



Biothane[®] Anaerobic Treatment

Technology that turns wastewater into energy

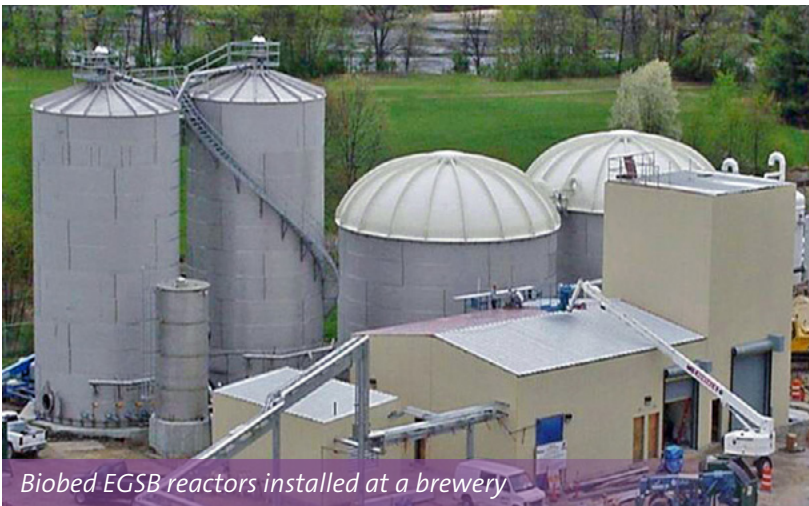
WATER TECHNOLOGIES

Biothane® high-rate anaerobic reactors are the leading technology for the treatment of high-strength wastewater, with the benefit of green energy production. Available in two configurations, Biothane reactors offer proven technologies with patented features that set them apart as the leader in the industry. Our process experts work with you to determine the best technology for your application.

Biobed® Advanced EGSB

The Biobed Expanded Granular Sludge Bed (EGSB) reactor is a tall, slender reactor for anaerobic wastewater treatment that efficiently converts organic pollutants (COD) into biogas in an oxygen-free atmosphere. In the anaerobic process, bacteria form granules that settle to create a high concentration of biomass in the reactor.

This patented design handles high volumetric loading rates while maintaining high treatment efficiency, and is ideal for applications with space constraints.



Biobed EGSB reactors installed at a brewery

Biothane Benefits

- Technology pioneer with more than 35 years of experience
- More than 550 installations globally
- Compact designs with small footprint
- Efficiently handles high COD load with low retention time
- High purity methane (65 – 80%) suitable for reuse
- Biogas easily converted to electricity with a Biothane CHP package
- Low sludge production with high solids content for easy disposal
- Low energy requirement for operation
- No odor or noise emission
- Manages variable hydraulic loads
- Choice of construction materials

Biothane® Advanced UASB

The Biothane Upflow Anaerobic Sludge Bed (UASB) reactor is the original Biothane reactor design and is still the best choice for numerous applications. In this reactor configuration, the granules settle easily, developing a concentrated biomass in the reactor. The UASB is ideal for sites with height limitations that cannot accommodate the EGSB or for waste streams higher in TSS where the lower profile is desirable to retain the solids in the biomass.



Biothane UASB Package System is a low-profile, space-saving option

Custom Designs or Packaged Options

Biothane reactors are available as custom designs or packaged systems, depending on your needs. Packaged systems offer the advantage of expedited delivery and reduced installation costs.

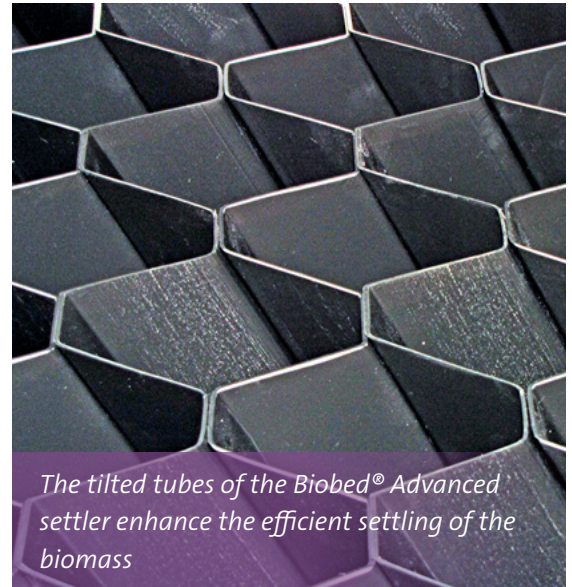


Packaged systems enable expedited delivery and easy installation

Biobed® Advanced Settler – a Clear Advantage

The unique Biothane reactor designs promote a high concentration of active biomass in the sludge bed. As a result, higher loading rates and shorter hydraulic retention times can be achieved in your system, as compared to conventional systems.

The patented Advanced settler design is a key component of both the EGSB and UASB reactors. This settler design with tilted tube plates efficiently separates the biogas and biomass from the treated wastewater, thanks to its effective effluent collection system of submerged pipes. The innovative design fits both round and square tanks with heights up to 52 feet. Energy usage within the system is minimal because the reactors do not rely upon mechanical mixing.



The tilted tubes of the Biobed® Advanced settler enhance the efficient settling of the biomass



Technician installing tilted tube plates into a Biobed Advanced Settler



Field-erected installation of a Biobed Advanced Settler

Process Validation in our Laboratory

Veolia offers process validation at our new facility in Pennsauken, New Jersey, to ensure that our anaerobic system designs are the best solution for your application. Laboratory capabilities include:

- Basic wastewater characterization
- Gas chromatography for volatile fatty acids testing
- Treatability and bio-methane potential (BMP) testing
- Biomass activity
- Anaerobic chemical toxicity testing
- Long-term laboratory pilot testing
- Maceration equipment
- Solids separation with centrifuge or microfiltration membranes



Our on-site laboratory provides wastewater characterization and pilot testing services

Industries Served

Over the past 35 years, Biothane technologies have been installed in more than 550 facilities worldwide. While these technologies are applicable across many industries requiring biological treatment, our key customers historically have been in the following sectors.

Food & Beverage

- Brewery
- Corn / Starch
- Dairy / Cheese
- Distillery
- Fruit Juices
- Fruit / Vegetable
- Potato
- Soft Drink
- Sugar / Sugar Beet
- Winery
- Yeast

Pulp & Paper

- TMP, CTMP, NSSC, Kraft Condensates
- Recycle Paper

Chemical / Pharmaceutical

- Corn and 2nd Generation Ethanol
- Soy / Biodiesel
- PET / PTA / DMT
- Antibiotics



EGSB installation with Biobed Advanced Settler in glass-lined, bolted steel tanks

Why Biothane?

- Process expertise based on decades of experience
- Continuous innovation through research and development
- Strong history of Design-Build project execution



Biothane UASB package system installed at a food processing facility

Resourcing the world

Veolia Water Technologies

6981 North Park Drive • Pennsauken • NJ 08109 USA
tel. +1 856 438 1776 or +1-800-337-0777

water.info@veolia.com
www.veoliawaterstna.com