

## MORE THAN ULTRAFILTRATION

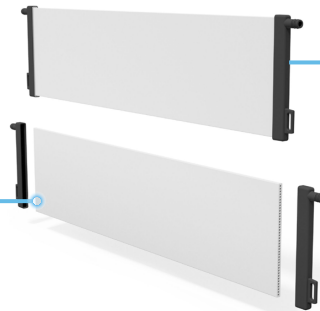
### Product Design Concept

Filter active membrane layer on the outside of the ceramic plate  
0.1 micron

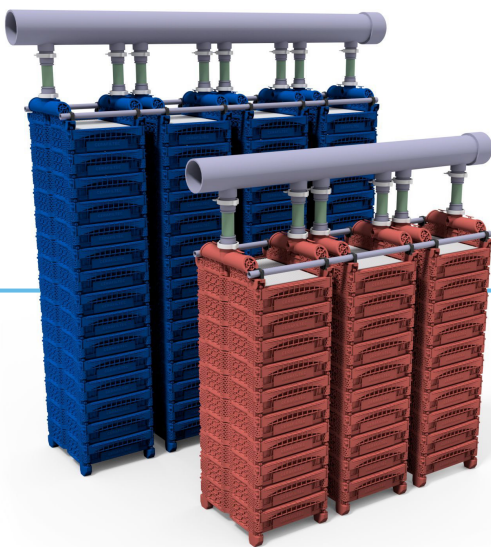
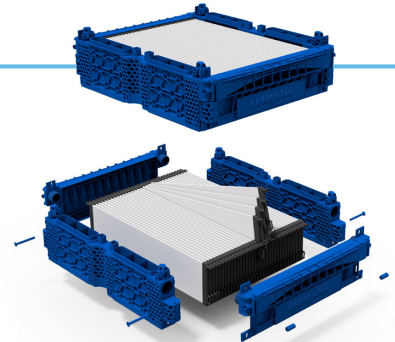
Membrane body (substrate) with very large pore size  
8 micron



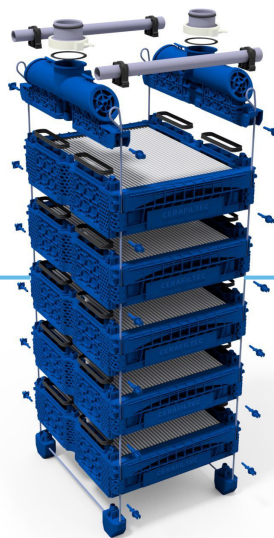
Single ceramic plate  
Double side filtered water outlet for high flux operation



Filtration module with 6.0 m<sup>2</sup>  
Multi ceramic plate configuration with exchangeable single ceramic plates and internal filtered water piping



Multi tower configuration  
Most compact and flexible installation due to frameless design concept



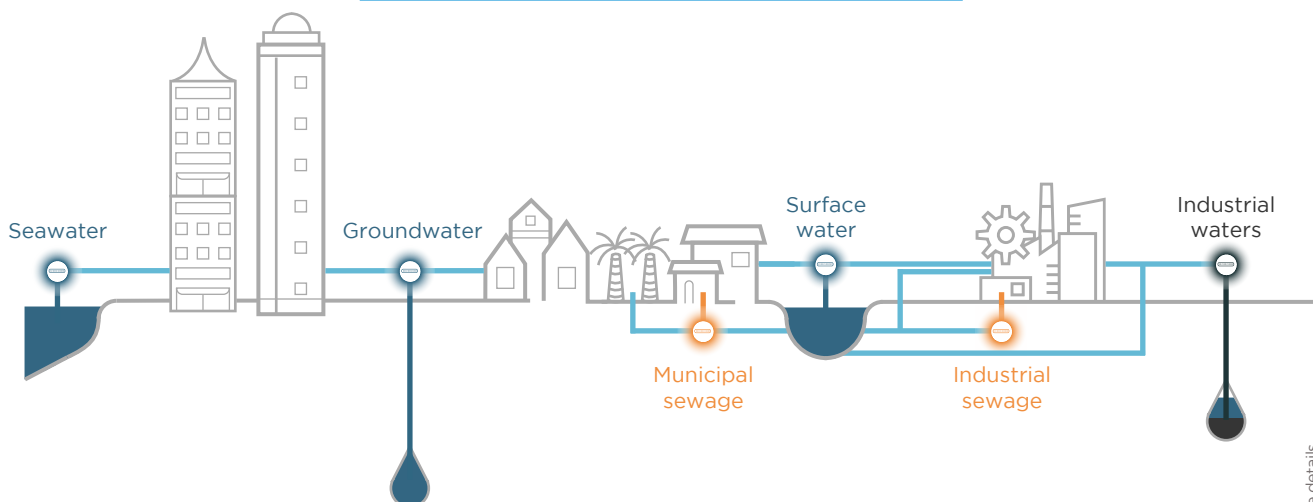
Single filtration tower exploded  
Fully made of glass fiber reinforced resin without any steel parts



