

Top design for sustainable, advanced water treatment

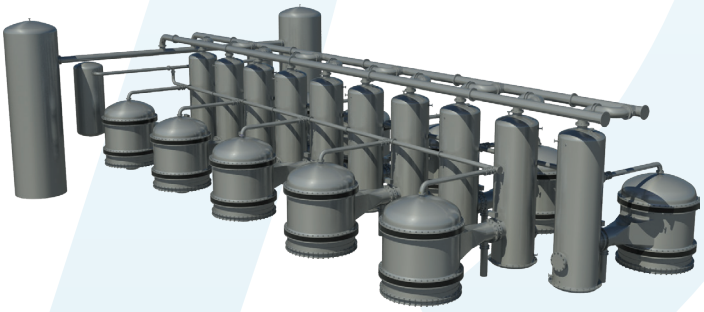
CeraMac

# Innovative ceramic membrane block design

**CeraMac is an innovative ceramic membrane block design by PWN Technologies, offering a considerable reduction in investment costs. The CeraMac design makes it economically feasible to use ceramic membranes on surface water for large-scale applications.**

The use of a ceramic membrane compared to a polymer membrane has many advantages. Besides a longer lifetime almost any chemical can be used in combination with the membrane, making it possible to clean it with almost any thinkable cleaning regime. The strength of the membrane also makes it possible to use extreme backwash pressure without damaging the membrane and risking an integrity breach.

Although ceramic membranes are perceived to be more expensive than polymeric membranes, their longer life expectancy results in comparable membrane operational costs. Despite these advantages, the application of ceramic membranes has been limited worldwide, mainly due to the high investment costs of the existing ceramic block designs. The CeraMac design by PWN Technologies however offers a considerable reduction in the investment costs, which can mean a breakthrough in the market share of ceramic membrane application.



Design of a 120 MLD full-scale CeraMac plant.

Besides very efficient process conditions, the total footprint is extremely low, creating the ultimate treatment step to remove all suspended matter. The application of CeraMac means a significant improvement in the filtration process. CeraMac is therefore extremely suitable in places where producing high quality drinking water is difficult or even impossible to achieve using conventional treatment processes. CeraMac's innovative design uses the world's best ceramic membranes from Metawater, in a highly compact set up. This unique block design combines 200 elements in a single vessel. Not only has CeraMac a very small footprint, but also the amount of stainless steel and number of valves is less than other membrane installations. The strength of the CeraMac block design enables a powerful backwash of up to 5 bar, to clean the membranes, with a downtime per backwash of only a few seconds, resulting in higher productivity and lower energy consumption, without the risk of water hammer.

CeraMac block with 200 elements in a single vessel.

## The advantages of CeraMac:

- Small footprint
- Low energy consumption
- High reliability
- Limited number of valves and use of stainless steel per block
- Low maintenance
- High efficiency
- Powerful backwash, at a pressure of 5 bar
- Downtime for backwash only a few seconds: high productivity

## PWN Technologies, partner in water supply

PWN Technologies is a wholly owned subsidiary of PWN Water Supply Company North Holland. PWN supplies water to about 1,7 million people in Holland. PWN Technologies was founded in order to share the impressive R&D programme of PWN Water Supply Company with others. Our revenues are invested in our R&D programmes. This enables us to enhance our position as a leading solution provider.

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