E2E Reactor

Main Features

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

Applications

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

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- UK Leader in energy efficient wastewater reuse

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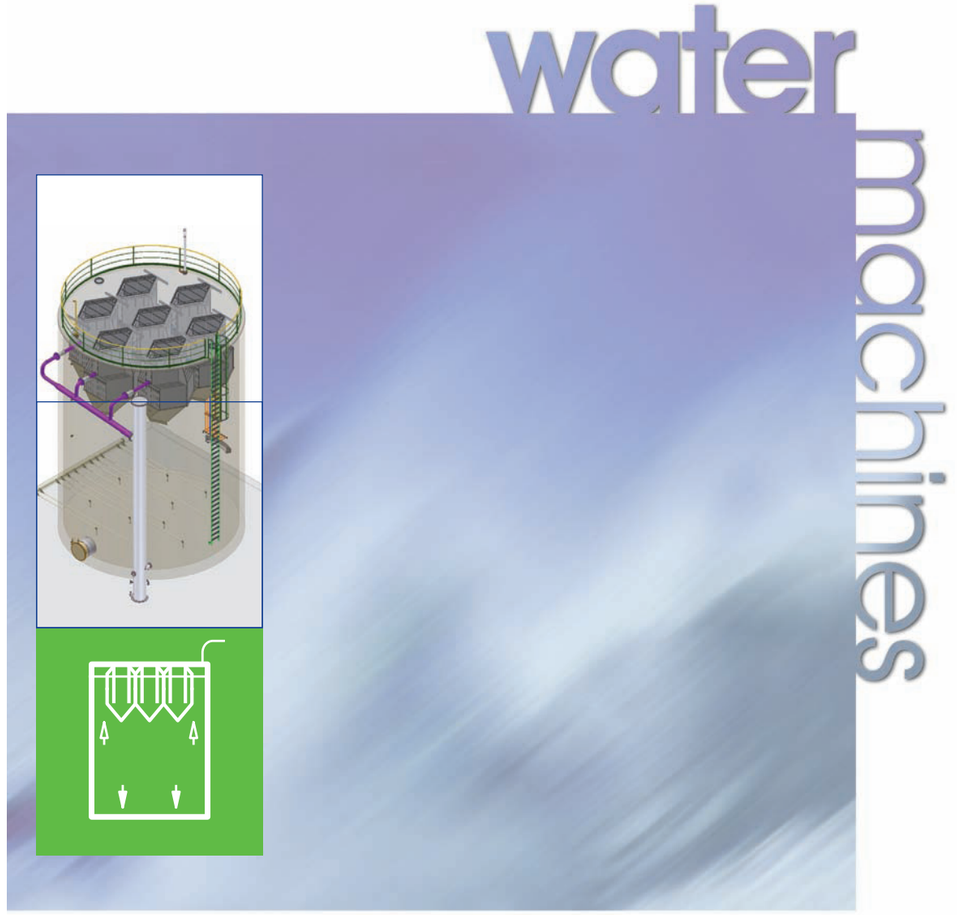
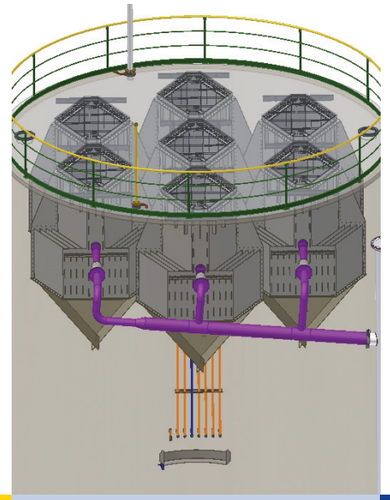
E2E Reactor



E2E Reactor

The E2E Reactor is a fluidized bed reactor designed for the anaerobic treatment of industrial wastewater. Due to its unique settler design, the E2E 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.

