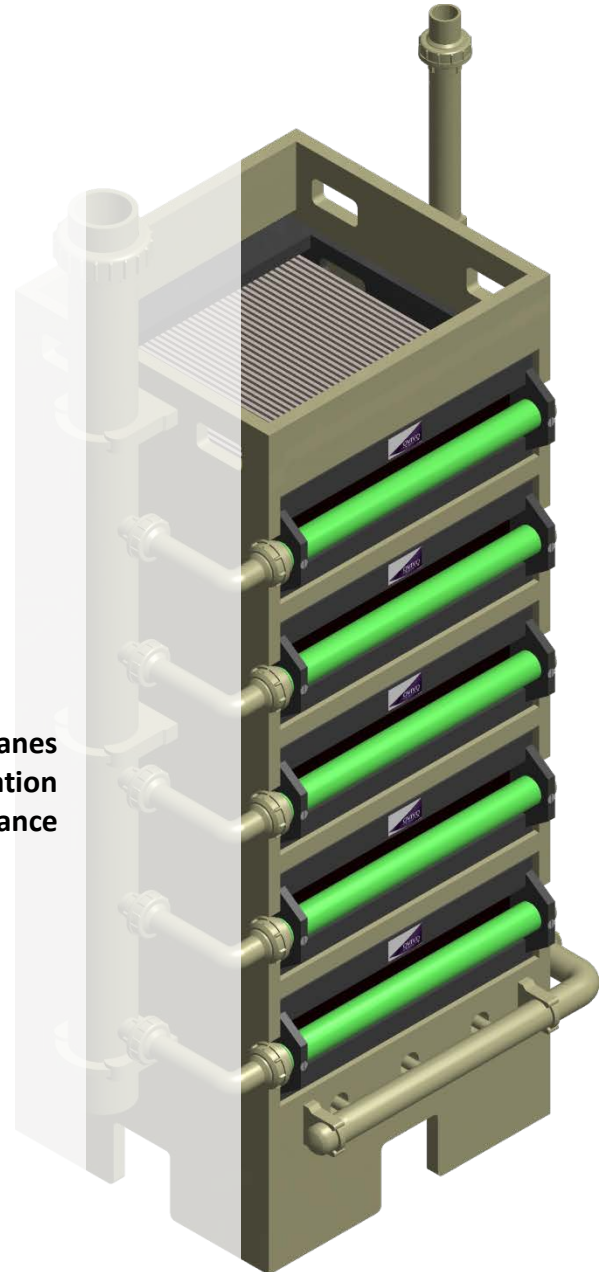


OVIVO[®] Filter Rack with SiC Ceramic Flat Sheet Membrane

- ▶ **OVIVO FSM-SiC**
(for Microfiltration and
Ultrafiltration applications)

The high flux submersible silicon flat sheet membranes are designed for submerged outside-in filtration applications and provide an extremely high tolerance towards upstream upsets



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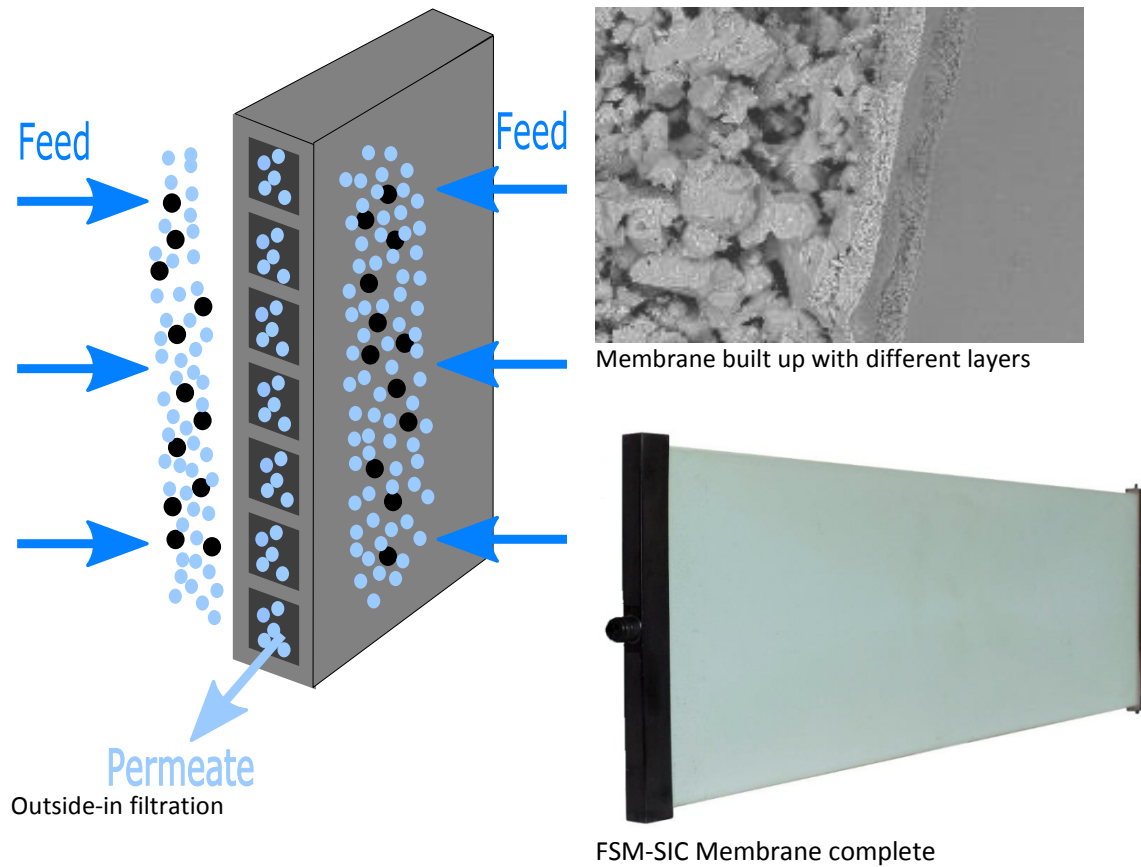
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SIC FLAT SHEET MEMBRANES (FSM)

