

# SWB1V Series MBR Modules

SWB1V MBR modules are made with reinforced hollow fiber PVDF membrane. The hollow fibers have high tensile strength with excellent chemical resistance. 0.1  $\mu\text{m}$  pore size provides superior rejection rate of suspended solids, bacteria and viruses.

Compared with conventional treatment, SWB1V MBR modules produce extremely high quality permeate. Due to the high mixed liquor suspended solids (MLSS), SWB1V MBR modules can greatly reduce the overall treatment plant footprint and annual operation cost.

\*Equivalent modules can be customized on customers' request.

## Features

- High hydrophilic PVDF membrane
- Reinforced hollow fiber membrane
- Reduced treatment plant footprint
- Long service life
- Consistent and stable flux performance
- Energy saving due to low operating pressure



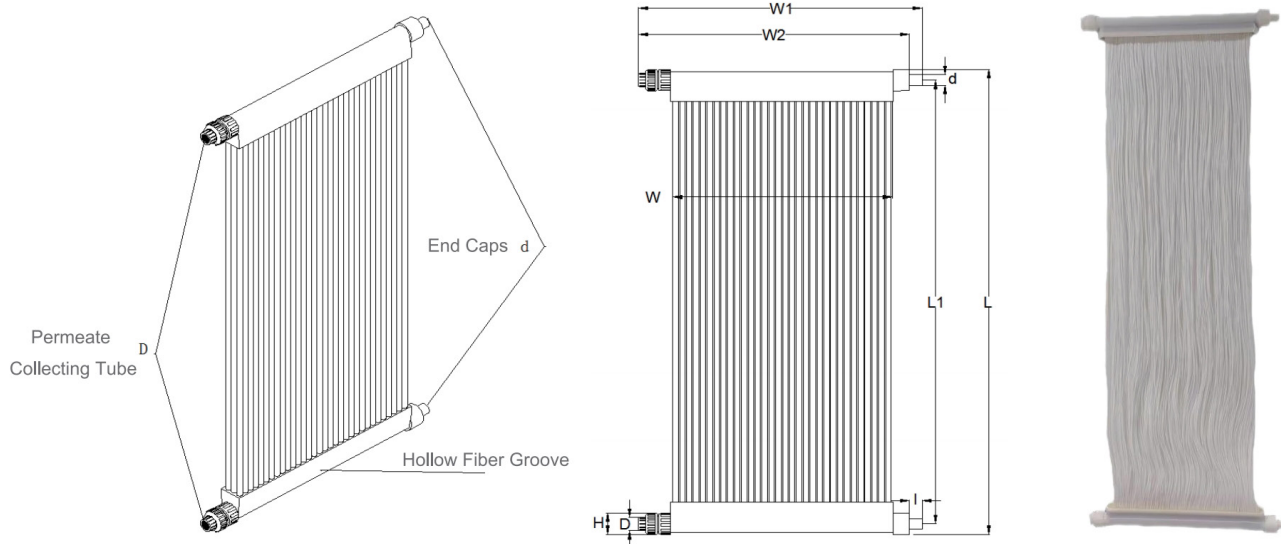
## Applications

- Municipal sewage treatment and reuse
- Ideal for Green Building needing water reuse
- Industrial wastewater treatment and reuse
- Landfill wastewater treatment
- Pre-treatment for RO system



