

E-BOX

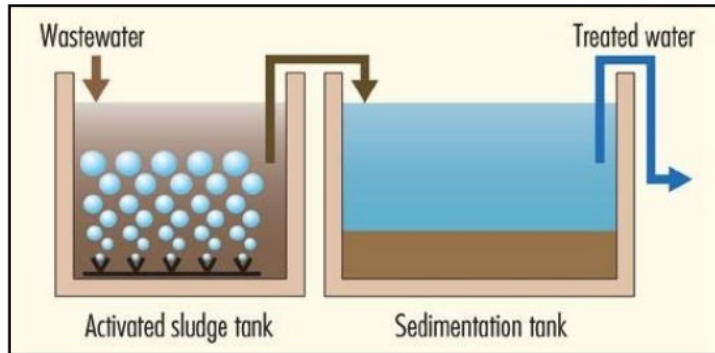
MBR membrane modules

Model: E-BOX MBR

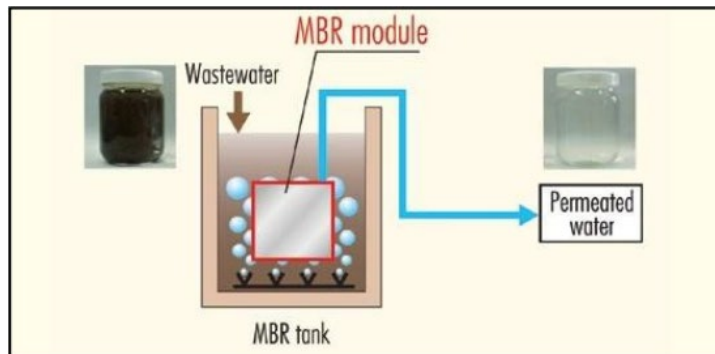
Membrane modules E-BOX MBR

The MBR membrane modules in the waste water biological systems, allow to obtain water without suspended solids and low concentration of BOD and nitrogen. The water produced from MBR systems can be used for industrial use or irrigation.

Conventional wastewater treatment system



MBR System



The exceptional quality of the water produced by **E-BOX MBR** modules is achieved through the use of a special PVDF (Polyvinylidene fluoride) membrane with pores of 0.08 μ m. The flat PVDF membrane ensures:



High permeability and quality of filtered water

The PVDF membranes with 0,08 micron pores can effectively eliminate all the particles bigger than 0,1 micron providing high quality water. Uniform pore size results in consistently high permeability with a minimal pore clogging.



High chemical resistance

The use of PVDF (polyvinylidene fluoride) for the functional layer of the membrane and PET (polyester) non-woven fabric as the base layer allows the membrane to exhibit superior physical strength and chemical stability.

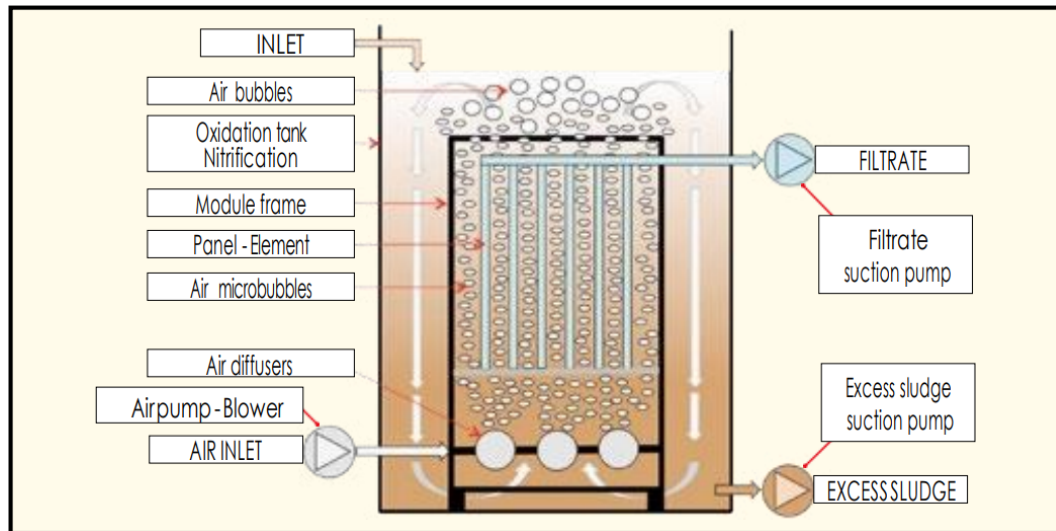


High fouling resistance

The flat sheet configuration and the structure with pores of regular size and even distribution of the membranes in PVDF supported by a base layer of PET allows the membranes to remain adequately clean thanks to the constant flow of water generated by the scouring air. This mechanism stops activated sludge from adhering to the membrane surface thus ensuring a constant flow of filtered water (permeate).