The FSM carrier and the selective layers are made of recrystallized silicon carbide which gives the product some unique advantages such as high flux, total chemical resistance (pH 1-12: constant exposure solvents / oxidizer) and long lifetime. The FSM is offered with pore sizes in the MF and UF range. The FSM is built into a submerged vacuum driven filtration rack, which consist of stacks of modules each with multiple FSM's. Cleaning can be performed by back flushing in place along with chemical reagents, if needed.



Your Benefits

FSM SiC Membrane Benefits

- Highly Hydrophilic ▶ clean water permeability up to 10.000 L/h · m² · bar (LMH)
- Anti-clogging ▶ membrane repels negatively charged particles
- Chemically inert ▶ no degradation of membrane from any chemical (>pH 2.6)
- Robustness ▶ 2nd hardest material (after Diamonds) endures temperature up to 800°C

Operation & Features Benefits

- Highly compact designs
- High recovery - close to 100% mass
- Minimal maintenance and simple operation
- Lifetime exceeding 10 years
- Resistant to solvents, oil, grease, high temperature, high pressure, Ozone and oxidizers
- Low energy consumption

Application Area

- Clean water
- Wastewater Treatment
- Water and Wastewater Recycling
- Well water
- Surface water
- Sewage water
- MBR
- High TSS water
- Sludge thickening

Performance

- Bacteria: 4 log removal
- Flux: 50 – 1000 LMH
- SDI typical well below 3

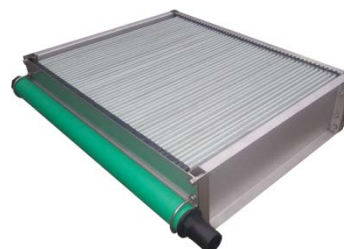
Typical test results

Test Results		
	Feed	Permeate
Fe	15 ppm	0.005 ppm
Mn	2 ppm	0.019 ppm
Turbidity	35 NTU	<0.2 NTU



FSM SIC MODULES

A module consists of multiple numbers of membranes.
Each membrane can be replaced individually.



Membrane Material Comparison

TYPE	SiC	Al ₂ O ₃	Polymer
LIFE TIME	+++	+++	+
FLUX	+++	++	+
CHEMICAL RESISTANCE	+++	++	+
ENERGY SAVINGS	+++	++	+
RECOVERY RATE	+++	+++	+
OPERATING TMP	+++	++	+
FOULING TENDENCY	+++	++	+
TEMPERATURE RESISTANCE	+++	+++	+

