



FILMTEC Membranes

FILMTEC SW30HR-320 High Rejection Seawater RO Element

The FILMTEC™ SW30HR-320 seawater reverse osmosis element is particularly well-suited for seawater sources that have a high fouling potential such as open intakes. The SW30HR-320 element has been designed for effective cleaning of scale, organic compounds and biofilm. This new design incorporates several key features:

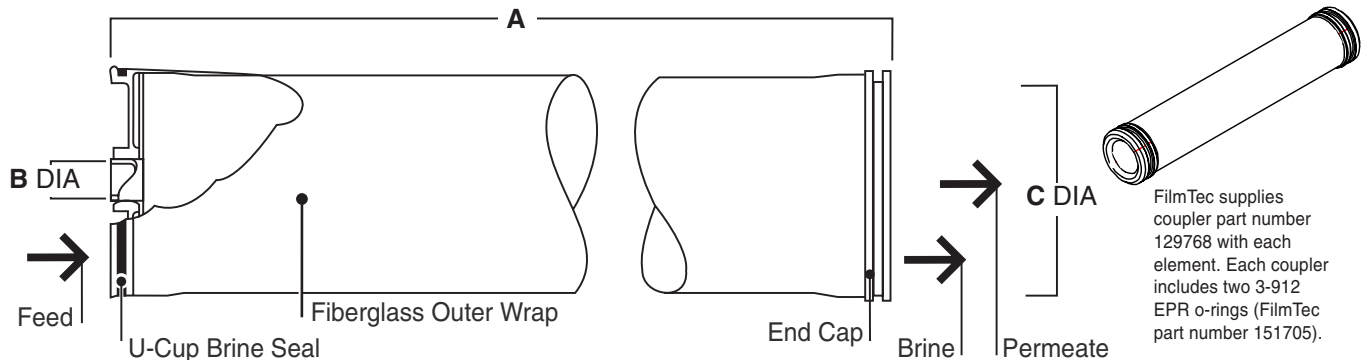
- The industry's thickest feed spacer (34 mil)
- FILMTEC FT30 membrane that has the industry's widest cleaning pH range (pH 1-12)
- Automated, precision fabrication with a greater number of shorter membrane leaves, reduces the overall effect of fouling and maximizes membrane efficiency

Designed to replace the FILMTEC SW30HR-8040, the SW30HR-320 element offers higher salt rejection and higher productivity to help reduce water purification costs.

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-320	99282	320 (30)	800 (55)	5,000 (19)	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. Product specifications may vary slightly as improvements are implemented.
5. Feed spacer is 34 mil.



Product	Dimensions – Inches (mm)		
	A	B	C
SW30HR-320	40.0 (1016)	1.125 (29)	7.9 (201)

6. Refer to FilmTec Design Guidelines for multiple-element systems.
7. SW30HR-320 fits nominal 8-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	1000 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	1–12
Maximum Feed Silt Density Index (SDI)	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 1200 psig (83 bar) is allowable under certain conditions. Consult your Dow representative for advice on applications above 1000 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 "How to

Start Up an RO Membrane System" (Form No. 609-00070) 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 static permeate-backpressure at all times.

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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