Single filtration tower  
assembled with 5 modules,  
header and base sets



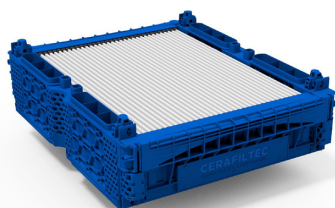
### Water We Clean



## Products

### MODULE 6.0 S

Our standard  
for most applications

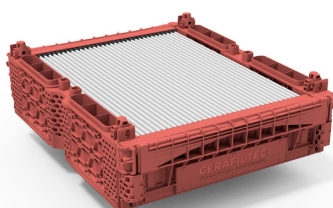


High flux operation up to 1,500 LMH for  
water and sewage treatment applications



### MODULE 6.0 H

Our specialist  
for hot water filtration

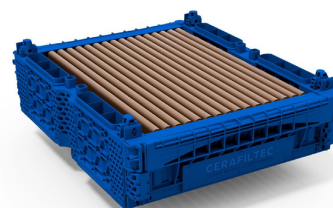


Operation above 60 °C for hot groundwater,  
produced water, boiler and heat exchanger systems



### MODULE ST SERIES

The allrounders  
for sludge thickening



Extra large distance between  
single plates available in 3 standard configurations



### LAB TEST UNITS

Ideal for your  
laboratory



Sample filtration for simple study  
of filterability and achievable  
filtered water quality;  
Use of a small single membrane  
plate with filter area of 0.01 m<sup>2</sup>



### SUITCASE TEST UNIT

Must have for  
mobile testing

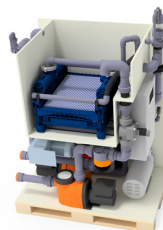


Portable unit for on-site tests;  
Similar equipment to  
lab test units, but packed into a  
suitcase weight conform to airline  
baggage check-in standards



### SKID PILOT UNIT

Compact and easy  
to transport

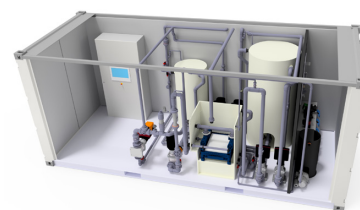


For long duration on-site tests  
for all water applications  
with dead-end filtration process;  
Contains a complete module  
with 6.0 m<sup>2</sup>



### CONTAINER PILOT UNIT

Full option and remote  
controlled piloting



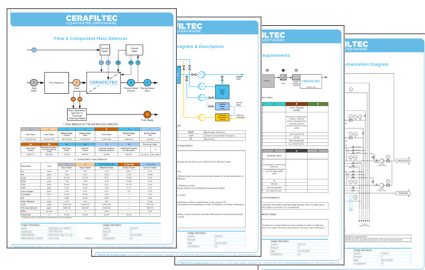
Similar to skid pilot unit, but also  
includes pre-treatment and  
chemical cleaning equipment;  
Remote controlled and full data  
monitoring (SCADA system included)



## Engineering Services

### PROJECTION

The right process design and  
project cost understanding

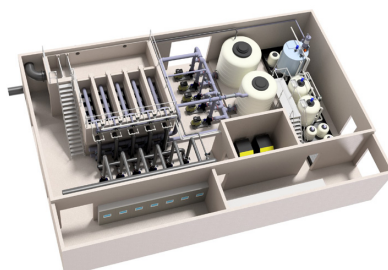


Detailed calculation package to filtration process  
and pre-treatment requirements, power and  
chemical consumption, equipment list and more



