RE 4040-SHN

High rejection RO element for seawater and high salinity well water

CSM

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SPECIFICATIONS :

General Features

Permeate flow rate:	1,200 GPD (4.5 m^3/day)
Nominal salt rejection:	99.75%
Effective membrane area:	74 ft^2 (6.9 m^2)

1. The stated product performance is based on data taken after 30 minutes of operation at the following test conditions:
   - 32,000 mg/L NaCl solution at 800 psig (5.5 MPa) applied pressure
   - 8% recovery
   - 77 °F (25 °C)
   - pH 6.5 –7.0
2. Boron rejection is 92.0% at pH 8.0 and 5 mg/L boron feed with the same test conditions as above.
3. Minimum salt rejection is 99.6%.
4. Permeate flow rate for each element may vary but will be no more than 20%.
5. All elements are vacuum sealed in a polyethylene bag containing 1.0% SBS (sodium bisulfite) solution and individually packaged in a cardboard box.

Membrane type:	Thin-Film Composite
Membrane material:	Polyamide (PA)
Element configuration:	Spiral-Wound, FRP Wrapping

Dimensions

Model Name	A	B	C	D	E	Part Number	
						Inter-connector	Brine Seal
RE40 40-SHN	40.0 inch (1,016 mm)	4.0 inch (102 mm)	0.75 inch (19.1 mm)	1.05 inch (26.7 mm)	1.05 inch (26.7 mm)	40000305	40000306

1. Each membrane element supplied with one brine seal, one interconnector (coupler) and four rings.
2. All RE4040 elements fit nominal 4.0 inch (102 mm) I.D. pressure vessels.

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APPLICATION DATA :

Operating Limits	· Max. Pressure Drop / Element	15 psi (0.1 MPa)
	· Max. Pressure Drop / 240" Vessel	60 psi (0.41 Mpa)
	· Max. Operating Pressure	1,200 psi (8.27 MPa)
	· Max. Feed Flow Rate	18 gpm (15.0 m³/hr)
	· Min. Concentrate Flow Rate	4 gpm (3.6 m³/hr)
	· Max. Operating Temperature	113 °F (45 °C)
	· Operating pH Range	2.0–11.0
	· CIP pH Range	1.0–13.0
	· Max. Turbidity	1.0 NTU
	· Max. SDI (15 min)	5.0
	· Max. Chlorine Concentration	< 0.1 mg/L
Design Guidelines for Various Water Sources	· Wastewater Conventional (SDI < 5)	8–12 gfd
	· Wastewater Pretreated by UF/MF (SDI < 3)	10–14 gfd
	· Seawater, Open Intake (SDI < 5)	7–10 gfd
	· Seawater, Beach Well (SDI < 3)	8–12 gfd
	· Surface Water (SDI < 5)	12–16 gfd
	· Surface Water (SDI < 3)	13–17 gfd
	· Well water (SDI < 3)	13–17 gfd
	· RO permeate (SDI < 1)	21–30 gfd
Saturation Limits (Using Antiscalants) †	· Langlier Saturation Index (LSI)	<+1.5
	· Stiff and Davis Saturation Index (SDSI)	<+0.5
	· $CaSO_4$	230% saturation
	· $SrSO_4$	800% saturation
	· $BaSO_4$	6,000% saturation
	· SiO_2	100% saturation

†The above saturation limits are typically accepted by proprietary antiscalant manufacturers. It is the user's responsibility to ensure proper chemical(s) and concentration are dosed ahead of the membrane system to prevent scale formation anywhere within the membrane system. Membrane elements fouled or damaged due to scale formation are not covered by the limited warranty.

GENERAL HANDLING PROCEDURES

Elements contained in the boxes must be kept dry at room temperature (7–32°C; 40 –95°F) and should not be stored in direct sunlight. If the polyethylene bag is damaged, a new preservative solution (sodium bisulfite) must be added and air-tight sealed to prevent drying and biological growth.

Permeate from the first hour of operation should be discarded to flush out the preservative solution.

Elements should be immersed in a preservative solution during storage, shipping and system shutdowns to prevent biological growth and freezing. The standard storage solution contains 1% by weight sodium bisulfite or sodium metabisulfite (food grade). For short term storage (i.e. one week or less) 1% by weight sodium metabisulfite solution is adequate for preventing biological growth.

Keep elements moist at all times after initial wetting.

Avoid excessive pressure and flow spikes.

Only use chemicals compatible with the membrane elements and components. Use of such chemicals may void the element limited warranty.

Permeate pressure must always be equal or less than the feed/concentrate pressure. Damage caused by permeate back pressure voids the element limited warranty.

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