

## Sandfilters

One regular, routine task that must be carried out every 4 to 5 years is the replacement of the filter media in the sandfilter. It's a horrible, messy, backbreaking job but well within the capabilities of a masochistic DIY pool-owner.

Pool filter sand, like most things to do with pools, is more than it might appear. Viewed through a microscope, the grains of sand from rivers, gravel-pits and beaches are rounded; because they have been rolled in water and all the sharp edges have been smoothed off. Pool sand, by contrast, is made up of almost perfect cubes, with flat faces and very sharp edges, and is produced by crushing and sieving a special type of silica rock. The grains are roughly the same size.

The grains of pool-filter sand 'fit together' snugly, leaving tiny, tiny passages between the grains. It is the size of these passages that determines what size particle you can filter from the water. When the sand is new you can expect filtration down to around 15-20 microns but this may drop off to 30-40 microns after a couple of years. This is caused by the gradual erosion of the sands' sharp edges by the action of the water passing over it.

Zeolite is a far better filter media; filtering down to 2 microns and also stripping ammonia and metals by ionic action. See <http://www.deep-blue-pools.com/zeolite.htm> for details. It is a little dearer than sand but you only need half the amount by weight. (i.e. - if your filter holds 100 Kg of sand you'll only need 50Kg of Zeolite.)

### To Replace Sand and Collectors

Switch the pump to 'Off' and **close all valves**. Set the rotary valve to 'Closed' Remove the lid of the filter and, immediately underneath, you will see a plastic piece that looks like a large-hole watering can. This is the diffuser and must be gently removed from the filter by gently twisting and pulling. Normally there is air relief tube extending up through one of the holes – this tube allows pressure to be balanced between the top and bottom halves of the filter – take care not to damage the tube or breather.

Now you can get at the sand for removal. Use an empty can, or a small plastic jug, to scoop the sand out, and dispose of it into buckets for later dumping. Take care not to damage the plumbing inside – feel your way until you are familiar with the layout of components. Once most of the sand is removed unscrew the collectors from the central hub of the lateral assembly for later renewal.

Use a little residual sand and water to scour the inside of the filter vessel, and then remove the remainder of the sand. Wash the top and outside of the filter and the screw threads of the collector hub with a hose to remove sand grains. Install new collectors if required - remember that they have to last for a further 5 years (buy them at a pool-shop – take an old one for comparison because there are many different sizes. Normally they have to be ordered as there are so many different sizes).

There may be a plate, on the outer surface of the filter, which details the Filter Model and the quantity of sand within it. Very often this is missing or illegible and you will have to guess, using the amount of sand removed as a rough guide.

Place a can or plastic jug over the upward-facing opening to the inlet pipe to avoid filling it with sand. Pour new sand into the filter and add water to help the sand to settle. The correct sand level is to the top of the horizontal section of the upper pipe. (It's simple once you see the inside of a sand-filter.) If you do add too much sand the level will adjust automatically during routine back washing, when the excess will be gradually flushed out.

Rinse the filter lid nuts and caps, or lid screw thread as applicable. Examine the filter lid 'O' ring and replace it if it is damaged in any way. Wipe the 'O' ring with a thin coating of silicone grease or Vaseline and thoroughly clean the underside of the filter lid and the filter seating. Replace the diffuser and breather assembly. Fill the filter with water, replace the lid and tighten down carefully. Set the rotary valve to 'Backwash' and open the Bottom Drain and Waste valves.

Backwash the sand for several minutes to remove dust, then rinse as normal. Check for leaks during this process. Repeat the cycle until the water runs clear.

**NOTE:** If refilling with Zeolite, backwash and rinse after each bag is added.

Set all the Pump-room valves and switches to 'Normal Running'.

Congratulations! You have just renewed the sand and collectors in your sand filter! Now go and rest your back for three days.

The old sand must not be used for plants, for building purposes or in a sand-pit.