Product Data Sheet

DOW FILMTEC™ SW30XLE–440i Element

Seawater Reverse Osmosis Element with *iLEC*™ Interlocking Endcaps

Description

Dow Water & Process Solutions offers various premium seawater reverse osmosis (RO) elements designed to help reduce capital and operation cost of desalination systems. DOW FILMTEC™ Elements combine excellent membrane quality with automated precision fabrication which takes system performance to exceptional levels.

DOW FILMTEC™ SW30XLE–440i Elements offer medium-salinity and medium-temperature feed waters an advanced combination of high productivity and high rejection through extra-low energy consumption and single-pass design. It is also an excellent choice for two-pass seawater designs or high salinity brackish water applications. The combination of high active area and thick feed spacer of the DOW FILMTEC membranes facilitates high productivity and low cleaning frequency which enable sustainable low lifecycle cost. Benefits of the DOW FILMTEC SW30XLE–440i element include:

- High active area of 440 ft^2 (41 m^2) permits low system capital cost by maximizing productivity and enables accurate and predictable system design and operating flux.
- The combination of high active area with thick feed spacer (28 mil) allows low cleaning frequency and high cleaning efficiency.
- Utilization of the distinct *iLEC*™ Interlocking Endcaps helps reduce system operating costs and reduce the risk of O-ring leaks that can cause poor water quality (see Form No. 609-00446 for information on the cost-saving benefits).
- Sustainable high performance over the operating lifetime, because oxidative treatments are not used in membrane production. This is one reason DOW FILMTEC elements are more durable and may be cleaned more effectively over a wider pH range (1 – 13) than most other RO elements, which use oxidative treatments.
- Effective use in permeate staged seawater desalination systems without impairing the performance of the downstream stage.

Product Type

Spiral-wound element with polyamide thin-film composite membrane

Product Specifications

DOW FILMTEC™ Element	Active Area (ft^2)	Active Area (m^2)	Feed Spacer Thickness (mil)	Permeate Flow Rate (GPD)	Permeate Flow Rate (m^3/d)	Stabilized Boron Rejection (%)	Stabilized Salt Rejection (%)
SW30XLE–440i	440	41	28	9,900	37.4	91.5	99.8

1. The above benchmark values are based on the following test conditions: 32,000 ppm NaCl, 5 ppm boron, 800 psi (5.5 MPa), 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. Stabilized salt rejection is generally achieved within 24 – 48 hours of continuous use; depending upon feedwater characteristics and operating conditions.
5. Product specifications may vary slightly as improvements are implemented.
6. Active area guaranteed ± 5%. Active area as stated by Dow Water & Process Solutions is not comparable to the nominal membrane area figure often stated by some element suppliers. Measurement method described in Form No. 609-00434.

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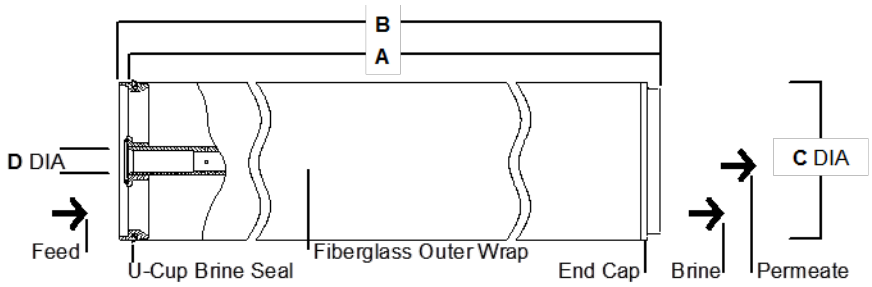
Element Dimensions



	A		B		C		D	
DOW FILMTEC™ Element	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
SW30XLE–440i	40.0	1,016	40.5	1,029	7.9	201	1.125 ID	29 ID

1. Refer to Dow Water & Process Solutions Design Guidelines for multiple-element applications. 1 inch = 25.4 mm
2. Element to fit nominal 8-inch (203-mm) I.D. pressure vessel.
3. Individual elements with *iLEC*™ Interlocking Endcaps measure 40.5 inches (1,029 mm) in length (B). The net length (A) of the elements when connected is 40.0 inches (1,016 mm).

Operating and Cleaning Limits

Maximum Operating Temperature [a]	113°F (45°C)
Maximum Operating Pressure	1,200 psig (83 bar)
Maximum Element 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)	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 guidelines in "Cleaning Procedures" for more information.

[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, Dow Water & Process Solutions recommends removing residual free chlorine by pretreatment prior to membrane exposure. Please refer to technical bulletin "Dechlorinating Feedwater" for more information.

Additional Important Information

Before use or storage, review these additional resources for important information:

- Usage Guidelines for DOW FILMTEC™ 8" Elements
- System Operation: Initial Start-Up
- Handling, Preservation and Storage

Regulatory Note

These membranes may be subject to drinking water application restrictions in some countries; please check the application status before use and sale.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

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Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support.

DOW 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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