

UASB Reactor

Main Features

- UASB bed system
- Production of biogas
- Easy to use and maintain
- Gas collection in head space

Applications

- Anaerobic (pre) treatment of effluents from various origins such as:
 - Municipal
 - Pulp & paper
 - Beer & beverage
 - Food industry
 - Fermentation industry
 - Chemical industry

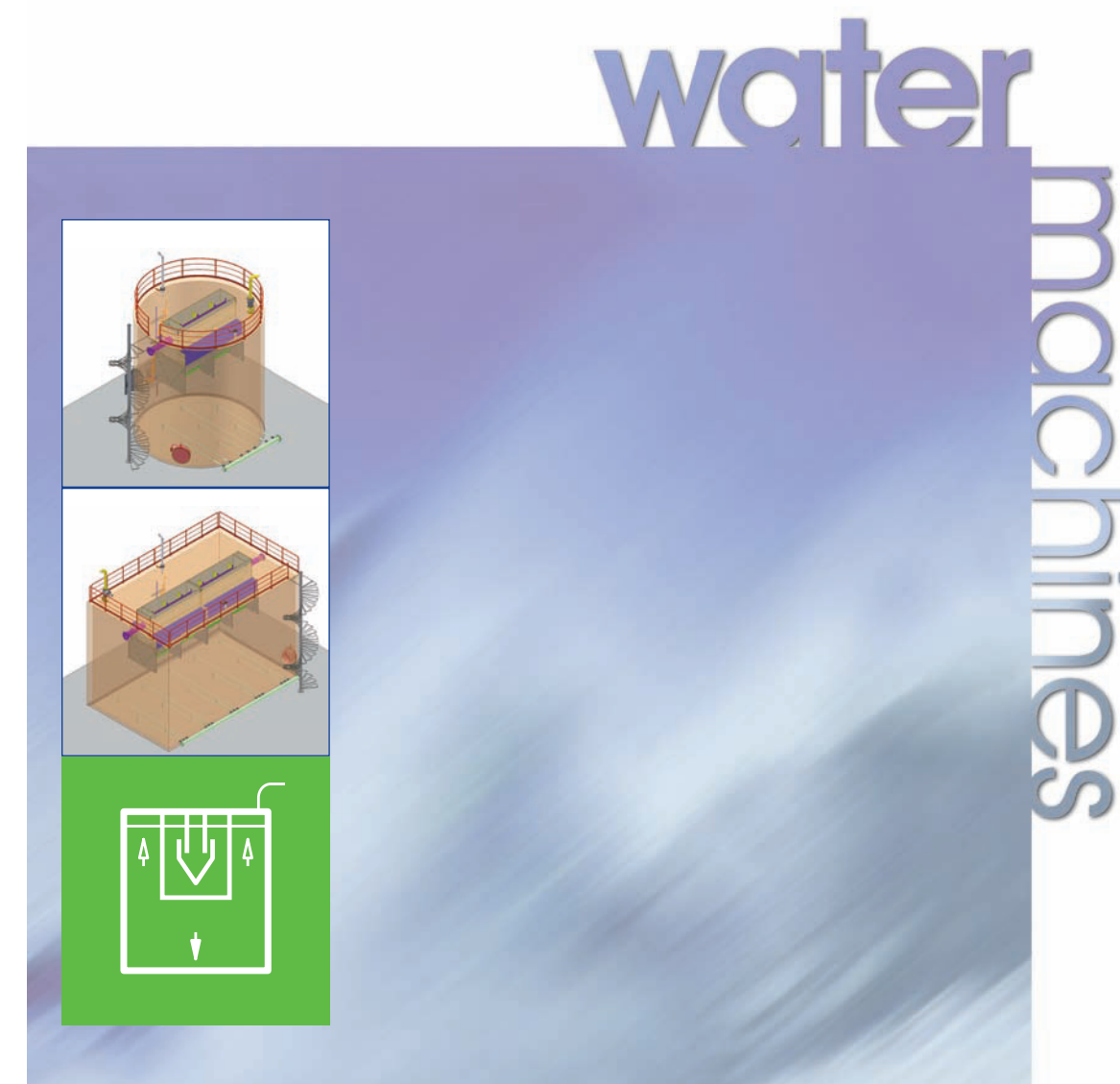
Aquabio Ltd

UK Representative for Voith Anaerobic Systems
in Food, Beverage, Brewery, Distillery, Chemical & Pharmaceutical

