imemflo

Flat Sheet MBR Module

Company profile

Imemflo MBR module from the Makers of ATB WATER GmbH [Germany] winner of GreenTech Award have integrated skills and expertise in water and wastewater treatment technologies. Imemflo's high quality MBR modules and complementary water / Waste Water treatment products to help our customers improve their competitiveness and plant performance. The professional membrane products manufactured for microfiltration, ultrafiltration, nano filtration and reverse osmosis, provide value to the customers. The main objective on which imemflo strive is to build leadership in the membrane market.

Imemflo have one of the main products include flat sheet membrane and hollow fibre membrane commonly known as MBR module /Submerged ultrafiltration which shall be used for domestic and industrial wastewater treatment from the German waste water treatment company ATB WATER GmbH, unit .

Imemflo's always focus on membrane research and development to meet customers strict filtration needs and is available in flat sheet [F- MBR] or hollow fibre module type[HF- MBR].

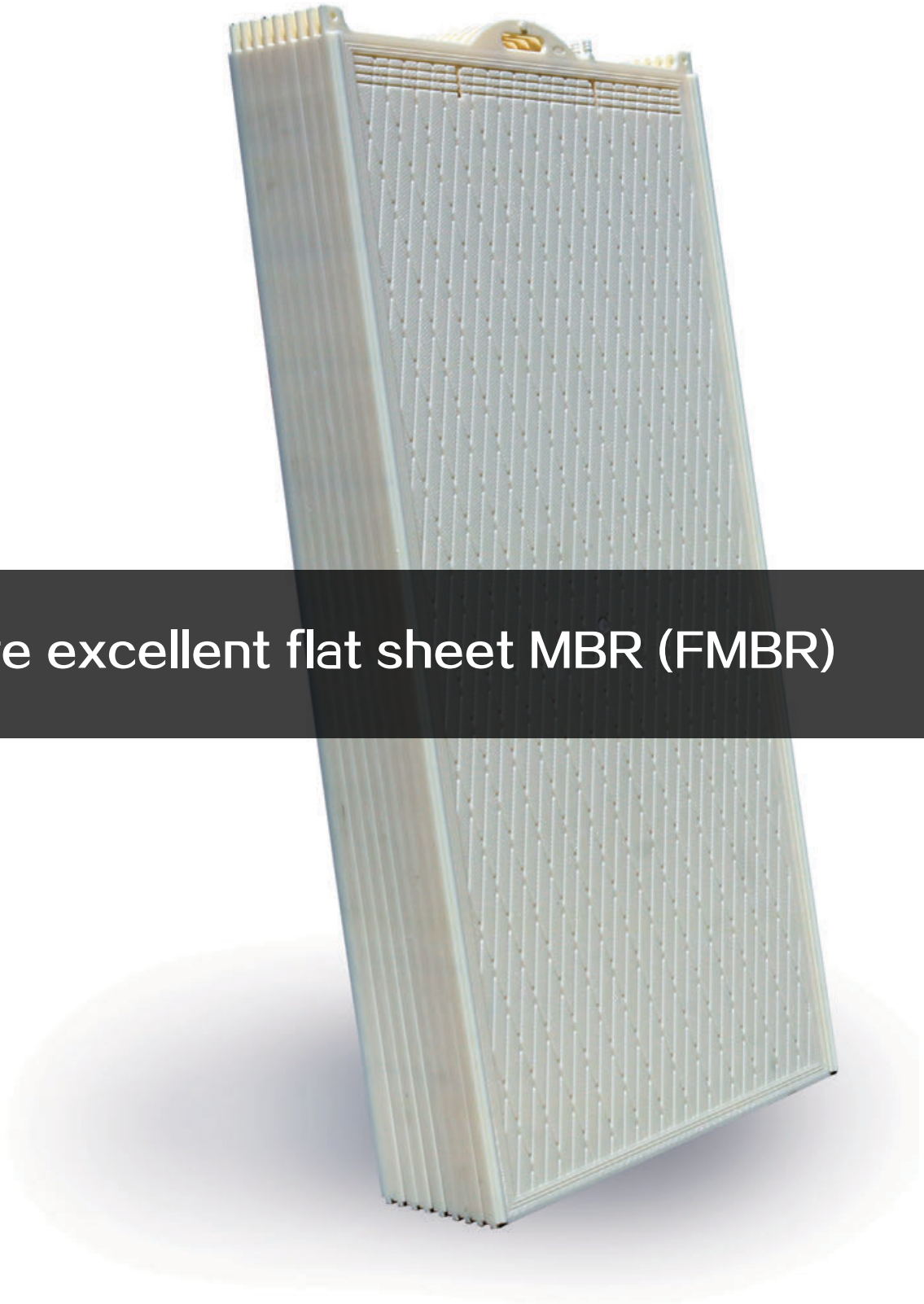
We have cooperated with many steady customers worldwide. To meet customers 'requirements, we are not only supply membrane products, but also membrane process design, system consultant service. Our key employee have more than a decade experience in membrane production and applications.

