VEOLIA

MBBR Pack

The modular plug & play wastewater treatment solution

WATER TECHNOLOGIES

MBBR Pack

A complete modular,

The stakes

Local authorities and industries have to deal quickly with rapid increases - or wide swings – in the volumes of wastewater to be treated and the carbon- and nitrogen-based pollutants to be eliminated. Whether they decide to install new sewage treatment plants or to upgrade existing units to meet the standards, a growing number of them are looking for comprehensive, flexible biological treatment options.

They want effective solutions that can be quickly delivered and whose “Plug and Play” installation and commissioning enable them to reduce their infrastructure and civil engineering costs while ensuring continuity of sanitation services for their communities or for industrial production.

In a context of economic pressure, these customers not only expect reliable, proven standardized solutions with a positive impact on production, installation and commissioning costs, but also a high level of service combining training, maintenance, technical support and operations.

To meet all these customers needs, Veolia Water Technologies has developed MBBR Pack, the ideal modular package solution for treating wastewater.

Flexible solution for:

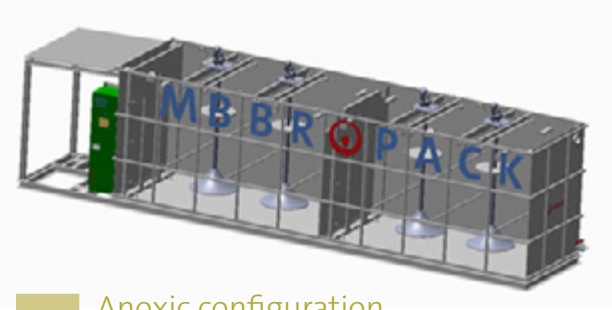
> Industry (Food & Beverage, Oil & Gas, Mining, Pulp & Paper, Pharmaceutical)
> Compact industrial facilities
> Pilot unit
> Municipal housing development
> Resorts and hotels
> Temporary worker camps
> Remote locations
> Construction sites
> Rehabilitation areas
> Business parks
> Offshore installations

standardized wastewater solution

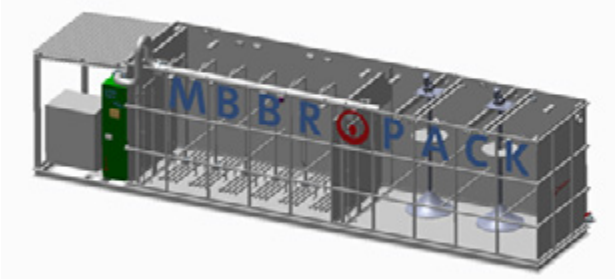
Three Packs to suit your needs

The MBBR Pack is available in several configurations, depending on the customer's treatment goals for carbon and/or nitrogen. AnoxKaldnes carriers are a vital component in MBBR Pack.

Aerobic configuration
AEAE



Anoxic configuration
ANAN



Anoxic - Aerobic configuration
ANAE

High Performances Solution

Municipal wastewater

	Flow rate m^3/d	Load PE	BOD kg/d	TN kg/d	Effluent SBOD mg/l	Effluent NH_4 mg/l	Effluent TN mg/l	Temperature °C
AEAE	1,200	3,300	200		< 15			15
AEAE	150	800	50	8	< 5	< 1		15
ANAE + AEAE	300	1,600	100	16	< 5	< 1	< 15	15

Industrial wastewater

Unit/Units	Flow rate m^3/d	COD kg/d	TN kg/d	Efficiency COD %**	Efficiency NH_4 %	Effluent TN %	Temperature °C
AEAE	1,200	400 (300*)		90-95			25
AEAE	150	50	15	95	90-95		25
ANAE + AEAE	100	100	30	95	90-95	80	25

** With fine bubble system.*
*** Soluble biodegradable COD.*

Multiple bundling possibilities

To deal with the problems and quality objectives that each municipal and industrial customer has and to provide them with comprehensive solutions, the MBBR Pack can be combined with many Veolia Water Technologies processes in pre-treatment or in post-treatment.

RELATED SERVICES

- **Hydrex™ 6000** water treatment chemicals from Veolia Water Technologies should be used for optimized plant operation.
- **Local after-sales service and support teams** offer preventative and corrective maintenance programs to ensure the long-term, efficient operation of installed plant.

Pre-treatment	Biological treatment	Post-treatment
IDRASCREEN™ Screen Filter		IDRAFLOT™ DAF
IDRAFLOT™ DAF		ACTIFLO® Clarification
SPIDFLOW® Rapid DAF		HYDROTECH™ DISCFILTER Disc Filtration
		SPIDFLOW® Rapid DAF

MBBR Pack
AnoxKaldnes™ Technology

Technical data

Item	Info
Tank material	Epoxy coated carbon steel or stainless steel AISI304
Piping material	Stainless steel AISI304
Net volume	46 m^3
Media	K5 (45% of the net volume)
Dimensions for transport	11.7 m (L) x 2.4 m (W) x 3 m (H)
Empty weight	9,000 kg
Dimensions in operation	11.85 m(L) x 2.6 m (W) x 3.6 m (H)
Weight in operation	60,000 kg
Water depth	2.3 m
Automation 24/7/365	PLC Siemens/HMI proface
Noise	< 70 [dB (A)]
Marking and standards	CE

Scope of supply

Included in the scope
Tank
Blower
Sieves
Piping
Manual valves
Diffusers
Media
Automation panel
Sensor levels
Oxygen and temperature sensor

standardized wastewater solution

MBBR Pack Solution, all of AnoxKaldnes' experience in a Plug & Play solution

By integrating the Moving Bed Biofilm Reactor, biological treatment technology developed and mastered by Veolia subsidiary AnoxKaldnes over 25 years ago, the MBBR Pack meets the market needs with a packaged solution based on their recognized, proven expertise.

The MBBR Pack provides all the advantages of a conventional MBBR system, in a standard prefabricated package with a Plug & Play function that is easy to install. It is an ideal response for customers who want to be equipped as quickly as possible. By combining the modules with each other, you get a packaged solution that can cover most flows and pollution loads.

High treatment capacity in a very small footprint

MBBR Pack - AnoxKaldnes™ technology is based on the biofilm principle, which uses microorganisms for biological treatment of wastewater.

The microorganisms grow on the surfaces of plastic carriers in the treatment reactor. As the carriers move through wastewater in the reactor, microorganisms utilize contaminants present in the effluent for their biological activity. The proprietary design of the carriers ensures that a high protected surface area is provided for the development of biofilm, enabling high treatment capacity in a very small footprint.

The flexibility of AnoxKaldnes patented technology allows the design of very compact and efficient MBBR solutions for new installations as well as optimal upgrades of existing biological processes.

KEY BENEFITS

Customized biological solution in a standardized package

> **Quick delivery** and easy installation

> **Limited engineering costs**

> Small footprint

> **Limited on-site infrastructure needed**

> Easy transportation

> Robust biological system resistant to:
- Toxic shocks
- Fluctuating flows
- Varying loads

> Automatic operation – userfriendly Human Machine Interface

> **Built-in easy of expansion:**
- Modular units
- Easy carrier addition

> AnoxKaldnes laboratory expertise support

> 25 years of experience and more than 1,000 MBBR references worldwide

Resourcing the world

Veolia Water Technologies

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