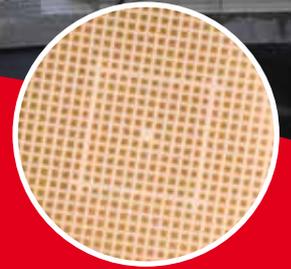


# HYDROTECH ANOXKALDNES

AnoxKaldnes™  
MBBR technology  
and Hydrotech  
microscreens.  
Perfect combination.



A compact and cost-effective solution for wastewater treatment



## Why combine AnoxKaldnes™ MBBR and Hydrotech microscreens?

AnoxKaldnes™ MBBR (Moving Bed Biofilm Reactor) technology is a compact biological treatment that requires suspended solids separation downstream, with or without chemicals addition.

Hydrotech microscreens is a compact and cost-effective solution for suspended solids separation.

The combination of both technologies is ideal when looking for a compact and cost-effective biological treatment of wastewater.

## Combining technologies and expertise

Hydrotech is a world leading company in the development and manufacturing of microscreens. AnoxKaldnes is the world leader in designing and supplying MBBR solutions. Both Swedish companies have more than 20 years of experience in their respective fields, and now after extensive cooperation have developed tools and tested solutions to optimize the combination of their technologies.



### Benefits of combining both technologies

- Compact process
- Robust process
- Flexible solutions
- Simple operation
- Low maintenance
- Proven technology
- Cost effective

### AnoxKaldnes™ MBBR technology + Hydrotech microscreen filters

The AnoxKaldnes™ MBBR technology is used in several different process configurations to create optimal biofilm solutions to treat wastewater. The basic idea behind the AnoxKaldnes™ biofilm technology is to have a continuously operating, non-cloggable biofilm reactor. This is achieved by growing biofilm on small carrier elements in suspension in the reactor. With the suspended carriers, the process can be made very compact, flexible and easy to maintain.

#### Very small footprint

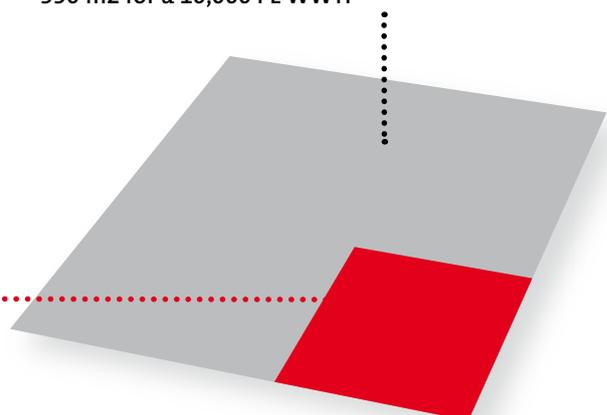
The use of the unique combination of the AnoxKaldnes™ MBBR technology and the Hydrotech Discfilter™ microscreen results in footprints that are up to 6 times smaller than conventional biological treatments.

**MBBR for BOD removal + Hydrotech Discfilter™**  
~ 60 m<sup>2</sup> for a 10,000 PE WWTP

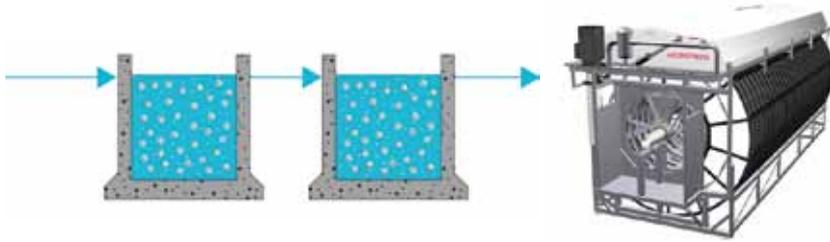
### The Hydrotech Discfilter™

is a microscreen used for solids removal and product recovery. The disc design is particularly advantageous when a large filter area is needed for suspended solids removal. The compact design of the Hydrotech Discfilter™ configuration results in a footprint 15 to 20 times smaller than conventional clarifiers. This makes the Hydrotech Discfilter™ a good choice for applications where a space-saving filter with fine filter openings and large filter area is required.

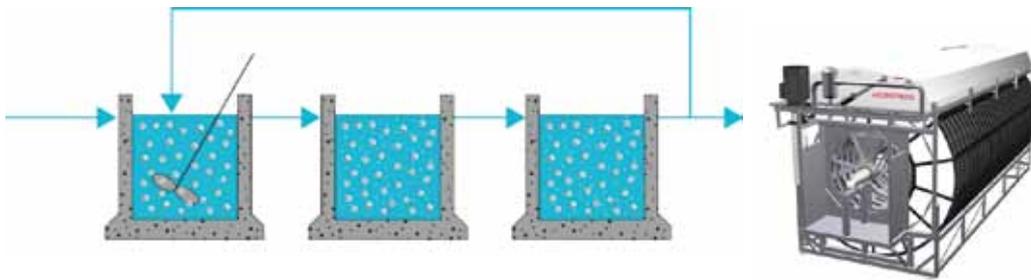
**Activated sludge for BOD removal + clarifier**  
~ 350 m<sup>2</sup> for a 10,000 PE WWTP



