Huber Technology Middle East

HUBER Solutions for Membrane Bio-Reactors

More efficient membrane bioreactors for biological wastewater treatment

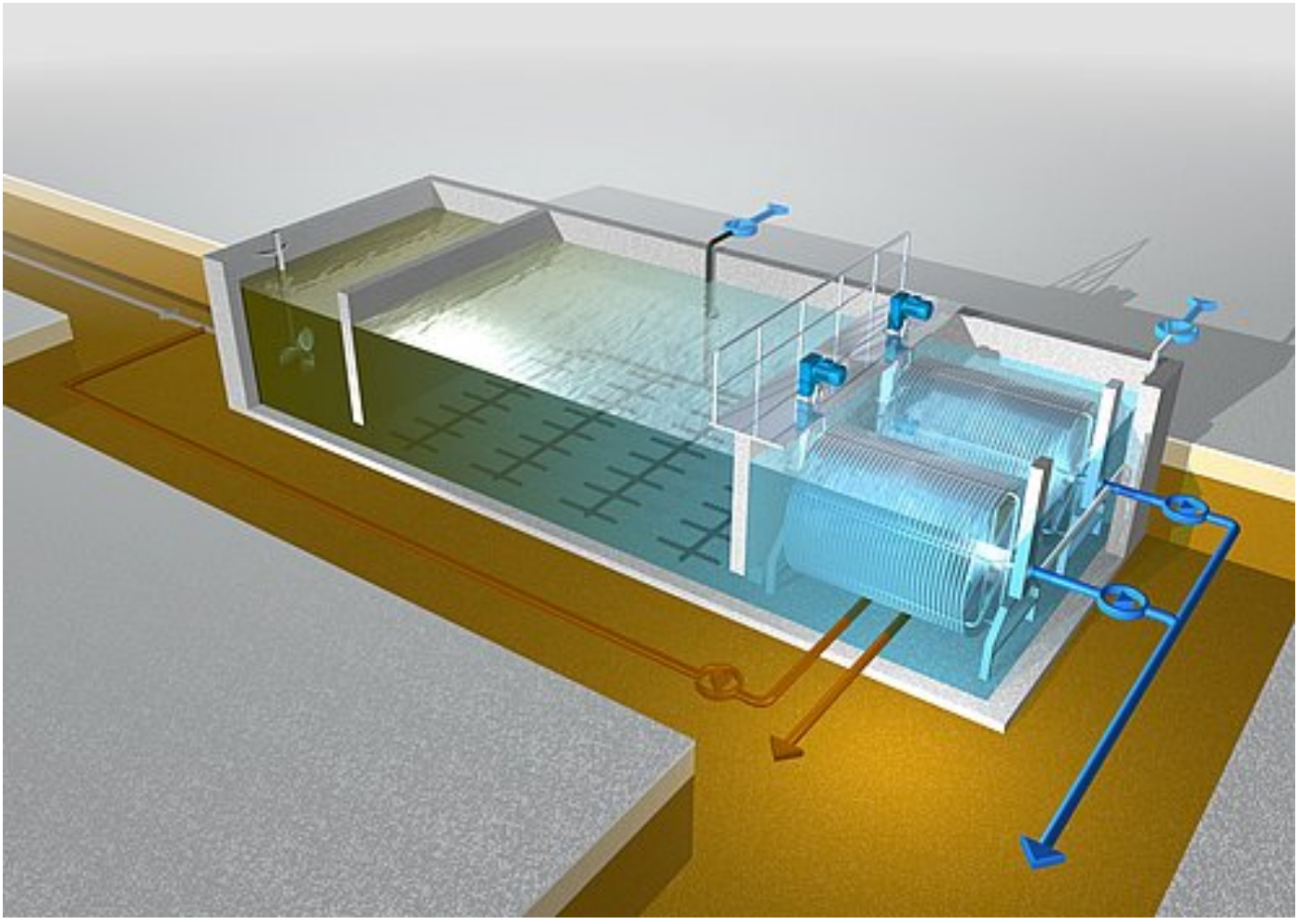
Activated sludge treatment in membrane bioreactors (MBRs) is an especially compact and efficient method of biological wastewater purification. Membrane bioreactors are applied where plants must be very compact due to lack of space and/or where a very high effluent quality is required as the treated water is discharged to highly sensitive watercourses or waterbodies, or is reused as service water, e. g. for irrigation.

With this treatment method the activated sludge is not separated in the secondary clarifier and returned but is retained in the aeration tank by membrane filters. Biomass concentration in the aeration tank is increased three to fourfold, tank sizes are therefore accordingly small.

The effluent from the membranes (the 'permeate') is solids-free. Our ultrafiltration membranes retain even all bacteria so that the effluent is free of germs (disinfected).

The quality of the permeate from our membrane filters meets the EC standards for bathing waters. Our membrane filters are California Title 22 certified.

System Concept



Click on the image to get a detailed, interactive view with additional information and links.

Process Description

HUBER VACUUM ROTATION MEMBRANE VRM® BIOREACTOR

Our VRM® Bioreactor (Vacuum Rotation Membrane) is a membrane filter for use in membrane bio-reactors. The membranes we use are flat membranes which are placed on both sides of a package of rotating carrier plates. Scouring air is blown in at their horizontal axis. Due to the air bubbles rising in the gaps between the plates biomass is sheared off the membranes so that the water flow through the membranes is not impaired. The rotation of the membranes through the stream of air bubbles leads to several advantages:

- A small, but intensive stream of air bubbles is sufficient for reliable cleaning of the membranes' surface
- Scouring air is blown in with low pressure at half the water depth
- Low power consumption for air scouring
- The rotating membranes are exposed to a swelling water pressure and are thus periodically relaxed
- Backwashing of the membranes with water is not necessary – continuous filtration without interruptions

HUBER BIOMEM® MEMBRANE FILTER

Our BioMem® Membrane Filter systems are used in small to medium-sized bioreactors. HUBER BioMem® Membrane Filter systems also use flat membranes but these are mounted on a package of stationary rectangular plates. The membrane filters are immersed into the bioreactor. Scouring air is blown in under the plates. HUBER BioMem® Membrane Filter systems offer the following benefits:

- They can easily be pulled out to carry out maintenance, e.g. external chemical purification.
- Regular replacement with regenerated units ensures always optimum performance.
- Scouring air is blown in under the plates sequentially and alternately.
- Power consumption for scouring is moderate.
- The flow rate can easily be increased by increasing the number of HUBER BioMem® Membrane Filter units.

Case Studies

- Reliable protection of membrane plants with HUBER Perforated Plate Screen ROTAMAT® STAR liquid
- Press release: New HUBER Membrane Filtration VRM®
- STP Larnaca at Cyprus will be equipped with HUBER Membrane Bioreactor Technology
- HUBER all-round package for STP Larnaca
- VRM® unit for Training Centre for Membrane Technology in Seelscheid
- ROTAMAT® Membrane Screen RoMem
- Successful start-up of the largest municipal MBR plant in Russia

Products

- HUBER Membrane Filtration VRM®

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