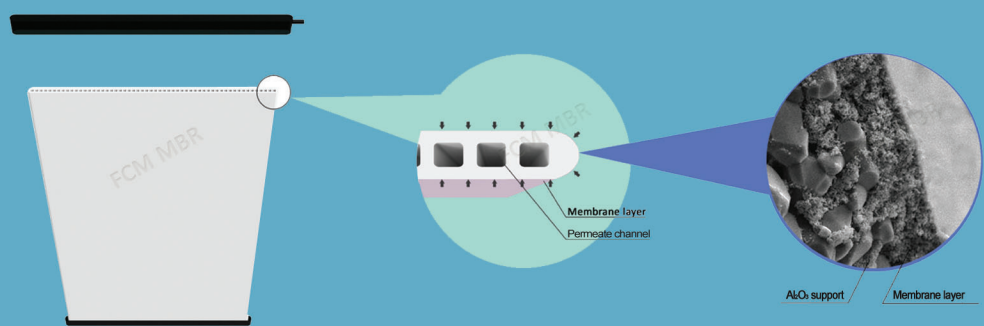


Flat Sheet Plate Ceramic Membranes



At present MBR membranes in water treatment market are almost made from polymeric materials. Polymeric hollowfiber and flat membranes have the disadvantages of poor tolerance, high risk of breakage, low running TMP, low flux, poor cleaning effect, short life time and so on, which make application limited.

FCM flat sheet plate ceramic membrane which is made of Al_2O_3 ,sintered repeatedly in high temperature.Compared with polymeric organic MBR membranes, FCM flat ceramic membranes have huge potential market because of its reliable performance and unique resisitance to chemical and oxidant.



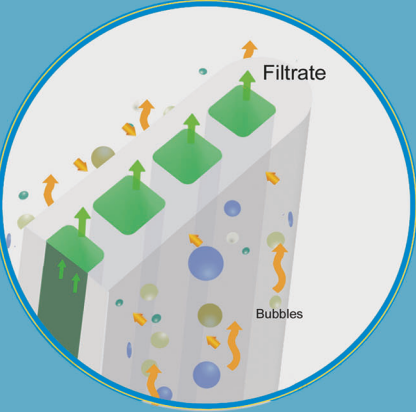
Specification of FCM™ Membranes

Model	FCM1010	FCM1020	FCM1040
Membrane Area	0.125m ²	0.25m ²	0.5m ²
Dimension L*W*T	250 *250 *6mm	500 *250 *6mm	1000*250*6mm
Weight	0.5KG	1.0KG	1.9KG
Material	Al ₂ O ₃		
Pore size	100nm		
PH	2-12		
Temperature	5-80℃		
Filtration Mode	Outside-In		
Work Pressure	-0.06~0.20Mpa		
Cleaning Mode	Online Backwash/Aeration / Chemical Cleaning Offline Chemical Soaking / High-pressure Water Rinse		

Specification of module skids

Module		TF-MH2	TF-MH25	TF-MH50	TF-MH100	TF-MH200
Parameters	Membrane Model	FCM1020	FCM1040	FCM1040	FCM1040	FCM1040
	Membrane Qty /pcs	10	50	100	200	400
	Area/ m ²	2.5	25	50	100	200
	Water Output m ³ /day	2-3	15-35	30-70	60-140	120-280
Dimension & Weight	Dimension L*W*H / mm	320*340 *800	1010*320 *1800	1720*320 *1800	1720*720 *1800	1720*720 *3250
	Weight /kg	15	200	310	630	1185
Operation Condition	PH	2-12				
	Temperature	5-80℃				
	Work Pressure	-0.06~0.2Mpa				
	Cleaning	Online Backwash/Aeration / Chemical Cleaning Offline Chemical Soaking / High-pressure Water Rinse				

- Above data is just for reference . The actual water output flux is determined according to the quality of raw water and the general process design.
- Module load/size can be customized and designed according to the individual requirement.



Advantages of FCM™ Membranes

- Reliable operation and easy maintenance
FCM ceramic membrane has reliable performance during operation and will not be easily broken or damaged. It can operate under long sludge age and nearly achieve no residual sludge discharge.
- High quality and stable filtrated water quality
The solid-liquid separation efficiency is high, and the separation effect is far greater than that of the sedimentation tank. All SS and turbidity of filtrate are close to zero, and viruses and bacteria can be effectively removed.
- Greatly remove ammonia nitrogen and refractory organic matter
Since the microorganisms are completely rejected in the bioreactor, it is beneficial to the trapped growth of nitrifying bacteria, and the system nitrification efficiency is improved. It can also increase the hydraulic retention time of some refractory organics, which is beneficial to improve the degradation efficiency of refractory organics.
- Water reused directly
Combined with bioilocal process, FCM membrane can bring efficient solid-liquid separation for the suspended solids, colloidal substances, and microbial flora . Since the bacteria cannot pass through 100nm pore, there is no need for disinfection. Therefore, the filtrate can be reused directly without post treatment.
- Reduce remaining sludge discharge
The process can be operated under high volume load. The output of residual sludge can keep extremely low, and even no sludge is produced, which greatly reduces the sludge treatment cost.
- Efficient sewage treatment capacity
FCM ceramic membrane can reject microorganisms in the bioreactor, ensuring high activated sludge, which makes the system withstand impact loads, and at the same time realizes the separation of hydraulic retention time and sludge retention time.
- Long service life
FCM flat ceramic membranes are resistant to acid and alkali, oxidation, solvent, abrasion, and microorganisms. The service life is more than 15 years under normal conditions.
- Remote control by PLC automation
Industrial automation PLC control can be adopted for remote control with very low failure.
- Compact footprint, easy installation
FCM-MBR flat sheet ceramic membrane bioreactor can maintain a high concentration of microorganisms, greatly saves floor space, which is only 1/2 of the traditional process; The system can be fabricated as ground type, semi-underground type and underground type.
- Modularized design: FCM membrane and module can be modularized and designed to meet different capacity with applicability and feasibility for different waste water.

Cases & References

