FILMTEC™ Membranes

FILMTEC SW30HR-380 High Rejection Seawater RO Element

Features

The FILMTEC™ SW30HR-380 is a premium grade seawater reverse osmosis element featuring both high active area and high salt rejection to offer the best long-term economics for seawater desalination systems.

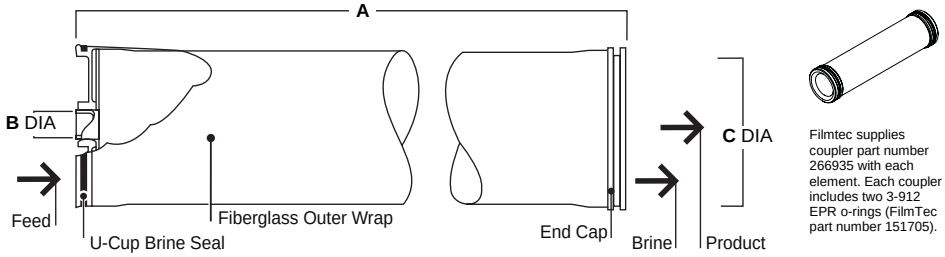
- FILMTEC SW30HR-380 delivers the highest boron rejection to help customers meet World Health Organization (WHO) and other drinking water standards.
- FILMTEC SW30HR-380 elements deliver high performance over their operating lifetime without the use of oxidative post-treatments like many competitive products. This is one reason why FILMTEC elements are more durable and may be cleaned more effectively over a wide pH range than other RO elements.
- Automated, precision fabrication with a greater number of shorter membrane leaves, reduces the overall effect of fouling and maximizes membrane efficiency.

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 (%)
SW30HR-380	135137	380 (35)	800 (55)	6,000 (23)	99.7

1. Permeate flow and salt rejection based on the following test conditions: 32,000 mg/L NaCl, pressure specified above, 77°F (25°C), pH 8 and 8% recovery.
2. Permeate flows for individual elements may vary +/-15%.
3. Minimum salt rejection is 99.6%.
4. Sales specifications may vary as design revisions take place.
5. Feed spacer is 28 mil.

Figure 1



Dimensions – Inches (mm)

Product	A	B	C
SW30HR-380	40.0 (1,016)	1.125 (29)	7.9 (201)

1. Refer to FilmTec Design Guidelines for multiple-element applications and recommended element recovery rates for various feed sources.
2. SW30HR-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[a]	113°F (45°C)
• Maximum Operating Pressure	1,000 psig (69 bar)[d]
• 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.

[d] Operation at pressures up to 1,200 psig (83 bar) is allowable under certain conditions. Consult your Dow representative for advice on applications above 1,000 psig (69 bar).

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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.

FILMTEC™ Membranes
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Notice: The use of this product in and of itself does not necessarily guarantee the removal of cysts and pathogens from water. Effective cyst and pathogen reduction is dependent on the complete system design and on the operation and maintenance of the system.

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