



MemTeck™ SWRO-HR 440 8040

Sea Water-High Rejection (SWRO-HR) 440 RO Membranes

KEY FEATURES	Applications
SWRO-HR Membrane — Key Features The SWRO-HR (Seawater Reverse Osmosis – High Rejection) membrane elements are specifically engineered for treating highly saline seawater and industrial brines. Their key features include: • Excellent salt rejection ($\approx 99.3\%$) at very high salinity levels (up to $\sim 50,000$ ppm TDS) Seawater • Optimized performance at lower feed pressures, improving overall system efficiency • Advanced proprietary feed-spacer technology, which: ○ Reduces pressure drop across the membrane ○ Enhances flow distribution ○ Improves long-term operational stability • Superior anti-fouling characteristics, leading to: ○ Reduced membrane scaling and fouling ○ Lower chemical cleaning frequency ○ Extended membrane lifespan • Designed for high-salinity applications, including: ○ Seawater desalination ○ Highly saline industrial wastewater treatment ○ Brine concentration processes	Applications of SWRO-HR Membrane Elements The SWRO-HR series is designed for the treatment of highly Rejection waters and demanding industrial applications. These elements are generally suitable for: • Harsh seawater conditions (high fouling potential and elevated salinity) • Seawater desalination • High-salinity - Brine concentration • High-salinity surface water • High-salinity municipal wastewater (reuse applications) • Dairy industry process water and wastewater treatment • Pharmaceutical industry water purification • Oil and gas produced water treatment • Cement industry process water treatment • Steel industry wastewater treatment and reuse

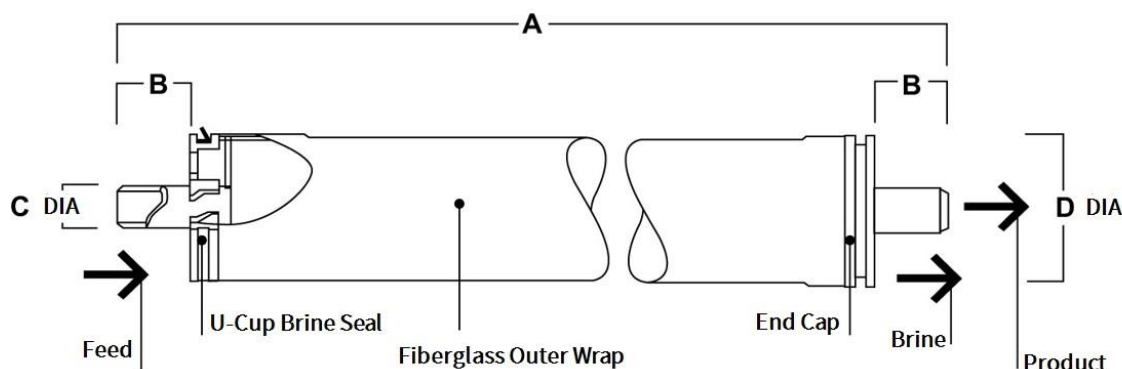
Typical Properties

Product, (Testing Conditions)	Active Membrane Area ft ² (m ²)	Permeate Flow Rate GPD (m ³ /d)	Stabilized Salt Rejection %	Feed Spacer mil
SWRO-HR, (32,000 ppm)	440 (41)	10,000 (38)	99.6 %	34
SWRO-HR, (50,000 ppm)	440 (41)	3,500 (13)	99.1 %	34

1. Test conditions: 32,000 ppm NaCl, 800 psi (55.158 bar), pH 8, 77°F (25°C), 15 % recovery.
2. Minimum salt rejection is 99.6 %.
3. Individual elements may have different permeating flows by $\pm 15\%$.



Element Dimensions



Product	Dimensions – inches (mm)			
	A	B	C	D
SWRO-HR-8040	40.0 (1,016)	1.19 (30.2)	1.25 (28.6)	7.9 (200)

Operation Specifications and cleaning limits*

Membrane Type	SWRO-HR-8040
Membrane Materials	Polyamide Thin-Film Composite
Maximum Operating Temperature ^a	113°F (45°C)
Maximum Operating Pressure	1200 psi (83 bar)
Maximum Feed Flow Rate	(5 m ³ /h)
Maximum Pressure Drop	130 psig (2.0 bar)
pH Range	2 - 11
Maximum Feed Silt Density Index (SDI)	SDI 5
Free Chlorine Tolerance	< 0.1 ppm

1. Over pH 10, the maximum continuous temperature is 95°F (35°C).
2. In certain conditions, free chlorine and other oxidizing agents can cause premature membrane failure. Pretreatment prior to membrane exposure is recommended to prevent oxidation damage, since oxidation damage is not covered by warranty.

General Information

1. After initial wetting, keep elements moist at all times
2. The limited warranty will be null and void if the operating limits and guidelines are not strictly followed.
3. For the purpose of preventing biological growth during prolonged system operation shutdowns, membrane elements should be immersed in a preservative solution
4. The customer is fully responsible for the effects of incompatible chemicals and lubricants on elements
5. The maximum pressure drops across an entire pressure vessel (housing) is 50 psi (3.4 bar).
6. Always avoid static backpressure on the permeate side
7. The permeate obtained from the first hour of operation should be discarded.
8. Make sure there are no abrupt changes in pressure or crossflow
9. During start-up, shutdown, cleaning, or other sequences, spiral elements should be protected from damage. It is recommended to gradually transition from a standstill to an operating state during startup:
10. The feed pressure should be gradually increased over a 30-60-minute period
11. The crossflow velocity should be gradually increased over 15-20 seconds to reach the set operating point.
12. It is crucial that the system is designed and operated correctly in order to reduce cysts and pathogens effectively.
13. The permeate obtained from the first hour of operation should be discarded.



Important Information

14. To prevent membrane damage due to overfeeding or hydraulic shock, it is essential to start up reverse osmosis water treatment systems properly. As a result of following the proper start-up sequence, system water quality and productivity goals can also be achieved.
15. Pretreatment of the membrane, loading of the membrane elements, instrument calibration, and other system checks should be completed before starting the system

Regulatory Note

Please check the application status of this product before using or selling it; some countries may restrict the use of this product in drinking water.