Wastewater treatment for the future!

REDUCE. REUSE. SUSTAIN.
Biowater Technology designs and engineers next generation technologies and solutions for the municipal and industrial wastewater treatment markets. The team has experience from over 300 projects and installations of MBBR worldwide.

The company provides innovative technologies and solutions for biological treatment of water and wastewater. Products include but are not limited to: MBBR, IFAS and Package Plants.


Biowater has offices in the United States and Norway and partners and representatives around the world.

Complete System Supply

Biowater Technology offer systems complete with biofilm carriers, aeration, retention sieves, mixing tanks as well as any tertiary treatment or additional equipment to suit the design.

We will guide you through the process from start to finish.

Knowledge

Unique know-how in microbiology and process engineering.

Process Guarantees Delivered

Most versatile technology available, easy to integrate into existing wastewater treatment plants (Municipal and industrial).

For the Future

New technology delivers dramatic reductions in CAPEX and footprint while facilitating existing infrastructure.

ROI

Immediate OPEX reductions in energy consumption and less use of consumables.

High Throughput

Continuous process with no regular downtime.

Markets

Municipal and Industrial.
Microorganisms in the biofilm that attach on the surface of the carriers take up pollutants as food for growth.

Biofilm carrier with solids.

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimensions</th>
<th>Protected surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>BWT15™</td>
<td>15 x 15 x 5 mm</td>
<td>828 m²/m³</td>
</tr>
<tr>
<td>BWTX™</td>
<td>15 x 15 x 8 mm</td>
<td>650 m²/m³</td>
</tr>
<tr>
<td>BWTS™</td>
<td>14,5 x 14,5 x 8,2 mm</td>
<td>650 m²/m³</td>
</tr>
</tbody>
</table>
NEXT GENERATION BIOFILM TECHNOLOGY

The CFIC® system is the next generation of biofilm technology. It has all of the benefits of a traditional biofilm process with moving carriers but has many additional benefits.

ABOUT FIXED FILM TECHNOLOGY

The basis of our CFIC® biofilm technology is the biological growth on polyethylene pieces called media or carriers. These carriers provide a protective surface area for the biology to grow. The biofilm that is grown can handle extremely high loading conditions while avoiding problems associated with clogging or shock.

The CFIC® reactor contains highly packed biofilm carriers (typically 90-99% bulk volumetric fill) that hinders movement of the carriers that normally occurs in an MBBR reactor.

The CFIC® process is designed to increase treatment capacity while reducing footprint and overall energy costs.

PROCESS BENEFIT

ENERGY SAVINGS
Substantial reduction in energy consumption up to 20-30%!

EFFLUENT QUALITY
CFIC effluent quality is superb, allowing for direct tertiary filtration and reuse.

LOW CAPITAL COSTS
Reduction in capital costs by reducing the size of the membrane or tertiary treatment.

FLEXIBLE
Upgrade an existing SBR, MBR or MBBR to provide additional capacity.

PERFORMANCE
Improves biological treatment which makes membranes perform more efficiently.
**CFIC® ENERGY CONSUMPTION**

A higher oxygen transfer rate, due to a longer lifetime of the air bubbles, leads to lower energy consumption. The biological treatment stage of a WTTP accounts for 2/3 of its total power consumption.

**CAPEX**

CFIC® can be integrated into existing WWTP, utilizing the existing infrastructure.

**SOLIDS IN EFFLUENT**

CFIC® process lower total suspended solids (TSS) concentrations that MBBR process, even at significantly higher wastewater loading rates.

**SPACE REQUIREMENTS**

CFIC® allows 20% more compact bioreactors compared to MBBR due to its optimized process and biocarrier design.
THE PROCESS
The Biowater CMFF® biological process is based on the MBBR (Moving Bed Biofilm Reactor) concept where moving plastic carriers with fixed biofilm remove organic and inorganic substances in the water. The proposed Biowater CMFF® design includes the Biowater biofilm carrier elements which are freely mixing around in the reactor and are specially designed for biofilm growth.

The bacteria will grow and develop a solid biofilm on the large protected surface area. The moving pattern of the carriers in the reactors will also provide a natural removal of excess biofilm, due to the shear forces between the carriers and the water in the reactor.

The biofilm can handle extremely high loading conditions without any problems with clogging or shock.

CMFF® MBBR CONFIGURATION
Supply of the primary and tertiary treatment as needed for design. Settling or DAF separation can be used.

PROCESS BENEFIT

COMPACT
The amount of biomass within a given volume can be doubled.

EASE OF OPERATION
Virtually maintenance free. Essentially nutrient levels and DO levels are the only controls needed for this system.

FLEXIBLE
BOD and Nitrogen removal can be included. For retrofits existing tanks can be used.

STABLE
Self regulating biofilm ensures stable treatment under variable loads.

SLUDGE PRODUCTION
Efficient particle separation and sludge treatment. No sludge return and no clogging.

COMPLETE SYSTEM SUPPLY
We offer systems complete with the biofilm carriers, aeration, retention sieves, mixing, tanks as well as any tertiary treatment or additional equipment to suit the design.
ABOUT FIXET FILM TECHNOLOGY
The basis of our CFAS® biofilm technology is the biological growth on polyethylene pieces called media or carriers. These surfaces provide a protective surface area for the biology to grow. The biofilm can handle extremely high loading conditions without any problems with clogging or shock.

Biowater’s CFAS® (IFAS - Integrated Fixed Film and Active Sludge) solution represents a key technology for winning strategic deals now and in the near future.

CFAS® CONFIGURATIONS
Supply of the primary and tertiary treatment as needed for design. Can be followed by either traditional clarification or flotation.

PROCESS BENEFIT

UPGRADE
Upgrade of existing activated sludge plants to achieve nitrification.

COMPACT
Doubles the capacity of an existing Activated Sludge plant. For new plants the footprint is very small. For retrofits existing tanks can be used.

FLEXIBLE
BOD, Nitrogen and Phosphorus removal can be included.

STABLE
Self regulating biofilm ensures stable treatment under variable loads. No clogging.

SLUDGE PRODUCTION
 Produces sludge with low sludge volume index. This is efficient for following separation and sludge treatment process.

COMPLETE SYSTEM SUPPLY
We offer system complete with biofilm carriers, aeration sieves, mixing, tanks as well as any tertiary treatment or additional equipment to suit the design.