## SWB1V Modules Specifications

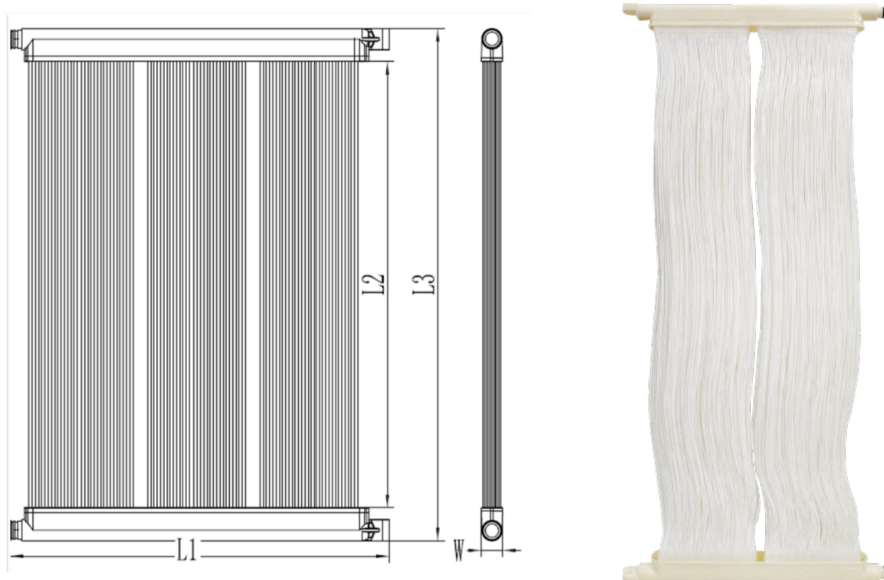
### Threaded Connection Series



Module Model	SWB1V4024-10	SWB1V6024-15	SWB1V7924-20
Effective Membrane Area (m <sup>2</sup> /ft <sup>2</sup> )	10 / 107.64	15 / 161.46	20 / 215.28
Membrane Material	PVDF (with PET Supporting Layer)		
Pore Size (μm)	0.1		
Fiber ID / OD (mm/inch)	1.1/2.2		
L1 (mm/inch)	1,000 / 39.37	1,500 / 59.05	2,000 / 78.74
L (mm/inch)	1,025 / 40.35	1,525 / 60.04	2,025 / 79.72
W (mm/inch)	480 / 18.9	480 / 18.9	480 / 18.9
W1 (mm/inch)	620 / 24.4	620 / 24.4	620 / 24.4
W2 (mm/inch)	591.7 / 23.30	591.7 / 23.30	591.7 / 23.30
I (mm/inch)	28.3 / 1.11	28.3 / 1.11	28.3 / 1.11
H (mm/inch)	48 / 1.89	48 / 1.89	48 / 1.89
Permeate Port D	DN20		
End Cap Size d (mm)	Φ 24		
Filtration Mode	Suction with Negative Pressure		
Design Flux (LMH)	10 - 30		
Module Gross Weight (kg/lb)	4.7 / 10.36	5.8 / 12.79	6.6 / 14.55
Sealing Material	PU		
Permeate Collecting Tube Material	ABS		
Recommended Flux (L/H)	100 - 300	150 - 450	250 - 750
Max. Δ TMP (Mpa/psi)	-0.05 / -7.25		
Operation Temp. Range (°C/°F)	5 - 40 / 41 - 104		
Optimal Operation pH Range	6 - 9		
Recommended pH Range	2 - 10		
Max. Active Chlorine (ppm)	1,000		
Permeate Turbidity (NTU)	≤ 0.5		
Permeate SS (mg/L)	≤ 5		