Technical Data

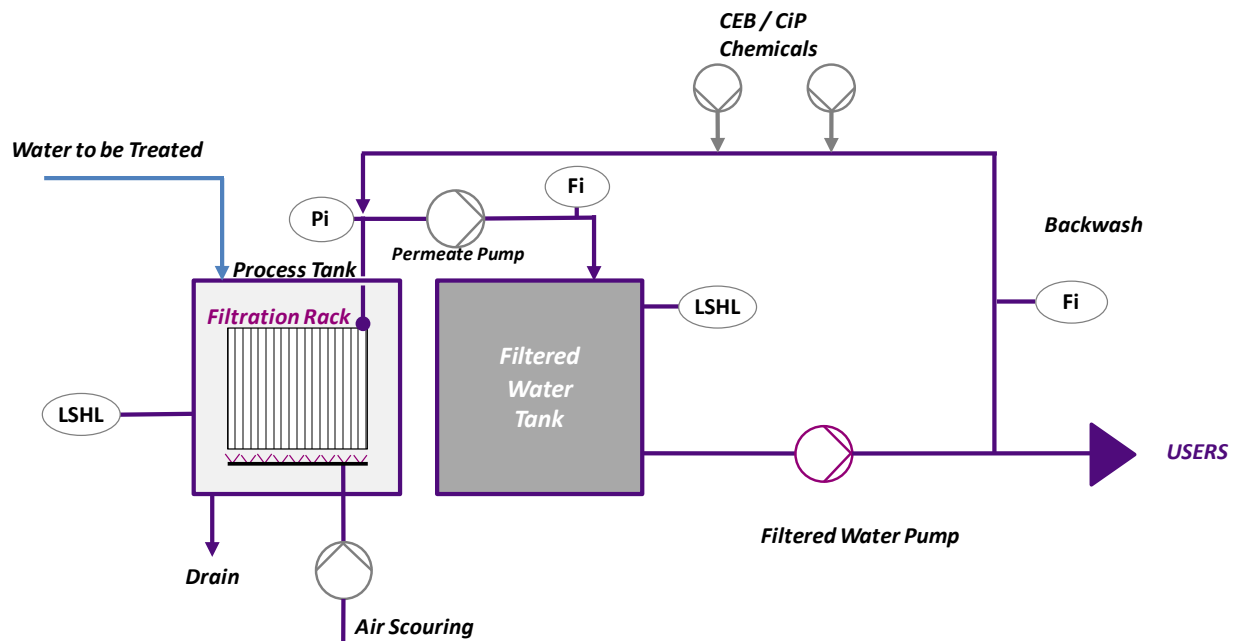
MODULES	FSM-SiC	
Module Housing	PVC / PPS w. Glass Fiber	Stainless Steel
Membrane Material	Recrystallized Silicon Carbide (SiC)	
Number of FSM- SiC membranes	41	50
Active Membrane Surface Area	5.95 m ² / 64 ft ²	7.25 m ² / 78 ft ²
Pore Size Cut-Off	≤ 0.1 μm	
Max. Operating Temperature	40°C / 104°F	
pH Resistance	1-12	

FILTRATION RACK

Advantage of OVIVO FSM-SiC-Filtration Rack

- Lowest foot print for any FSM Technology
- Modules individually replaceable (PP Rack without dismantling other modules).
- Each module can be designed out of polymeric (metallic free) or stainless steel frames for membrane protection and maximal usage of air scouring
- Rack equipped with integrated air scouring system providing maximal flux, permeate and backwash pipes
- Flexible design for easy add or removal of single module.

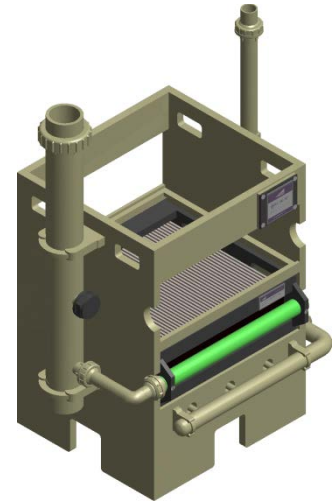
Typical Setup For A Flat Sheet Membrane Filtration Rack



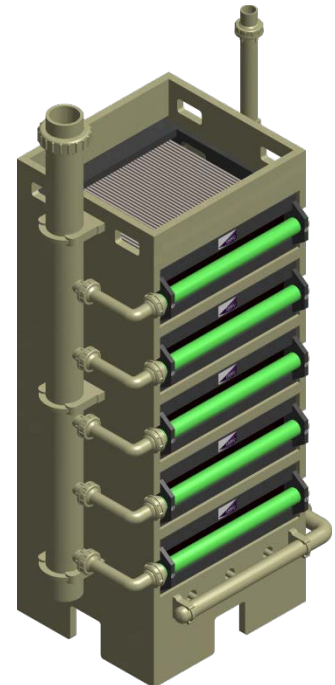
CEB: Chemical Enhanced Backwash

CiP: Clean In Place

TYPE	2 MODULES
Rack Material (Metal Free)	PP
Number Of Modules max.	2
Dimensions approx. (HxWxD)	1272x874x615 mm 50x24.5x24 inch
Active Membrane Area Fully Equipped	11.9 m ² / 128 ft ²
Air Scouring	12 Nm ³ /h; 424 scfh



TYPE	5 MODULES
Rack Material (Metal Free)	PP
Number Of Modules max.	5
Dimensions approx. (HxWxD)	1942x874x615 mm 76.5x24.5x24 inch
Active Membrane Area Fully Equipped	29.7 m ² / 320 ft ²
Air Scouring	30 Nm ³ /h; 1060 scfh



TYPE	5 MODULES
Rack Material (Metal Free)	SS316 / PP
Number Of Modules max.	5
Dimensions approx. (HxWxD)	1160x600x802 mm 45.7x23.6x31.6 inch
Active Membrane Area Fully Equipped	36.25 m² / 390 ft²
Air Scouring	36 Nm³/h; 1272 scf



Other configurations on request.



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