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SURFACE PREPARATION GUIDE

PS-C011
DISCUSSION ABOUT FIBREGLASS POOLS BRACING, HYDROSTATIC PRESSURE AND WATERLEVELS

INTRODUCTION:

Swimming pools are designed to be stable when full of water. But when empty they can be subject to forces they are not normally exposed too. There is a possibility of quite of lot of pressure against the shell from the outside. For concrete pools when they were built, they would have been left empty for a month or so and can usually withstand this situation. Fibreglass pools are usually dropped into a hole and the sand and earth compacted around them. Such activity is done when the area is dry.

WORKING WITH AN AGED POOL:

Years later when the pool is emptied, the pool may now have a high-water table or just saturated earth - sand fill surrounding it. When the pool is full, the pressures are equal and there are no problems.

But once empty there is no water inside the pool to keep the walls stable and they may bow inwards. To help prevent This (more so in fiberglass pools) internal bracing is used. In extreme cases the underlaying water table may lift the pool up.

HYDROSTATIC VALVE:

To help reduce this pressure differential there are hydrostatic valves fitted in the deepest part of most pools. This valve is to release any water that is under the pool, into the pool, so as to relieve pressure. Such groundwater is pumped away as the pool is nearly or completely empty

Fig 1: Typical hydrostatic valve assembly

See "Info Sheet: Hydrostatic Valves" for more details

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Some pools will have an inspection pipe near the pool which can be used to determine the ground water level. (It's usually located in the surrounding tiled area and will have a shower waste grill on top, check water depth with broom handle) . It may be connected to a porous/aggregate drain around the pool bottom. If water table high, insert flexible hose and attempt to pump the excess water and lower water table, using this feature.

EMPTYING A POOL:

If pool at bottom of dip, in wet soil or near sea or lake, then ground water levels may be an issue.

We suggest for fibreglass pools not emptying if the water table is high, say less than 1 M deep and if between 1 – 2 M, proceed with caution. It's not advisable to leave a fibreglass pool empty if heavy rain is expected. Refill to about half full if you can, to get some stability.

Test the situation by emptying the pool about 1/3 and leave overnight to check on any pressures, bulges, or movement of the shell, and watch to see it does not "lift up - pop out", and if it does refill quickly. If okay, then empty a further 1/3, so you can release the hydrostatic valve.

(To release valve, lift off cover plate and then pull up the mushroom shaped cap, in the sump, which should let dirty water into the pool) (If seized, then try to force up with screwdriver under lip) (ALWAYS a good idea to replace when pool empty, see your pool shop). Leave overnight and if okay continue empty pool.

Hydrostatic valves may leak after pool is empty, this can be dealt with by using a 1 Metre x 50 mm stand pipe screwed into an Iplex 50 mm Press Adapt Valve, **IB** (see a good plumbing supply) which is screwed into your pools Hydrostatic valve fitting. Or fit a hose or build a dam and pump out as needed.

Consider replacing the Hydrostatic valve, when pool empty. (See a pool shop).

SPRINGY FLOOR:

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You may notice some springiness in the floor, though hopefully no bulges. Try not to walk on any springy areas and use some plywood sheets to spread the load, while preparing the pool. Fibreglass is quite resilient, but continuous flexing is not good. Also, older fibreglass pools may be somewhat brittle with age or if of poor quality and may crack if flexed.

BRACING ACROSS THE POOL:

Bracing should be considered if any doubt about the water pressure and use 2 – 3 braces across the pool. (Place as soon as you can get into the pool to work) These can be **Acrow props** (Hire Company) or timber posts, both with a plywood panel about 600mm (2ft) square to spread the load. They will require moving as surface preparation and resurfacing are undertaken.

For some pools, especially if in high water tabl , or structurally weaker, or there is no hydrostatic valve, bracing is desirable to prevent collapse. This can also be a good idea if pool at bottom of dip, or if any rain water may run underground to wash away fill behind walls. Here is what some pool owners have done to reduce risk. Naturally it will be necessary to remove bracing to clean paint areas covered by bracing boards or panels.

Think about the process before emptying your pool.

The easiest to undertake is probably the one with the horizontal plank just before the top. The surface can be prepared while partly full, then brace and empty. Carry out all preparations and painting work then partly fill pool, remove bracing, and finish off 150 mm band that was covered by blank.

Even when the pool is braced in some circumstances the walls still move and paving can begin to sink. If this happens then the pool must be dug up to remove the pressure.

Cotec provides this information in good faith, we do not proport to be experts in managing Fibreglass pools. The person managing the project takes full responsibility.

REFER TO THE FOLLOWING SPECIFICATIONS FOR RELATED INFORMATION:
PS-C010 Fibreglass and Osmosis MAR 21

ISSUE: 04 DATE: 1/12/22