## SWB1V Modules Specifications

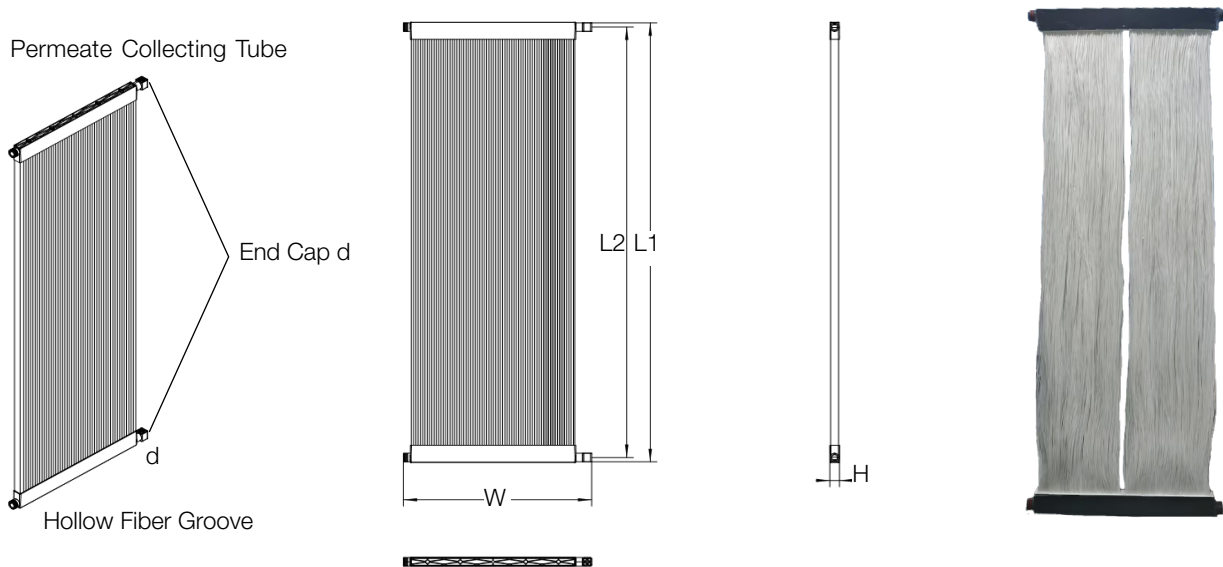
Socket-and-Spigot Joint Series



Module Model	SWB1V4024-10P	SWB1V6022-15P	SWB1V7924-20P
Effective Membrane Area (m <sup>2</sup> /ft <sup>2</sup> )	10	15	20
Membrane Material	PVDF (with PET Supporting Layer)		
Pore Size (μm)	0.1		
Fiber OD (mm)	2.2		
L1 (mm)	610	570	610
L2 (mm)	950	1450	1950
L3 (mm)	1025	1525	2025
W (mm)	46	46	46
Connector	Φ 27	Φ 27	Φ 27
Filtration Mode	Suction with Negative Pressure		
Recommended TMP (Kpa)	0 ~ 35		
Maximum backwash pressure (Kpa)	70		
Design Flux (L/m <sup>2</sup> .h, 25°C)	15 - 30		
Backwash Flux (L/m <sup>2</sup> .h)	20 ~ 50		
Operation Temp.Range (°C)	5 ~ 45		
Recommended pH Range	2 ~ 10		
Aeration (Nm <sup>3</sup> /m <sup>2</sup> .h)	Pulse Aeration: 50 ~ 75; Perforated aeration: 80 ~ 120		
Chemical cleaning pH Range	1 ~ 12		
Maximum NaClO Tolerance Concentration (mg/L)	3000		
Permeate Turbidity (NTU)	≤0.8		
Permeate SS (mg/L)	≤5.0		