### PLANT LAYOUT DESIGN

For the most efficient  
construction and future operation

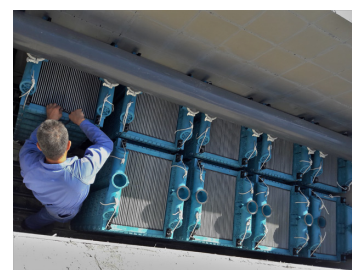


We provide civil works structure, filtration tank  
design, piping and instrumentation design,  
P&IDs and process philosophy



### INSTALLATION & COMMISSIONING

Assembly, installation,  
process start-up and more



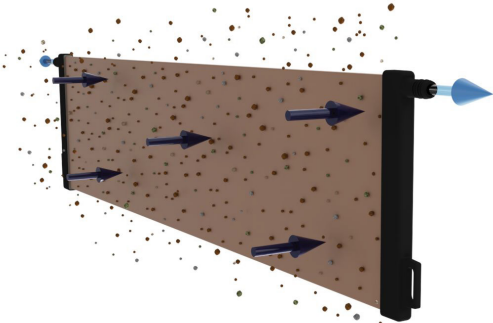
CERAFILTEC's installation team will be at your  
site and supervise your team for a fast and  
smooth plant commissioning and operation



## How It Works

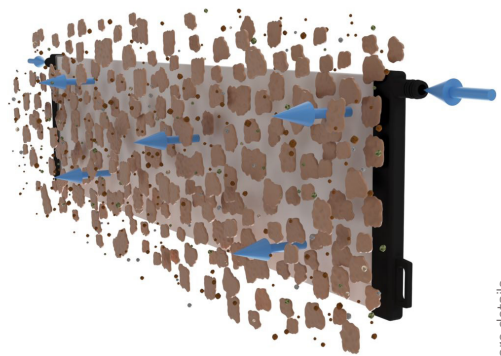
### OUT-TO-IN FILTRATION

Single ceramic plate with filter active layer on the outside of the membrane. Suspended solids are rejected on the membrane surface and forming a cake layer while clean water is passing through the membrane body and is collected at both end caps.



### IN-TO-OUT BACKWASH

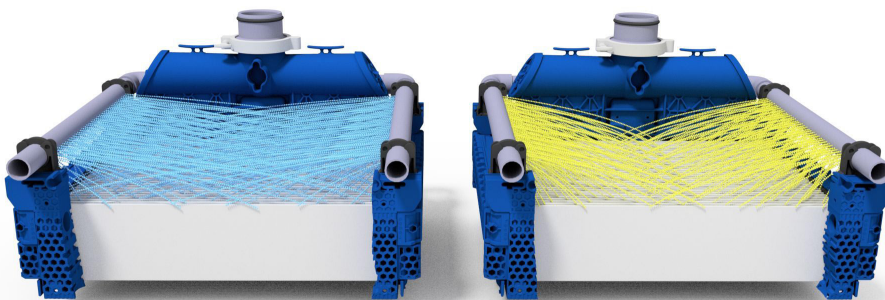
Reversed flow direction to filtration. A very small amount of filtered water is used to backwash the membrane. Within seconds, the formed cake layer comes off in flakes. Air-scouring can enhance the cake layer removal.



## Novel Double Line Sprinkler

The integrated sprinkler system is used as water jet to enhance the removal of cake layers during on-air backwash.

At lower flow rates, the sprinkler can also be used for an efficient chemical cleaning by spraying concentrated chemicals over the ceramic flat sheet membrane surface (on-air cleaning). Due to the capillary force of the membrane pores, the chemicals are sucked into the membrane (CapClean mode).