Imemflo devote to supply membrane products for liquid separation, concentration and clarification with guarantee consistent membrane quality, deliver more efficient membrane process, and greater success for you in your markets.

We respect quality and driven by quality standards, each MBR module is engraved with unique identification code to facilitate tracking of the product quality with 100% integrity test on every product with stringent standards which has established our products as reputed high quality in the water field.

The product is applied successfully in the field of emulsified WWTP, Landfill leachate treatment, Domestic Sewage Treatment, Laundry Wastewater Treatment, industrial wastewater treatment

More excellent flat sheet MBR (FMBR)

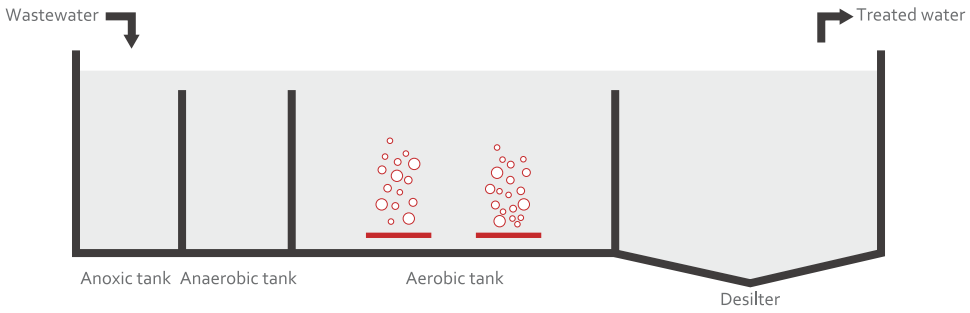


Flat sheet MBR (FMBR)

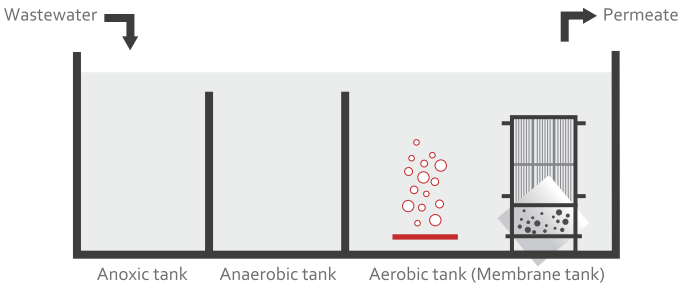
MBR Introduction

Membrane bioreactor (MBR) is the combination of a membrane process like microfiltration or ultrafiltration with the biological wastewater treatment process and the activated sludge process. It is now widely used for municipal and industrial wastewater treatment. This bioreactor possesses the advantages of membrane filtration and biological treatment technology. Membrane modules, which can replace the secondary sedimentation tank, are used to separate mud and water. The MBR process has obvious advantages compared to the traditional wastewater treatment technology.

Traditional wastewater treatment process



MBR Process



MBR Advantages

Effluent high quality (low turbidity, low TSS) for regulatory or reuse purposes.
Not reliant on input water MLSS.
Longer activated sludge age and lower sludge disposal costs.
Smaller footprint.
Easy operation.

Flat sheet MBR (FMBR)

The difference between the MBR and Continuous Aeration System (CAS)

The water quality comparison of MBR and CAS

Description	Input water	Output water		
	Typical municipal wastewater	MBR		CAS
TURBIDITY (NTU)	-	Membrane filtration process	< 1	5-20
SDI	-		< 3	> 5
TSS(mg/L)	100-300		< 1	10-30
BOD_5(mg/L)	300	Biological process	< 5	< 30
COD(mg/L)	600		< 30	< 100
NH_3-N(mg/L)	30		< 0.5	5-10
TN(mg/L)	40		< 15	> 25
TP(mg/L)	10-20		< 0.5	5-8

Note: The removal rate of BOD and COD is related with the biological treatment process.
The removal rate of NH3-N is different based on the degree of nitrification.
The removal rate of TN is different based on the degree of denitrification.
The removal of the phosphorus might need the chemical method.