- Aquabio House, Ball Mill Top Business Park
- Worcester WR2 6LS
- Tel: 01905 641966
- E-mail : info@aquabio.co.uk
- Web: www.aquabio.co.uk

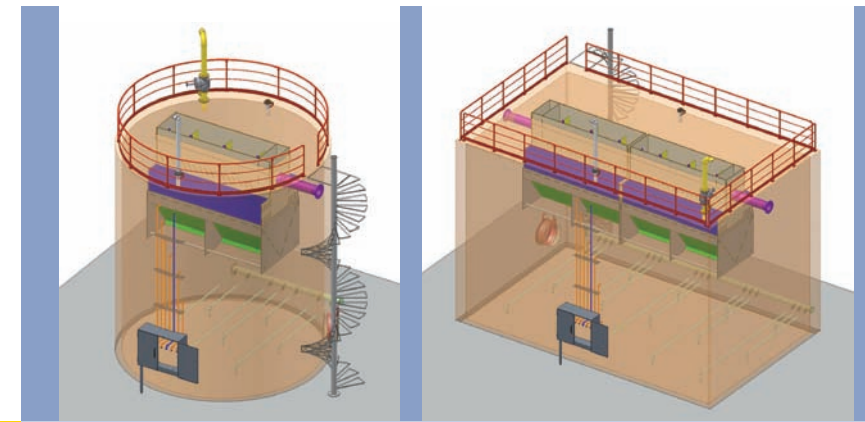
- UK Leader in energy efficient wastewater reuse