## SWB1V Modules Specifications

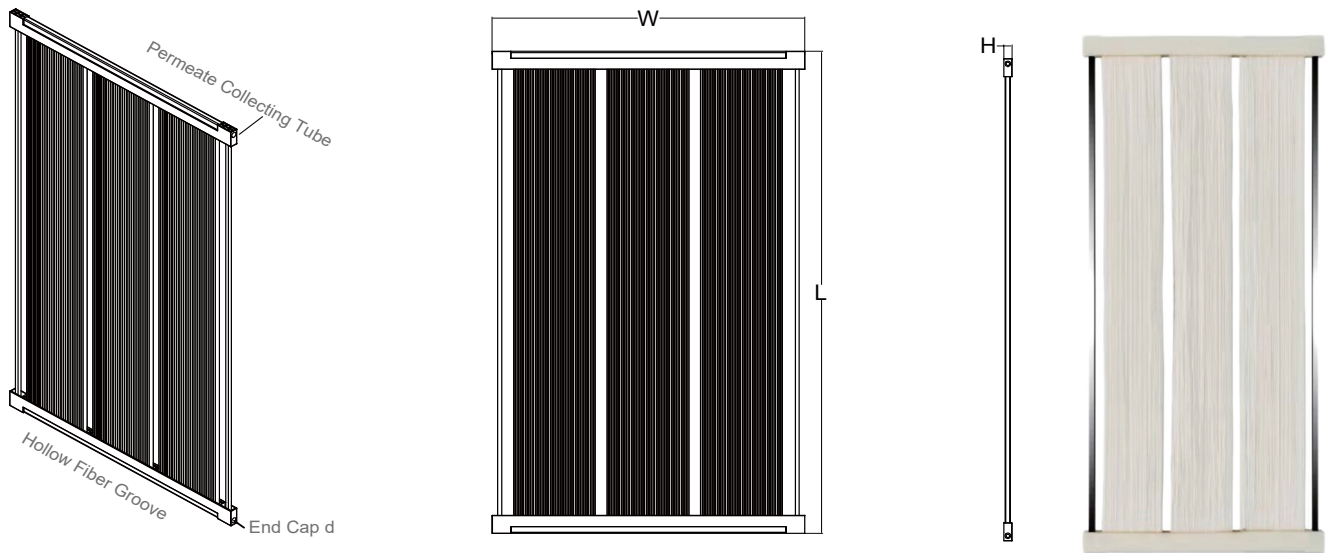
Socket-and-Spigot Joint Series



Module Model	SWB1V8032-30
Membrane Surface Areas (m <sup>2</sup> /ft <sup>2</sup> )	30 / 322.92
Hollow Fiber Material	PVDF (with PET supporting layer)
Pore Size (μm)	0.1
ID / OD (mm/inch)	1.1/2.2
Flow Direction	Outside - in
L1 (mm/inch)	2,040 / 80.31
L2 (mm/inch)	2,000 / 78.74
W (mm/inch)	825 / 32.48
H (mm/inch)	42 / 1.65
End Cap d (mm)	DN32
Flow Mode	Suction with Negative Pressure
Flux Design (LMH)	10-30
Sealing Material	PU
Permeate Collecting Tube Material	ABS
Operation Flux (L/H)	300-900
Max. Δ TMP (Mpa/psi)	-0.05 / -7.25
Operation Temperature (°C/°F)	5 - 40 / 41 - 104
Optimal Operation pH Range	6-9
Recommended pH Range	2-10
Max. Active Chlorine(ppm)	1,000
Permeate Turbidity (NTU)	≤ 0.5
Permeate SS (mg/L)	≤ 5

## SWB1V Modules Specifications

Perfect Retrofit for Mitsubishi SADP2590A



Module Model	SWB1V7849-30I
Membrane Surface Areas (m <sup>2</sup> /ft <sup>2</sup> )	30 / 322.92
Membrane Material	PVDF (with PET Supporting Layer)
Supporting Rod Material	SS304
Pore Size (μm)	0.1
ID/OD (mm/inch)	1.1/2.2
L (mm/inch)	2,000 / 78.74
W (mm/inch)	1,250 / 49.21
H (mm/inch)	32 / 1.26
End Cap d (mm)	Φ 24
Flow Mode	Suction with Negative Pressure
Flux Design (LMH)	10 - 30
Module Weight (kg/lb)	13 / 28.66
Sealing Material	PU
Permeate Collecting Tube Material	ABS
Operation Flux (L/H)	300 - 900
Max. Δ TMP (Mpa/psi)	-0.05 / -7.25
Operation Temperature (°C/°F)	5 - 40 / 41 - 104
Optimal Operation pH Range	6 - 9
Max. Temperature (°C/°F)	40 / 104
Recommended pH Range	2 - 10
Max. Active Chlorine (ppm)	1,000
Permeate Turbidity (NTU)	≤ 0.5
Permeate SS (mg/L)	≤ 5

# SWB3V Series MBR Modules

SWB3V modules are made with reinforced hollow fiber PVDF membrane. The hollow fibers have high tensile strength with excellent chemical resistance. 0.03  $\mu\text{m}$  pore size provides superior rejection rate of suspended solids, bacteria and viruses.

Compared with conventional treatment, SWB3V modules produce extremely high quality permeate. Due to the high mixed liquor suspended solids (MLSS), SWB3V can greatly reduce the overall treatment plant footprint and annual operation cost.

## Features

- High hydrophilic PVDF membrane
- Reinforced hollow fiber membrane
- Siphon water permeate reduce energy consumption
- Long membrane service life
- Consistent and stable flux performance
- Energy saving due to low operating pressure