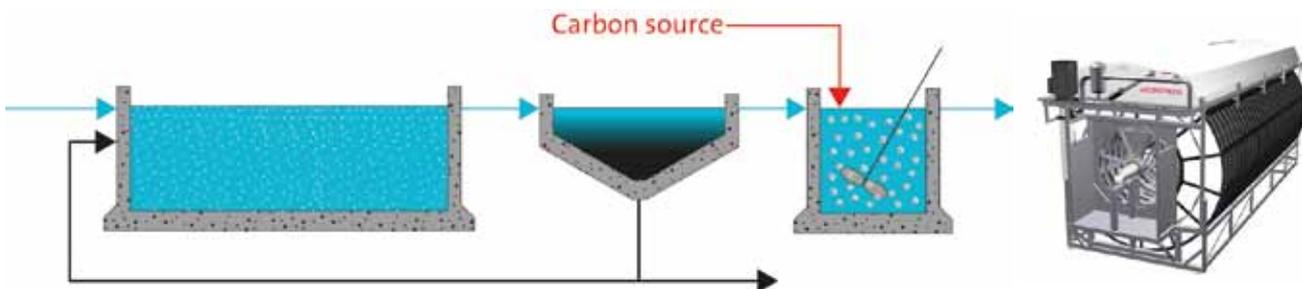
Multiple possible combinations to offer a solution to each application



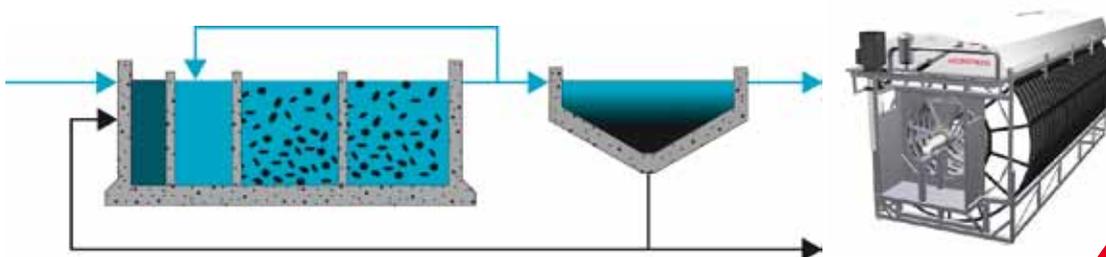
AnoxKaldnes pure MBBR for BOD removal + Hydrotech Discfilter™



AnoxKaldnes pure MBBR for total nitrogen removal + Hydrotech Discfilter™



AnoxKaldnes pure MBBR for post-denitrification + Hydrotech Discfilter™



AnoxKaldnes Hybas™ + Hydrotech Discfilter™ as a tertiary treatment

### Hydrotech microscreens as primary treatment

Hydrotech microscreens can be used as a primary treatment, with or without chemical addition upstream of the MBBR reactors. The organic load on the MBBR treatment is considerably decreased, reducing the size of the MBBR reactors and the size of the Hydrotech Discfilters™ used as secondary separation system. The total system becomes even more compact, flexible and cost-effective.

Looking for an even more compact and cost-effective solution? Try the unique combination of Hydrotech filter as primary treatment + AnoxKaldnes™ MBBR + Hydrotech Discfilter

# Case study

## Puget Theniers WWTP, France

In August 2009, Veolia Water Solutions and Technologies was contracted to build the new wastewater treatment plant for the municipality of Puget Theniers in France. To maximize the use of the available space, the plant needed a compact design.

Located at a 400 m altitude in the Alps, the plant also needed to be entirely covered to withstand the colder temperatures in winter. The Puget Theniers WWTP consists of two 100 m<sup>3</sup> MBBR reactors in series as biological treatment for carbon removal, followed by flocculation of suspended solids by adding liquid polymer and two Hydrotech Discfilters HSF2208/6 (one in operation, one stand-by) for solids separation.



### Design parameters

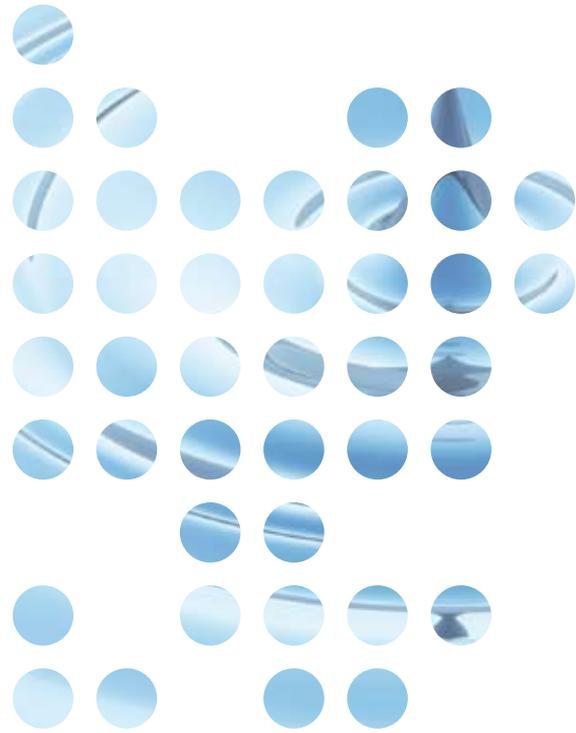
Capacity	5,500 PE
BOD	330 kg/d
COD	660 kg/d
TSS	495 kg/d
Min. temperature	12 °C

### Outlet requirements

BOD	< 25 mg/L
COD	< 125 mg/L
TSS	< 35 mg/L

By installing the AnoxKaldnes™ MBBR and Hydrotech Discfilter™ systems the Puget Theniers Wastewater Treatment Facility has reached its effluent requirements on a very small footprint.

The plant was conceived so that new MBBR reactors can later be build around the existing ones to achieve full nitrification and denitrification in the system in order to meet more stringent effluent requirements. This was made possible through a flexible design.



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