The other comparisons of MBR and CAS

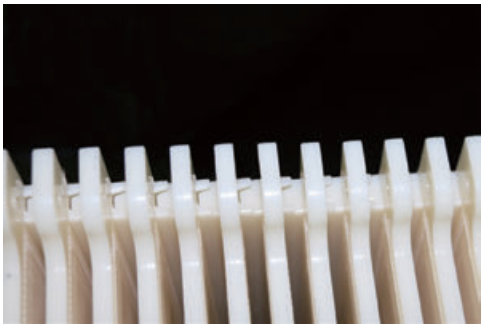
Description	MBR	CAS
Water quality	Directly reusable, higher than national standard	Meet national standard
Footprint	About 1/3-1/2 $m^2/(m^3.d\text{-}1)$	About $1m^2/(m^3.d\text{-}1)$
Construction investment	INR 20000-26000/$(m^3.d-1)$	INR 15000 - 20000/$(m^3.d\text{-}1)$
Operation cost	INR 7.10-10 /m^3	<7.10 INR /m^3 (Direct water discharge) < 10 INR /m^3 (Reclaimed water discharge)
Excess sludge	1/3-1/5 of CAS	Volume big, high processing cost
Operations management	Few devices, simple flow process, easy to automatically control, stable operation and remote control feasible	Many devices, complicate flow process, easy to break down and high operation cost
Water application	Reclaimed water and water for industrial use	Emission on standard

Flat sheet MBR (FMBR)

Flat sheet MBR benefits

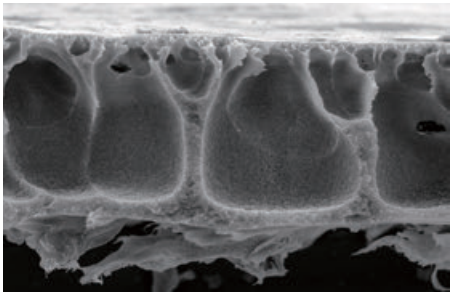
Flat sheet membrane is made of PVDF, which has better chemical stability, fouling resistance and mechanical strength. With advanced membrane fabrication technology, we control the membrane pore size around 0.01Mu to get a higher water flux and water quality. The mortise and tenon structure is used in the support plate to get a more stable spacing without side panels. The support plate can be installed from top and installed from one side without the limits of the construction site conditions.

The mortise and tenon structure support plate



Laser engraving diamond flow path, coupled with special umbrella support structure, make the suction pressure distribution much better without diverting nonwoven fabrics. This structure reduces the risk of fouling and improves the water flow rate.

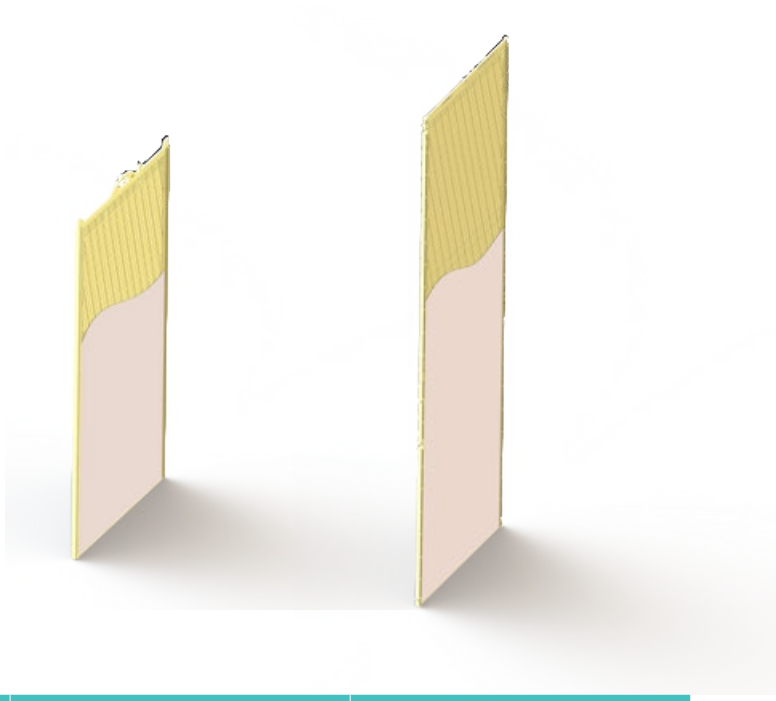
PVDF membrane electron micrograph



support plate flow channel for FMBR160

Flat sheet MBR (FMBR)

