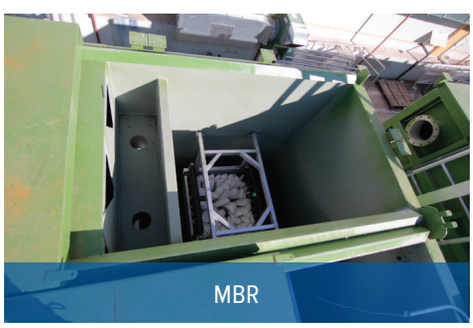
AQUALINE
www.aqualine-me.com

MBR SYSTEMS

The MBR process is a suspended growth activated sludge system that utilises microporous membranes for solid /liquid separation in lieu of secondary clarifiers.


MBR


MBR PUMPS


MBR CONTAINER

MEMBRANE BIOREACTORS

Membrane Bioreactors are biological treatment plants which combines activated sludge process with submersed membrane filtration. Secondary settling tanks are replaced with membrane units. Complete solids removal, a significant bacteria removal capability, high rate and high efficiency organic removal and small footprint are the advantages of the MBR Systems.

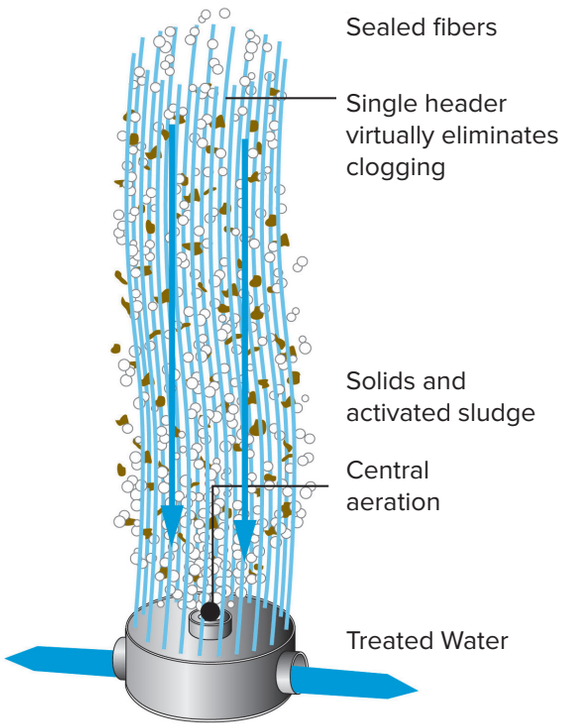
The MBR process can be configured in many different ways depending on project specific nutrient removal objectives. Anoxic zones before or after the aerobic treatment may be used for denitrification, depending on the effluent nitrate and total nitrogen requirements. AQUALINE prefer submerged configuration because of less energy requirement and low fouling potential. In submerged configuration, a suction force is applied to draw the water through the membrane, while the sludge is retained on the membrane surface.

Membrane modules consist of hollow fibre bundles which are made of Polyvinylidene flouoride (PVDF). Aeration nozzles are located in the centre of the fibre bundle to scour the entire fibre length, minimizing power consumption. Single header design reduces energy, minimizes downtime, and increases the flux, all within a small footprint.

MBR treatment plants can be applied to wide capacity range. AQUALINE provides pre – engineered systems up to 1000 m^3/day.

MEMBRANE MODULE	
MEMBRAN CHEMISTRY	Proprietary PVDF
MEMBRAN TYPE	Braided hollow fiber for outside in operation
FIBER SUPPORT CHEMISTRY	Polyester
NOMINAL PORE SIZE	0.03 µm
OUTSIDE FIBER DIAMETER	0.1 Inch (2.6 Mm)
MODULE FRAME MATERIAL	316 Stainless Steel
PERMEATE COLLECTION TUBE MATERIAL	ABS, PVC, PE Manifolds
STORAGE SOLUTION	Glycerin

MBR SYSTEMS



Threated water drawn through fibers under vacuum

AQUALINE offers tailor-made Membrane Bioreactors (MBR) to treat wastewater from different applications.

PLANT DATA FOR DIFFERENT THROUGHPUTS			
PRODUCT	CAPACITY m^3/day	POPULATION (persons)	DIMENSIONS (approx.) L x W (m)
MW - M25	25	120	7 X 2
MW - M75	75	300	13 X 3
MW - M150	150	1000	14 X 5
MW - M300	300	2000	16 X 6
MW - M450	450	3000	18 X 7
MW - M600	600	4000	25 X 7
MW - M1000	1000	6600	30 X 7

AQUALINE MBR SYSTEMS

Turnkey MBR system

- Standard pre-engineered design packages
- Efficient compact design, reduced footprint
- Robust, high-quality system and components
- Single-source supply
- Easily expandable
- Fast delivery and installation
- Meets or exceeds most regulatory effluent requirements

APPLICATIONS

- Municipal wastewater
- Educational institutions and healtcare applications
- Hotels, Labour and refugee camps, parks and military bases
- Building complexex (offices, shopping centers, small tornships)
- Industrial wastewater, e.g. food and beverage applications.

ADVANTAGES

- Secondary clarifiers and tertiary filtration processes are eliminated, thereby reducing plant footprint.
- Unlike secondary clarifiers, the quality of solids separation is not dependent on the mixed liquor suspended solids concentration or characteristics.
- No reliance upon achieving good sludge settleability,
- hence quite amenable to remote operation.
- Can be designed with long sludge age, hence low sludge production.
- Produces a UF quality effluent suitable for reuse applications or as a high quality feed water source for Reverse Osmosis treatment.

