

## CHOOSING THE POOL FILTER THAT IS RIGHT FOR YOU

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When it comes to the maintenance of your pool, and the quality of your pool water, the hardest working piece of equipment is your pool filter. Pool filtration units are definitely products that should be well researched prior to a purchase, as they work so hard and generally run 24 hours a day. There are three types of swimming pool filters on the market:

- Sand
- Cartridge
- Diatomaceous Earth (DE)

Naturally having a variety of pool filter technologies on the market leads to many consumer questions, and confusion. This Article has the goal of helping you make an educated purchase. Firstly regardless of what people say any type of Filter can be used to properly maintain your pool, however the quality of the actual filtering results will vary.

**Sand** - Sand filtration involves a high performance water pump pushing water through a bed of sand through a set of lateral tubes. As a separate pump is used to push the water through the filter, the filter area is the same area as the filter. A 24 inch filter will have a 3.14 sq ft filter area. In sand filtration units only the top inch of sand is actually effective for filtering. Sand filtration units work on the principal that by pushing water through a packed layer of sand only water and very small particulates will be able to slip through the space between the particles of sand.

As the water pump pushes the water through the sand and the particulates are forcefully removed from the water they will start to build up within the filter and sand. This will cause the pressure within the filtration unit to increase, and the pressure will continue to increase until they are removed from the filter. This is because the water pump now has to push the water through not only the sand but debris as well. A sign of this is a decrease in the flow of the water out of your filter back into your pool. Most filters have a pressure gauge, so after your purchase you will want to review your documentation to check the normal operating pressure parameters of your pool filter.

When the pressure in the filter is no longer operating within the normal operating parameters you will need to put the filter into a backwash cycle. Backwashing a filter involves putting the filter into reverse to purge the wastewater. Once the filter has been backwashed you can now change it to the rinse mode, which repacks the sand, then you can put it back into the filter mode. This generally needs to be done every couple weeks, but it is large dependant to the frequency of use of the swimming pool, and the environment a pool is located in (an outdoor pool is more likely to have more debris). Eventually you will need to replace the sand, which is easily and inexpensively replaced.

**Cartridge** - Cartridge filtration units work on the same principal as a filter found in a sink. Cartridge filters are able to trap dirt and particles down to 25-100 microns in size depending on the quality of the filter. One of the main advantages over sand based filters is the fact that they have more surface area, which leads to more effective filtering. It will generally take longer for them to clog up compared to sand. Most cartridge filters have an area larger than 300 sq ft., allowing you to go longer between having to maintain your pools filtration. The larger area a filter has the longer it can be left without requiring maintenance. Cartridge filters are usually the filter of choice for smaller above ground pools, and spas. In fact they are generally not recommend for pools larger than 30,000 gallons.

Maintenance on Cartridge filtration units is also much easier then on a sand filtration unit. Instead of having to backwash the system you simply remove, and replace the filter. The filter should be replaced generally every 2 – 5 years, once again depending on the environment your pool is located in. Replacement filters are generally inexpensive, and easy to replace and remove. Some people also clean their filters at places like the car washes, however this tends to degrade the quality of the filter, and smaller debris may no longer be filtered. It is also recommend that you clean your filter around every 6 months, by running a hose over the filter and between the filter pleats. As for the quality of the filtration it removes particles small then that of sand filtering, but not as small as Diatomaceous Earth filters.

**Diatomaceous Earth** - Diatomaceous earth is the fossilized exoskeletons of tiny diatoms, which are a type of hard-shelled algae. They are used to coat grids in a filter housing, the diatoms are used as a tiny sieves to remove debris. Because of the size of the diatoms they can filter particles that are down to 5 microns in size! The filter area of a Diatom filter is generally 60-70 sq ft, giving you a lot more filtering area then sand based filtration but less then Cartridge based filtering.

Like a sand filtering you are required to backwash, however you will be required to recharge the filter with more DE powder. DE Filters run at higher pressures than cartridge filters, and therefore they can be inefficient and reduce the water flow.

Diatomaceous earth filtrations can also be coupled with sand filters and cartridge filters to increase their ability to filter smaller particles.

**Conclusion**

If you want the cleanest water Diatomaceous earth filtration is ideal for you. If you want the lowest maintenance solution, and your pool is smaller then 30,000 gallons then Cartridge filtration is ideal for you. As for sand filtration it is considered the bulletproof filter, it generally has the lowest maintenance costs and is the only filtration system recommended for public pools (such as Apartment buildings, and Recreation Centres).

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