Voith Paper Environmental Solutions UASB Reactor



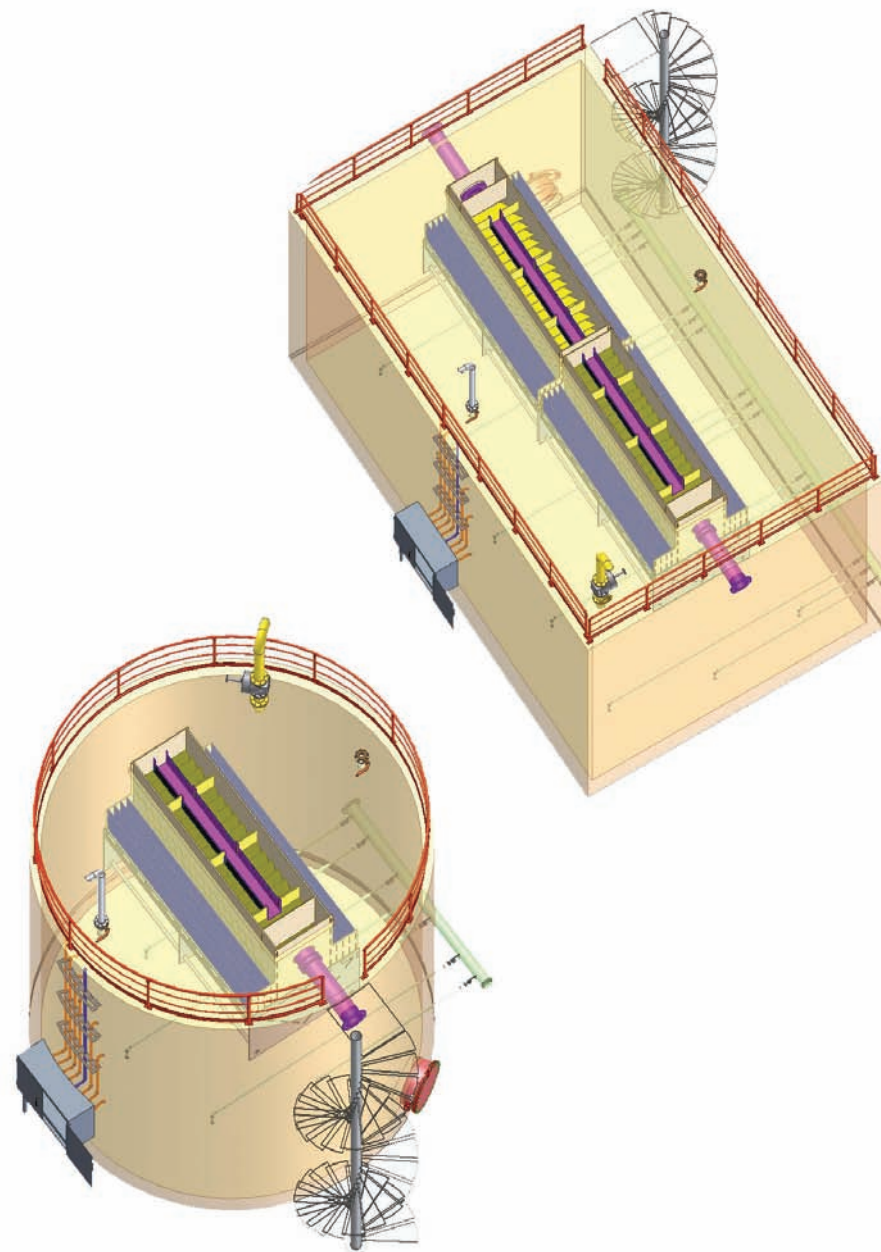
UASB Reactor

The UASB Reactor is a traditional Up-flow Sludge Blanket Reactor designed for the anaerobic treatment of both municipal and industrial wastewater. Due to the low up-flow velocity and its unique settler design the VPES-UASB settler module is very compact and can handle wastewaters in a broad concentration range. Adjustable hydrodynamics enables the system to retain biomass with different characteristics. The system contains a robust easily maintainable distribution system.



Operation Principle

- The wastewater is fed via a distribution system into the bottom of the reactor and is mixed intensively with the anaerobic biomass.
- The distribution system is simple and each nozzle can be controlled separately.
- The three-phase modular settler system consists of differentiated gas/water and sludge/water separation compartments, which allows a very effective separation of effluent, biomass and biogas. The system is very compact and the hydrodynamics in the settler can be adjusted to the type of sludge formed.
- The biogas is collected in the headspace of the reactor and from there transported to the gas train.
- The up flow velocity in the main body of the reactor is relatively low and can be controlled through external circulation over the settler system.



Design Concept

Compact settler

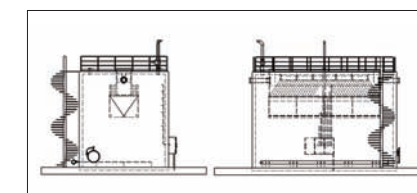
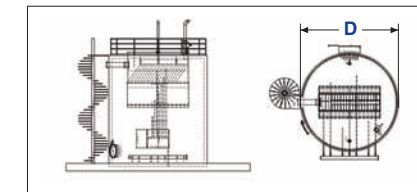
- Due to its compact design combined with the low operational up-flow velocity, only a fraction (< 20%) of the surface area of the reactor is required for settler mounting. With adjustable hydrodynamics in both settler and main body of the reactor a wide range of waste waters and sludge characteristics can be dealt with at loading rates of up to 15 kg COD/m³/day.
- COD range 1000-50.000 mg/l
- Up-flow velocities 0.5-2 m/h
- Modular settler allows tailor made tank sizing
- Water heights of up to 7m

Easy to Operate and Maintain

- Characteristics of the UASB Reactor – user friendly and easy to maintain:
 - Robust simple distribution system without risks of clogging, separate nozzles adjustable.
 - settler system with auto cleaning feature.

Technical Data

UASB Reactor Examples (water height 10m)	
Diameter D [m]	Active reactor volume [m ³]
4.5	110
9.5	500
16.5	1500
30	5000



On-Site

Installation

- The E2E Reactor tank is available in both steel and concrete.
- Insulation available upon request.

Operation

- The UASB Reactor is user-friendly and operationally safe.
- The UASB process is low in both chemical and energy demand.

