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FILMTEC™ Membranes

FILMTEC **SW30-380** High Productivity Seawater RO Element

Features

The FILMTEC™ SW30-380 is a high productivity seawater reverse osmosis element that offers the lowest energy consumption in the industry for optimal economics in two-pass seawater desalination systems. In addition, this element is well suited for high salinity brackish water applications.

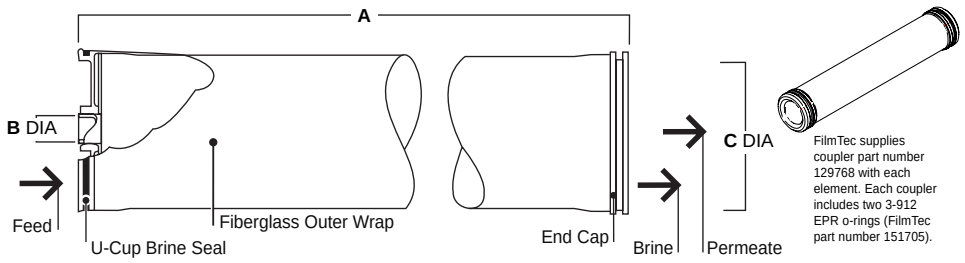
- The high flow and high rejection of membrane used in the SW30-380 helps reduce energy costs in the first pass of two-pass seawater systems.
- FILMTEC SW30-380 offers superior economics for desalinating cold water feeds (< 20ºC).
- FILMTEC SW30-380 elements deliver high performance without the use of oxidative treatments which is one reason why FILMTEC elements are more durable and may be cleaned more effectively over a wider pH range (1 - 13) than other RO elements.

Product Specifications

Product	Part Number	Active Area ft^2 (m^2)	Applied Pressure psig (bar)	Permeate Flow Rate gpd (m^3/d)	Stabilized Salt Rejection (%)
SW30-380	113853	380 (35)	800 (55)	9,000 (34)	99.4

1. Permeate flow and salt rejection based on the following test conditions: 32,000 mg/L NaCl, pressure specified above, 77°F (25°C) and 10% recovery.
2. Permeate flows for individual elements may vary -15% to +25%.
3. Minimum salt rejection is 98.8%.
4. Sales specifications may vary as design revisions take place.

Figure 1



	Dimensions – Inches (mm)		
Product	**A**	**B**	**C**
SW30-380	40.0 (1,016)	1.125 (29)	7.9 (201)

1. Refer to FilmTec Design Guidelines for multiple-element systems.
2. SW30-380 fits nominal 8.00-inch (203 mm) I.D. pressure vessel.

1 inch = 25.4 mm

Operating Limits

• Membrane Type	Polyamide Thin-Film Composite
• Maximum Operating Temperature	113°F (45°C)
• Maximum Operating Pressure	1,000 psig (69 bar)
• Maximum Pressure Drop	15 psig (1.0 bar)
• pH Range, Continuous Operation[a]	2 - 11
• pH Range, Short-Term Cleaning (30 min.)[b]	1 - 13
• Maximum Feed Silt Density Index	SDI 5
• Free Chlorine Tolerance[c]	< 0.1 ppm

[a] Maximum temperature for continuous operation above pH 10 is 95°F (35°C).

[b] Refer to Cleaning Guidelines in specification sheet 609-23010.

[c] Under certain conditions, the presence of free chlorine and other oxidizing agents will cause premature membrane failure. Since oxidation damage is not covered under warranty, FilmTec recommends removing residual free chlorine by pretreatment prior to membrane exposure. Please refer to technical bulletin 609-22010 for more information.

Important Information

Proper start-up of reverse osmosis water treatment systems is essential to prepare the membranes for operating service and to prevent membrane damage due to overfeeding or hydraulic shock. Following the proper start-up sequence also helps ensure that system operating parameters conform to design specifications so that system water quality and productivity goals can be achieved.

Before initiating system start-up procedures, membrane pretreatment, loading of the membrane elements, instrument calibration and other system checks should be completed.

Please refer to the application information literature entitled “Start-Up Sequence” (Form No. 609-02077) for more information.

Operation Guidelines

Avoid any abrupt pressure or cross-flow variations on the spiral elements during start-up, shutdown, cleaning or other sequences to prevent possible membrane damage. During start-up, a gradual change from a standstill to operating state is recommended as follows:

- Feed pressure should be increased gradually over a 30-60 second time frame.
- Cross-flow velocity at set operating point should be achieved gradually over 15-20 seconds.
- Permeate obtained from first hour of operation should be discarded.

General Information

- Keep elements moist at all times after initial wetting.
- If operating limits and guidelines given in this bulletin are not strictly followed, the limited warranty will be null and void.
- To prevent biological growth during prolonged system shutdowns, it is recommended that membrane elements be immersed in a preservative solution.
- The customer is fully responsible for the effects of incompatible chemicals and lubricants on elements.
- Maximum pressure drop across an entire pressure vessel (housing) is 50 psi (3.4 bar).
- Avoid permeate-side backpressure at all times.

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