Sprinkler mode

CapClean mode

- Sprinkler mode as mechanical cleaning with a spray flow up to 20 m<sup>3</sup>/hr @ 2 bar
- CapClean mode as chemical cleaning with a spray flow up to 8 m<sup>3</sup>/hr @ 1 bar

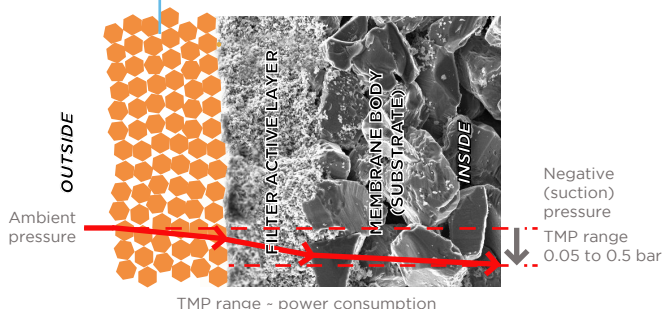


## Unique Active Cake Layer Filtration

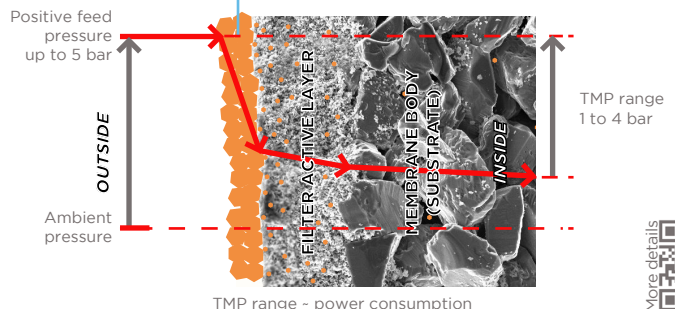
The module is designed as submerged solution with an out-to-in filtration process. It allows a targeted formation of a cake layer on the ceramic surface, contrary to pressurized membrane filtration solutions in which a cake layer formation needs to be avoided.

The cake layer can be used as additional filter barrier for enhanced removal of very small particles and colloidal fractions. Sorption processes inside the cake layer enable the selective removal of dissolved contents, like radium, uranium, arsenic or organics. The formed cake layer can function as protective coating to minimize biofouling or scaling. An improved filtered water quality can be achieved.

### SUBMERGED Thick/uncompressed cake layer with very low pressure decline

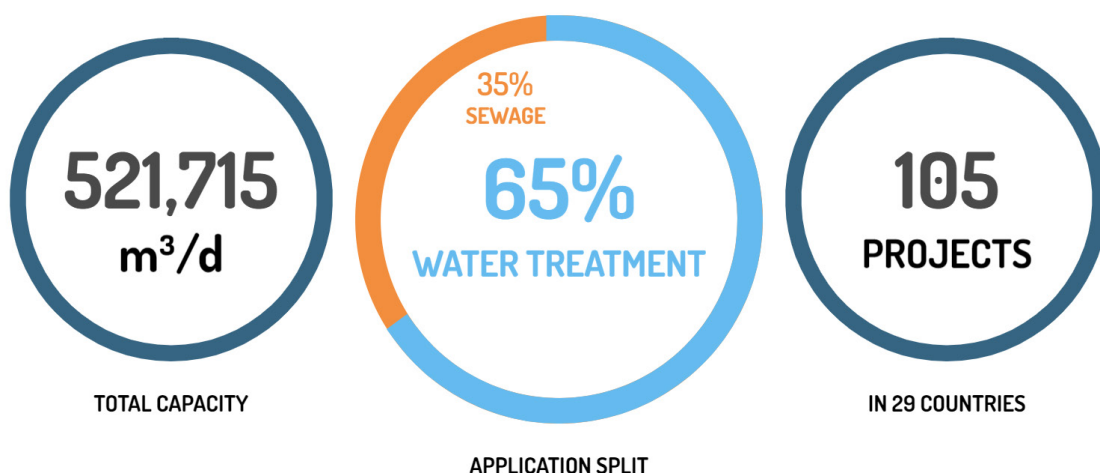


### PRESSURIZED Thin/compressed cake layer with high pressure decline





## Reference Overview



## About CERAFILTEC

Almost 3 decades ago, in 1993, the idea of the ceramic flat sheet membrane was born and patented. Since then, technology specialists have developed several products and processes using the perspective ceramic flat sheet membrane concept and established the technology in many water and sewage treatment applications.

In 2016, leading experts of the ceramic filtration technology decided to combine their know-how under one new umbrella: CERAFILTEC. During the first operating year, CERAFILTEC has developed the latest and most innovative ceramic flat sheet membrane module. Within a short time, the product was successfully applied all over the world.

Today, CERAFILTEC has been internationally established with entities, partners and distributors in Europe, Middle East, Africa, Asia, North America and Australia.



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