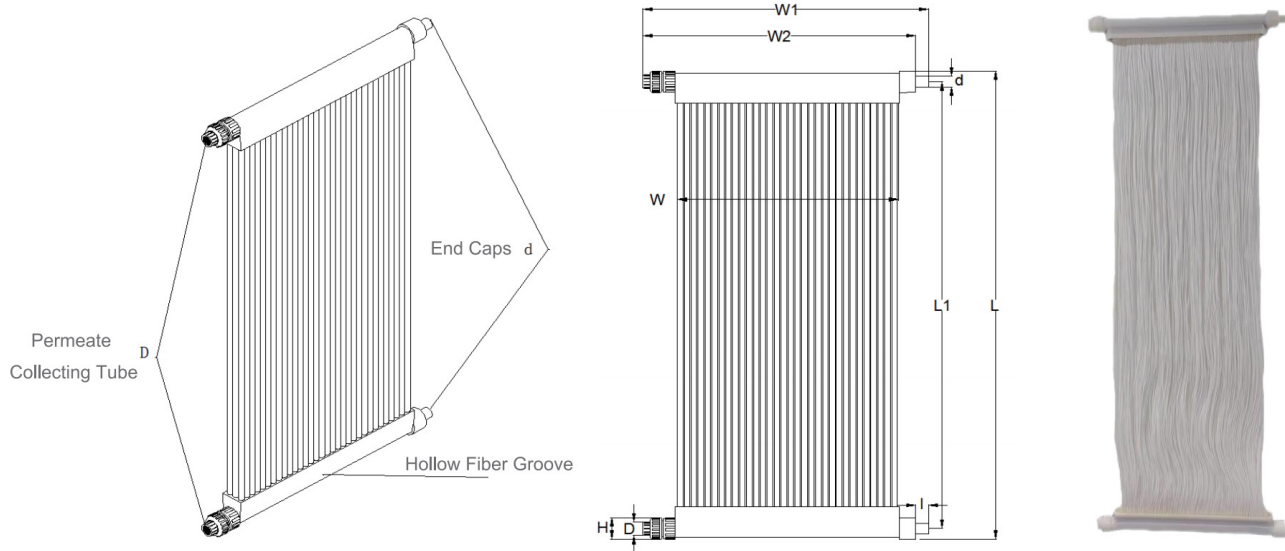


## Applications

- Municipal sewage treatment and reuse
- Ideal for Green Building needing water reuse
- Industrial wastewater treatment and reuse
- Landfill wastewater treatment



