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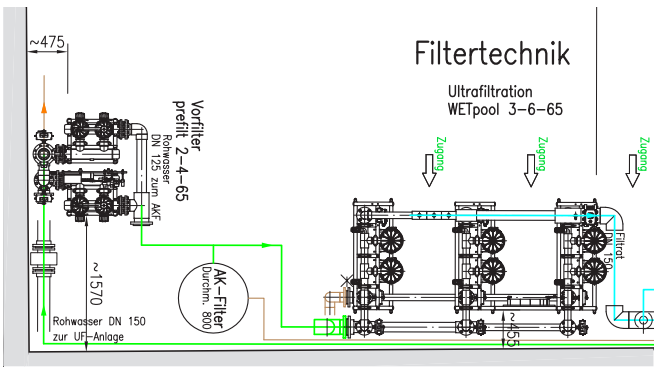
Water cleaning with ultrafiltration

Also an ideal solution for open air pools

A new diving pool of stainless steel with a climbing wall at the open-air swimming pool in Kulmbach. The pool was to be fitted with its own filter system.

As no space was available in the existing technical building, a decision was made to go for a space-saving solution. It was possible to use a corner in the existing heated hall for ultrafiltration.

The ultrafiltration proved to be not only a space-saving solution, but also a safe one. Contamination of the filters is eliminated.



Space requirement – filter technology:

Length:	7.00 m
Width:	3.50 m
Height:	2.20 m

Technical data – diving pool

Length:	12.5 m
Width:	11.0 m
Depth:	4.0 m
Volume:	550 m³
Inlet system:	16 nozzles in pool walls in two different levels (jet turbulence)

Filter technology room

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Two series of modules rinse the third

Rinsing

The ultrafiltration membranes and the prefilters are cleaned fully automatically. The three-lane set-up for treatment means that one series of modules is rinsed by the other two.

Rinsing water requirement water rinsing:	0.8 m^3/Rinsing
Rinsing water requirement chem. rinsing:	2.0 m^3/Rinsing
Rinsing flux:	300 l/m^2 h
Number of water rinsings:	3 per day
Number of chem. rinsings:	1 per day

Neither a separate pump nor a rinsing water reservoir is required for module rinsing.

Technical data – filter system

Volume flow:	65 m^3/h
Flux during filtration:	180 l/m^2 h
Total membrane surface:	360 m^2
Membrane surface per module:	60 m^2
Number of modules per lane:	2
Number of modules lanes:	3
Pore width:	0,02 µm

4 disc filters 200 µm as prefilters

Control air and air rinsing of the prefilters

Degradation of disinfectant biproducts

An active carbon filter (ø 800 mm) in the ultrafiltration system is situated upstream to degrade bound chlorine and trihalogenomethanes. Part of the flow is redirected and passed via the filter. Rinsing is effected fully automatically once a week. A separate pump for rinsing is not required and the optimum throughput is determined by a frequency converter.

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