Membrane modules E-BOX MBR

The submerged MBR membrane modules model **E-BOX MBR** are the result of 10 years of experience in the municipal and industrial waste water treatment market. The MBR module **E-BOX MBR** made is composed of a stainless steel frame that contains the special EBOX-35 cassettes and supports the air diffuser and the (filtrate) permeate manifold. Every cassette contains 50 membrane element of 0,7 m². Each membrane element conveys the water to the permeate collector of the module which is connected, through dedicated pipes, to the suction pump through polyurethane pipes. The air diffusers, located in bottom part of the stainless steel frame, introduce the right amount of air to create the flux of water through the membrane elements and to maintain the membrane surfaces clean.



The **E-BOX MBR** modules provides three main advantages:



Modular design

As the **E-BOX MBR** modules are modular, they can comply with all the capacity requirements. This feature allows you to combine the modules together in order to create bigger types of modules and to place the modules in the MBR tank in a very compact way.



Better energy efficient

The **E-BOX MBR** modules consume less energy compared to hollow fibre membrane modules due to more effective scouring aeration and a lower trans-membrane pressure.



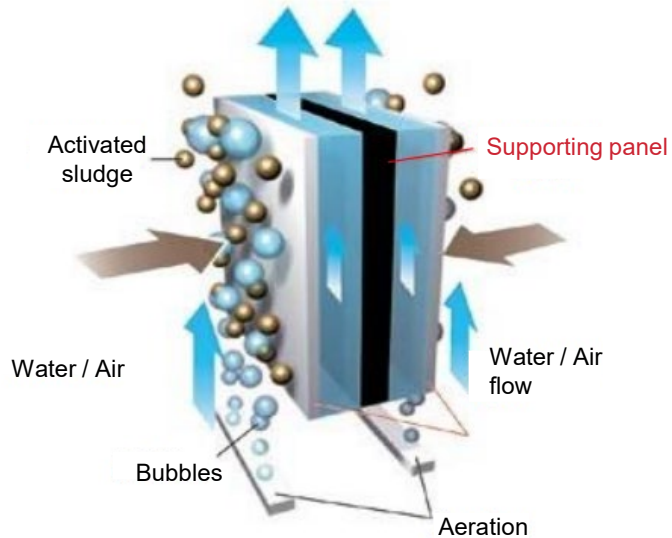
Better performance and less operating costs of MBR plant

The PVDF and PET flat sheet membrane ensures a greater mechanical resistance compared to the hollow fibre membranes resulting in a longer duration and in a considerable reduction of maintenance costs. Furthermore the high mechanical resistance of the flat sheet membranes together with the more effective scouring aeration system ensure a better resistance against fouling thus allowing the realization of a more coarse screening and less expensive pre-treatment process.

This improved fouling resistance involves fewer chemical cleaning requirements for increased results of plant performance and operating plant cost reduction.

Membrane modules E-BOX MBR: operating

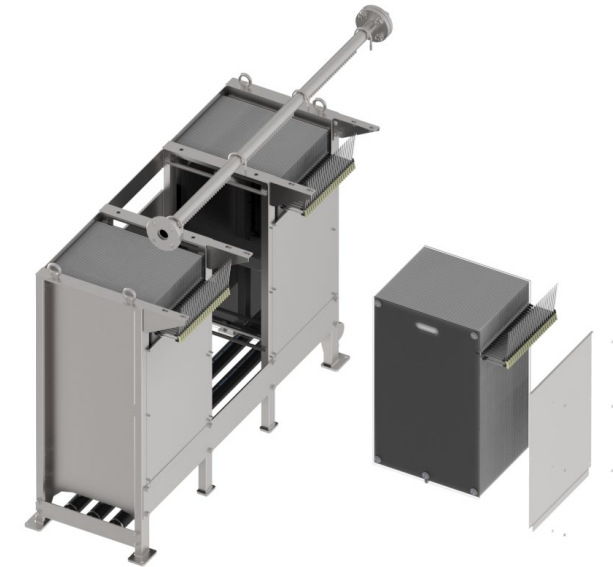
The modules contain robust flat membranes that retain sludge, separating solids and bacteria from the effluent. The module's aeration system generates an upward airflow to prevent membrane fouling, enabling extremely high efficiency of up to 99% in suspended solids removal, providing highly purified water suitable for reuse.



MBR technology offers several key advantages over conventional wastewater treatment plants, additionally eliminating the need for secondary clarifiers and tertiary treatments, resulting in significantly reduced footprint for the plant.

MBR technology yields superior quality of treated water compared to conventional activated sludge treatment systems, providing the client with the opportunity for water reuse, which is not possible with conventional systems.