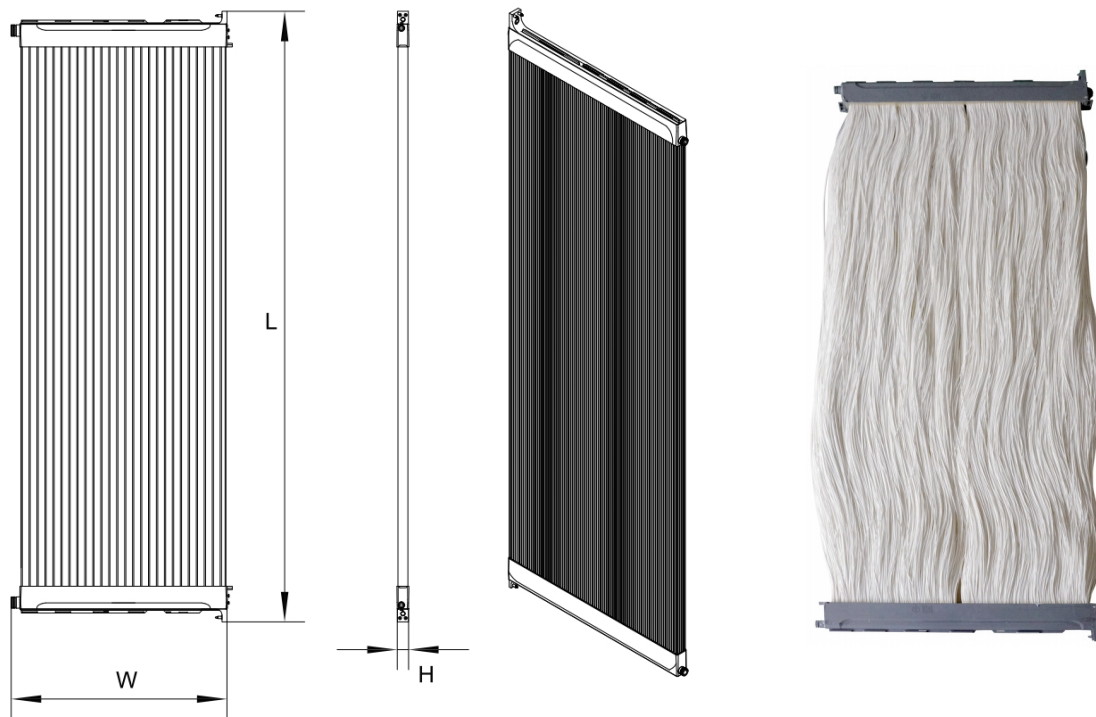
## SWB3V Modules Specifications



Module Model	SWB3V4024-10	SWB3V6024-15	SWB3V7924-20
Membrane Surface Areas (m <sup>2</sup> /ft <sup>2</sup> )	10 / 107.64	15 / 161.46	20 / 215.28
Membrane Material	PVDF (with PET supporting layer)	PVDF (with PET supporting layer)	PVDF (with PET supporting layer)
Pore Size (μm)	0.03	0.03	0.03
Fiber ID / OD (mm/inch)	1.1/2.2	1.1/2.2	1.1/2.2
L1 (mm/inch)	1,000 / 39.37	1,500 / 59.05	2,000 / 78.74
L (mm/inch)	1,025 / 40.35	1,525 / 60.04	2,025 / 79.72
W (mm/inch)	480 / 18.9	480 / 18.9	480 / 18.9
W1 (mm/inch)	620 / 24.4	620 / 24.4	620 / 24.4
W2 (mm/inch)	591.7 / 23.30	591.7 / 23.30	591.7 / 23.30
I (mm/inch)	28.3 / 1.11	28.3 / 1.11	28.3 / 1.11
H (mm/inch)	48 / 1.89	48 / 1.89	48 / 1.89
Permeate Port D	DN20		
End Cap Size d (mm)	φ 24		
Filtration Mode	Suction with Negative Pressure		
Design Flux (LMH)	10-30		
Module Gross Weight (kg/lb)	4.7 / 10.36	5.8 / 12.79	6.6 / 14.55
Sealing Material	PU		
Permeate Collecting Tube Material	ABS		
Recommended Flux (L/H)	100 - 300	150 - 450	250 - 750
Max. Δ TMP (Mpa/psi)	-0.05 / -7.25		
Operation Temperature (°C/°F)	5 - 40 / 41 - 104		
Optimal Operation pH Range	6-9		
Recommended pH Range	2-10		
Max. Active Chlorine (ppm)	1,000		
Permeate Turbidity (NTU)	≤ 0.2		
Permeate SDI	≤ 5		

## SWB3V-S Series Specifications

Perfect Retrofit for Suez ZeeWeed 500D



Module Model	SWB3V8633-31S	SWB3V8633-34S	SWB3V8633-40S
Effective Membrane Area (m <sup>2</sup> )	31.6	34.4	40.9
Membrane Material	PVDF (with PET supporting layer)		
Pore Size (μm)	0.03		
Fiber ID / OD (mm)	1.1 / 2.2		
L (mm)	2198		
W (mm)	844		
H (mm)	49		
Permeate Collecting Tube Material	ABS		
Sealing Material	PU		
Operation Temperature (°C)	5 - 40		
Filtration Mode	Suction with Negative Pressure		
Design Flux (LMH)	10-30		
TMP Range (Kpa)	-55 to 55 Kpa		
Recommended pH Range	2-10		
Turbidity (NTU)	≤ 0.2		
Permeate SDI	≤ 5		



# SWBT Series PTFE-MBR Modules

SWBT PTFE-MBR modules are made of highly hydrophilic PTFE membrane fiber, which have excellent chemical resistance and high hydrophilicity. With 0.1  $\mu\text{m}$  filtration pore size, it has excellent retention effects on impurities such as solid particles, colloidal suspensions, and bacteria. Compared to traditional treatment processes and PVDF MBR membrane products, SWBT PTFE-MBR modules have the advantages of small footprint, better effluent quality, longer service life, and stronger chemical cleaning tolerance.

## Features

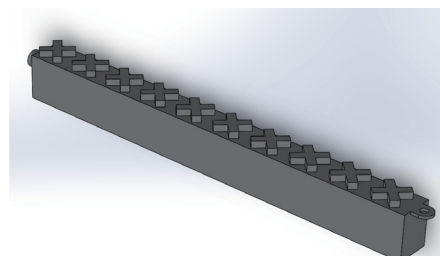
- **Automated spinning technology and better root protection on MBR frame**

By adopting automated spinning technology, the membrane fibers are uniformly arranged. After experiments and practical applications, it has been shown that the automated spinning technology can effectively reduce the turbidity of effluent and reduce sediment accumulation at the bottom. At the same time, with hot-melt adhesive at the bottom, it can effectively prevent the root of the membrane fiber from cracking and crawling, then ensure the effluent quality.