Flat sheet MBR element

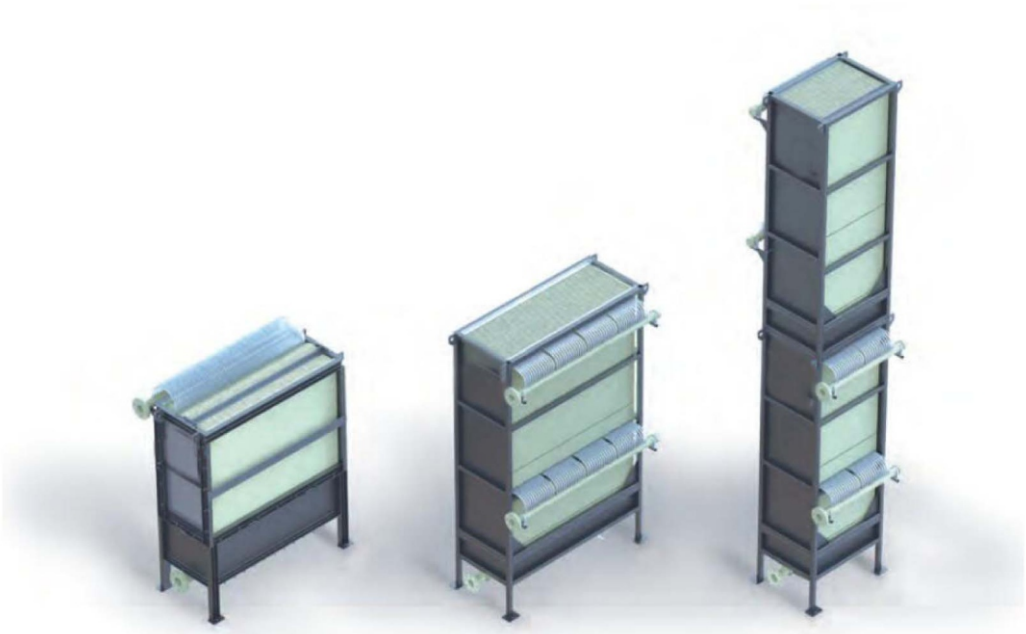


Items	Standard type	Long type
Model	FMBR80	FMBR160
Size (L×W×T) (mm)	1020×510×14	1810x 512x14
Membrane effective area (m²)	0.8	1.6
Weight (kg)	3	5
Permeate flux [l /(pc·d)]	320-550	640-1100
Membrane material	PVDF	PVDF
Membrane pore size(μm)	0.01	0.01
Plate material	ABS	ABS
Air flow rate [l /(min·pc)]	≥10	≥12
pH	3 ~ 12	3 ~ 12
Output turbidity (NTU)	< 1.0	< 1.0
Output SS (mg/l)	≤5	≤5
Chemical cleaning	~ 5,000mg/l NaClO	~ 5,000mg/l NaClO

Note: For different water quality, there will be a different water flow rate. So the user should fully test the membrane module. This parameter is tested at 25℃,-10KPa suction vacuum conditions based on municipal wastewater.

Flat sheet MBR (FMBR)

Flat sheet MBR module



Items	FMBR80			
Model	FMBR80-50	FMBR80-125	FMBR80-250-2	FMBR80-250-4
Permeate flux(m^3/d)	16-26	38-65	150-260	300-520
Plate qty. (pc)	50	125	500	1000
Membrane effective area (m^2)	40	100	400	800
Size (mm)(L×W×H)	820×600×1680	1885×600×1680	3720×600×2750	3720×600×4900
Air flow rate (L/min)	500	1250	3500	3500
Weight (kg)	120	230	900	1700

Items	FMBR160			
Model	FMBR160-50	FMBR160-125	FMBR160-125-2	FMBR160-150-2
Permeate flux(m^3/d)	32-50	75-130	150-260	180-310
Plate qty. (pc)	50	125	250	300
Membrane effective area (m^2)	80	200	400	480
Size (mm)(L×W×H)	830×620×2550	1880×620×2550	1880×620×4500	2230×620×4500
Air flow rate (L/min)	600	1500	1750	2100
Weight (kg)	400	900	1700	2000

Note: We can provide a single membrane element and any size frame to meet customer's different requests. Such as: FMBR80-175, FMBR80-200, FMBR80-200-2 (double deck), FMBR80-200-4 (four deck), FMBR160-200, FMBR160-200-2 (double deck) etc.

On site application pictures

FMBR for municipal sewage

FMBR for industrial wastewater

ATB

Waste Water Treatment

A complete Waste Water Solutions includes STP, ETP, ZLD, GWT

iPool™

iPool by Shubham Inc.

Swimming pool Design, Construction, Operation & Maintenance, chemicals

iCOMPOST by Shubham Inc.

icompost

Organic Waste Management Solutions

iMemflo GMBH

Südstraße 2, D-32457
Porta Westfalica

+49 5731 30230-0
+49 5731 30230-30
info@imemflo.com
https://www.atbwater.com/imemflo

→ Scan QR-code here and visit our Website

Shubham™
Water & Wastewater Solution Provider

Indian Partner:

Shubham Inc

A-305, Shivalik Yash, 132 Ft. Ring Road,
Shashtri Nagar BRTS, Naranpura,
Ahmedabad, Gujarat, India - 380013
E-Mail: info@shubhamindia.com
Phone: +91 - 79 – 40086151 & 8080809593
Website: www.shubhamindia.com