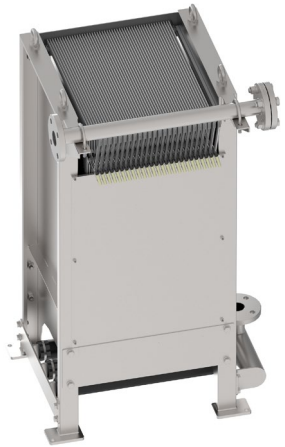
MBR systems are available in a wide range of configurations designed to meet specific needs, such as containerized solutions for remote sites or upgrading systems to enhance the performance of existing treatment plants.



easy maintenance
quick cassette extraction

Why choose E-BOX MBR: modularity

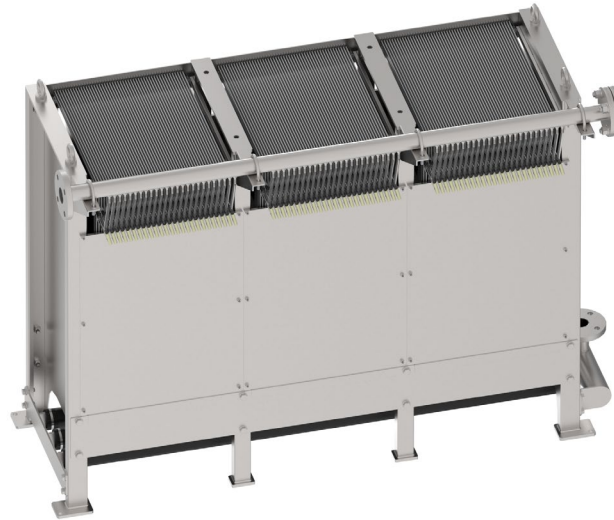
The modular **E-BOX MBR** membrane modules allow for meeting flow rate requirements at reduced costs.



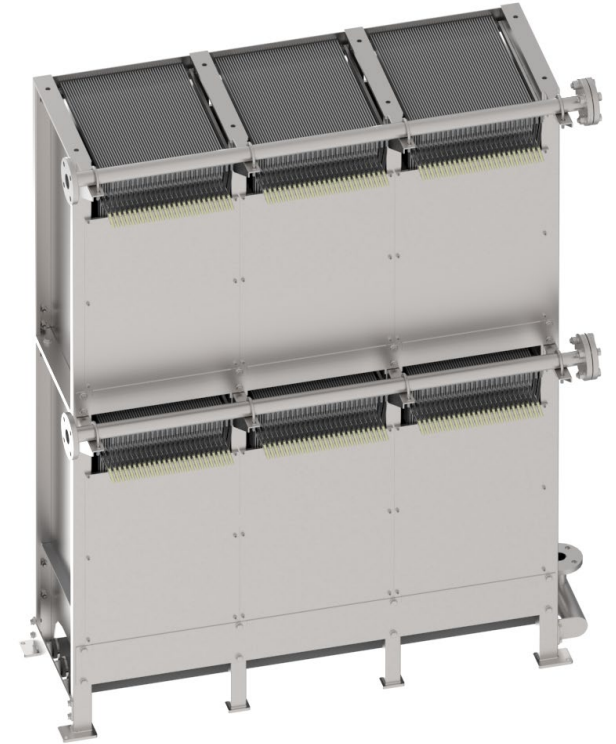
E-BOX MBR
01-35
Flow rate up to 17 m³/d



E-BOX MBR
01-70
Flow rate up to 34 m³/d



E-BOX MBR
03-105
Flow rate up to 51 m³/d



E-BOX MBR
06-210
Flow rate up to 102 m³/h

Products list E-BOX MBR

Module type		E-BOX MBR 01-35	E-BOX MBR 02-70	E-BOX MBR 03-105	E-BOX MBR 06-210
Number of cassettes		1	2	3	6
Cassette membrane area		35 m ²	35 m ²	35 m ²	35 m ²
Total membrane area		35 m ²	70 m ²	105 m ²	210 m ²
Standard flow rate		17 m ³ /day	34 m ³ /day	51 m ³ /day	102 m ³ /day
Dimensions	Width	545 mm	545 mm	545 mm	545 mm
	Length	565 mm	1140 mm	1635 mm	1635 mm
	Height	1305,5 mm	1305,5 mm	1305,5 mm	2268 mm
Weight (dry)		135 kg	215 kg	295 kg	565 kg
Materials	Membrane material	PVDF – PET	PVDF – PET	PVDF – PET	PVDF – PET
	Frame	AISI 304	AISI 304	AISI 304	AISI 304
	Permeate manifold	AISI 304	AISI 304	AISI 304	AISI 304
	Aeration diffuser	PVC – EPDM	PVC – EPDM	PVC – EPDM	PVC – EPDM

* These values occur in particular municipal waste water, they are not guaranteed values.

* Specifications are subject to change without notice due to technical changes or production changes.

More info



Data Sheet
E-BOX MBR



Video
E-BOX MBR



Case History
E-BOX MBR

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