- **Intermittent impact aeration, energy-saving and efficient product**

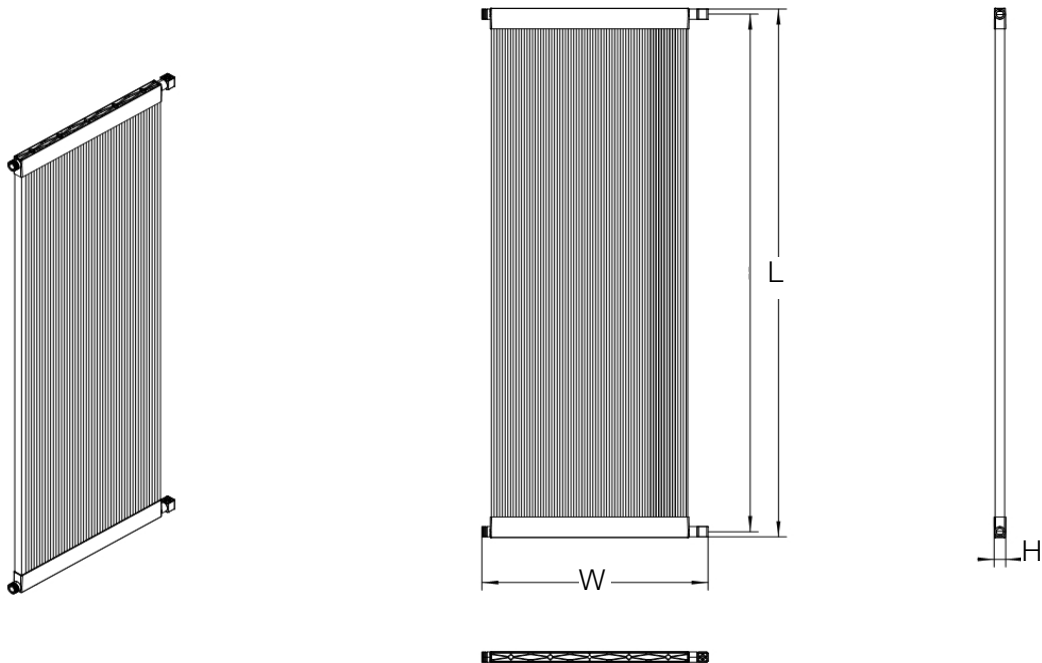
All products in this series are equipped with the aerators that has atmospheric bubble and intermittent impact, which can release large bubbles with stronger shear force compared to traditional aeration methods. It significantly improve the aeration effect and the air volume decreases by 25% -40%, therefore lower energy consumption.



## PTFE MBR and PVDF MBR Comparison

Model No.	PTFE MBR	PVDF MBR
Porosity	> 75%	45-70%
Tensile Strength	> 60N	8N
Permeate Quality	<1NTU	< 1NTU
Hydrophily	Permanent Hydrophilicity	Hydrophilic groups lost easily
Use Condition	MLSS 4g-20g/L	MLSS 4g-8g/L
Pollution-resistant	High, low surface tension, good aeration effect	Better, not suitable for high pollution applications
Service Life	5-7 years	3-5 years
Application Area	High polluting industrial wastewater, material separation	Municipal and industrial wastewater

## PTFE-MBR Modules Specifications



Module Model	SWBT6132-25	SWBT8632-36	SWBT12532-53
Membrane Material	Permannot Hydrophilicity PTFE		
Pore Size (μm)	0.1		
Fiber ID / OD (mm)	1 / 2.3		
Effective Membrane Area (m <sup>2</sup> )	25	36	53
Overall dimension(mm)	825*46*1560	825*46*2200	825*46*3200
Permeate Outlet	DN32		
Housing Material	ABS		
Sealant	Epoxy Resin		
Operation Temperature (°C)	4 - 45		
Recommended pH Range	0-14		
MLSS (mg/L)	5000-20000		
Design Flux (LMH)	10-40		
Backwash Flux (LMH)	1.5-2 multiple to design flux		
Max. TMP Range (Kpa)	60		
Max. backwash pressure (Kpa)	100		
Aeration (Nm <sup>3</sup> /m <sup>2</sup> *h)	50-100		

# PTFE-MBR Flat Sheet Modules

SWBFT PTFE-MBR Flat Sheet Modules are made of highly hydrophilic PTFE membrane fiber, which have excellent chemical resistance and high hydrophilicity. With 0.2  $\mu\text{m}$  filtration pore size, it has excellent retention effects on impurities such as solid particles, colloidal suspensions, and bacteria. Compared to traditional treatment processes and PVDF MBR membrane products, SWBFT PTFE-MBR Flat Sheet modules have the advantages of small footprint, better effluent quality, longer service life, and stronger chemical cleaning tolerance.

## Features

### ① PTFE flat sheet membrane

- Excellent flux rates (porosity up to 90%), 100% recovery of permeate
- Strong anti-fouling (permanent hydrophilic)
- High physical strength and resistance to chemical and temperature

### ② Stable permeate quality

### ③ Simple maintenance and management

- Fully automatic process control
- Easy to flush, in-situ replacement and cleaning with low cleaning frequency
- It is easily located, and replaced if the membrane is damaged

### ④ Cost saving

- Low energy consumption, low labor and maintenance cost
- Lower sludge production, and lower cost of sludge disposal
- No Back flushing or related piping and equipment required
- Simple operation process, and significantly smaller footprint

