

SiC ceramic membranes for pool and spa

Sand filters worldwide are responsible for an enormous volume of clean water being used for backwashing every day (522.228 m³/day for 19.334 registered public pools alone, <http://www.swimmersguide.com/>). CoMeTas target to replace existing sand filters in order to reduce the water consumption for cleaning the filtration system. The membrane filtration unit is more compact than sand filters and in addition offers an absolute filtration rate. Increasing focus on reducing the harmful disinfection byproducts like Tri-chlor Halo Methanes (THM) has increased the focus on using membranes instead of sand filters.

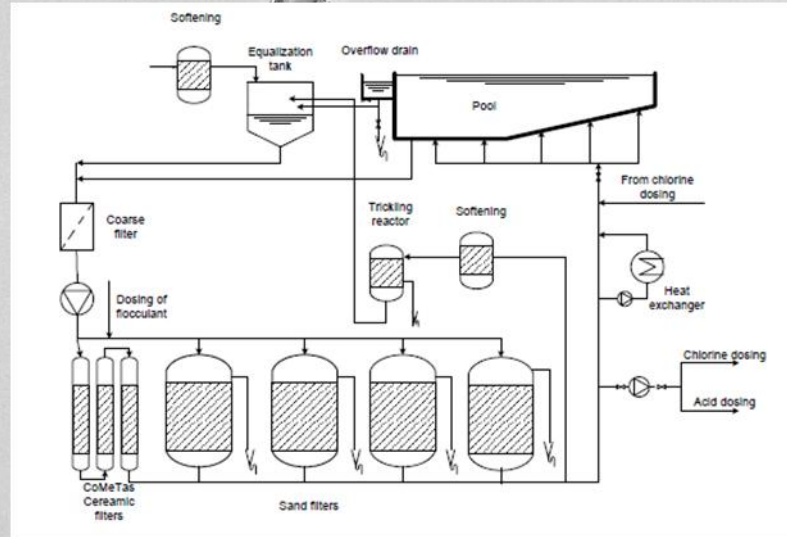


Figure 1: Pool and filtration setup

Method

Installation of ceramic membranes

The potential of CoMeTas Aqua Solution membranes for treatment of pool water was determined at a public pool site in Denmark.

Membrane type	Aqua Solution
Membrane dimension	OD146mm x L800mm
Filtration principle	Dead-end filtration

Results

Membrane capacity per element

The following results were found during operation of the membrane unit for treatment of pool water.

Target pore size	Capacity per element
3 micron	30-40 m ³ /h (0.3 bar TMP)
1 micron	15-20 m ³ /h (0.3 bar TMP)
0.1 micron	7-10 m ³ /h (0.3 bar TMP)
Back wash/day	1.6
Back wash volume	80 L



Figure 2: Membrane installation delivered by Provital Solutions

Conclusion

High capacity membrane installation at reduced foot print

- The membrane filtration unit with SiC membranes from CoMeTas demonstrated continuous treatment of pool water from a large public pool
- The capacity per membrane element was determined for the actual pool; up to 40m³ at 0.3 bar TMP
- The water consumption for back washing was reduced by 75%