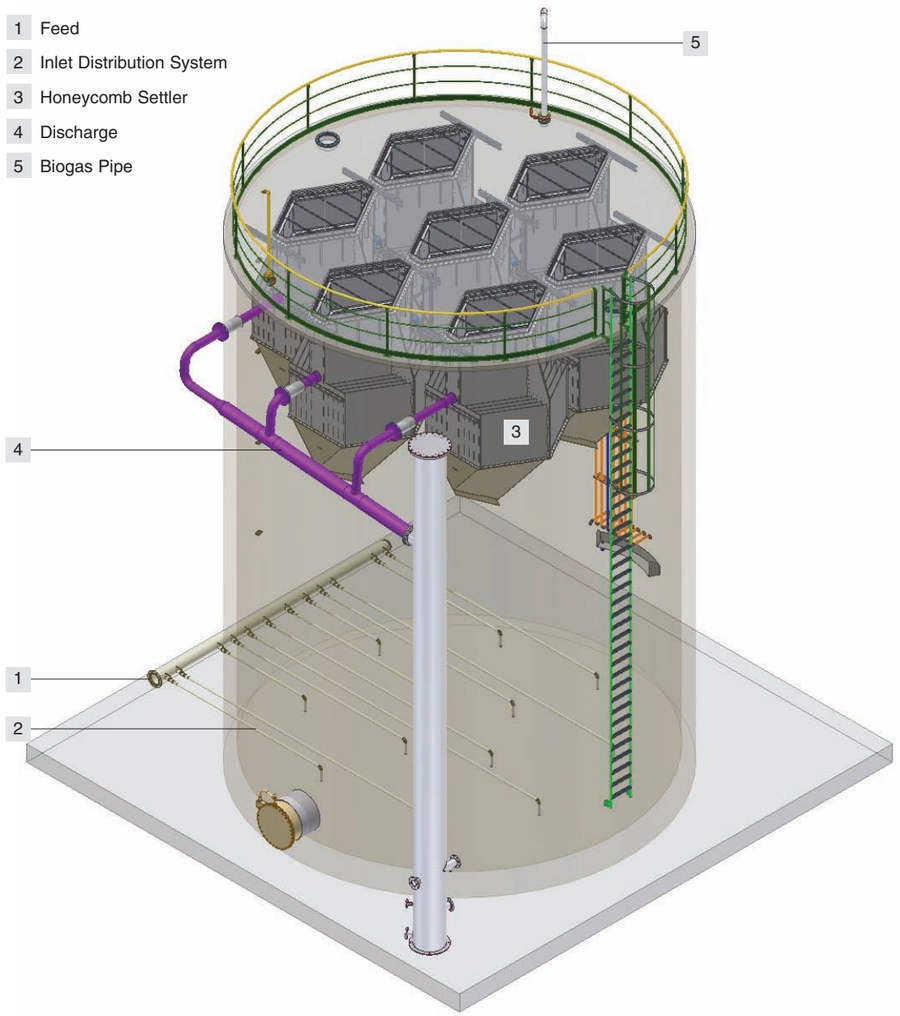


Operation Principle

- The waste water is fed via an inlet (1) into the bottom of the reactor (2) and 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 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 can be controlled through external circulation over the settler system.

Machine Elements

1 Feed
2 Inlet Distribution System
3 Honeycomb Settler
4 Discharge
5 Biogas Pipe



Design Concept

Flexibility

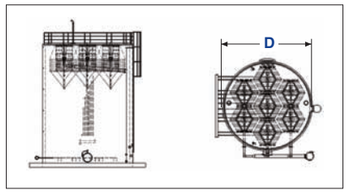
- With adjustable hydrodynamics in both settler and main body of the reactor, a wide range of waste waters and sludge characteristics can be dealt with at loading rates of up to 25 kg COD/m3/day.
  - COD range 2000-50.000 mg/l
  - up flow velocities 2-7 m/h
  - modular honeycomb settler allows tailor-made tank sizing

The E2E Honeycomb Concept

- The honeycomb modular concept allows for “height saving” EGSB designs as compared to conventional EGSB concepts (pict. 1).
- The modular honeycomb design ensures an ideal adaption to numerous tank geometries/-designs (pict. 2).
- Robust simple distribution system without risks of clogging, separate nozzles adjustable.
- Settler system with auto cleaning feature.

Technical Data

E2E Reactor Examples (Water height 10m)	
	Aktive reactor volume [m³]
Diameter D [m]	
3.5	115
7	375
9.5	700
13	1300



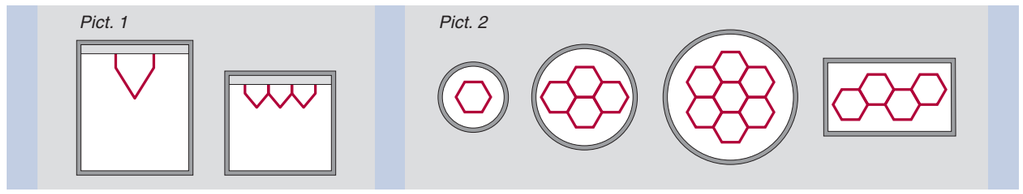
On-Site

Installation

- The E2E Reactor tank is available in both steel and concrete.
- Strong honeycomb settler module construction
- Insulation available upon request.

Operation

- The E2E Reactor is user-friendly and operationally safe.
- The E2E process is low in both chemical and energy demand.



The honeycomb modular concept: height-saving design and optimal flexibility