could be engaged to inspect the pool base before reopening, just to check there is no remaining glass.

If switching of the filtration system for a period of time, to allow settlement of suspended glass particles, then check chemical levels are as required before opening for use

Care will need to be taken when cleaning the strainer basket when next backwashing.

Similarly, care should be taken when next cleaning the transfer channels and balance tank in a deck level pool system in case some shards have persisted.

### Sweeping how thorough?

Both the manual sweep and pool vacuum methods will benefit from dividing the pool up into sections or grids that are systematically addressed. Lane lines or markers on the pool side may help in this process.

It may be possible to be sure all the glass has been removed. If the broken item, like a drinking glass for example can be totally reconstructed, then it may be possible to be confident it's all been removed.