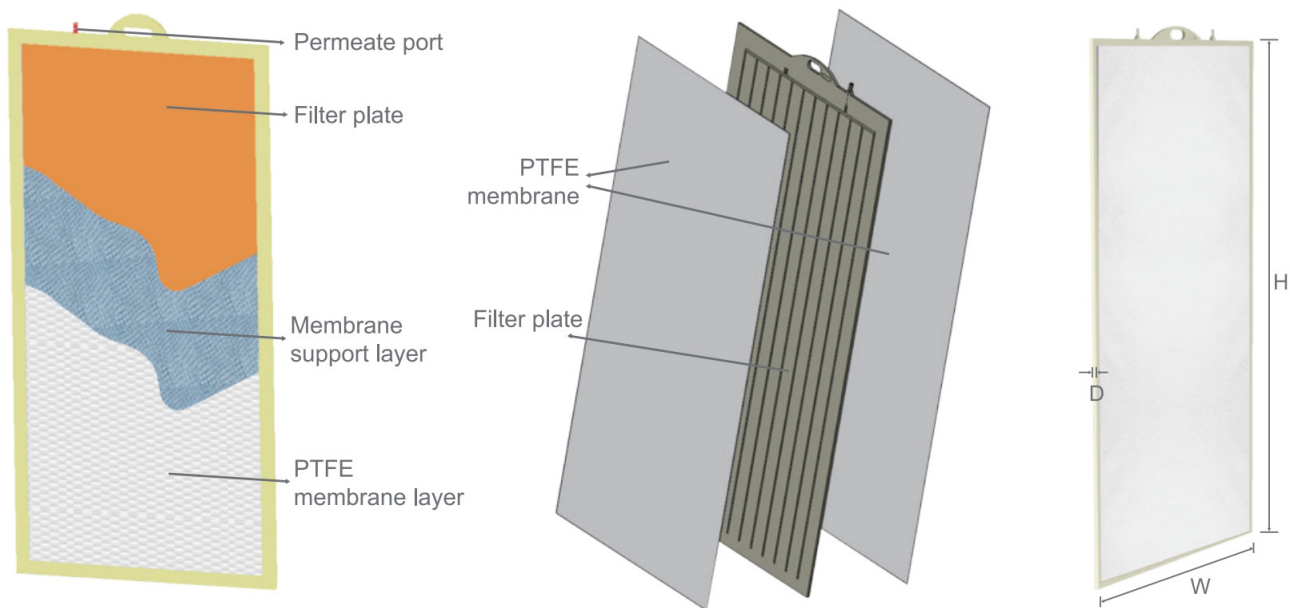


## Applications

- Municipal waste water
- Residential wastewater
- Pharmaceutical, electroplating wastewater
- Power plant waste water
- Steel processing wastewater
- Printing and dyeing wastewater
- Agricultural product processing waste water
- Landfill leachate



## PTFE Flat Sheet Membrane Modules Specifications



Membrane Elements Model	SWBFT3919-08	SWBFT6819-15
Effective Membrane Area (m <sup>2</sup> )	0.8	1.5
Size: W*H*D (mm)	490 × 1,000 × 7	490 × 1,750 × 7
Weight (kg)	3.2	5.5
Pore Diameter (μm)	0.2	
Membrane Material	PTFE	
Lining Plate Material	ABS	
Filtrated Mode	Negative Pressure Suction, Continuous Aeration	
Flux[Litre/(Pc.Day)]	300-600	600-900
Aeration Volume [Litre/(Pc.Min)]	≥10	≥10
pH	1-14	
Permeate Turbidity (NTU)	≤ 0.2	
Permeate SS (mg/L)	≤ 1	



## MBR Project Cases

### 6500 m<sup>3</sup>/d Coal chemical Wastewater Treatment Plant in Xinjiang

Project Site: Xinjiang, China



### 7500 m<sup>3</sup>/d Dangyang Sewage Factory Treatment Project

Project Site: Hubei, China





## 5,000 m<sup>3</sup>/d Electroplating Wastewater MBR Project

Project Site: Guangdong, China



## 3,000 m<sup>3</sup>/d Palm Oil Mill Effluent MBR Project

Project Site: Malaysia





## 10, 000 m<sup>3</sup>/d Electronic Wastewater MBR Project

Project Site: Jiangxi, China



## 2, 000 m<sup>3</sup>/d Municipal Sewage Treatment MBR Project

Project Site: South Africa





## 500 m<sup>3</sup>/d Hotel Wastewater MBR Integrated System

Project Site: Caribbean



## 1,000 m<sup>3</sup>/d Landfill Leachate MBR Project

Project Site: Anhui, China





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