DuPont™ FilmTec™ elements

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Product Data Sheet | Reverse Osmosis

FilmTec™ Seawater Elements

Seawater RO Elements for Small Commercial Systems

Key Features

- FilmTec™ Membranes offer the highest productivity while maintaining excellent salt rejection.
- FilmTec™ SW30 Membrane Elements have the highest flow rates available to meet the water demands of both sea-based and land-based desalinators.
- FilmTec™ SW30 Elements may also be operated at lower pressure to reduce pump size, cost and operating expenses.
- Improved FilmTec™ Seawater Membrane combined with automated, precision element fabrication result in the most consistent product performance available.

Key Applications

- Commercial Solutions

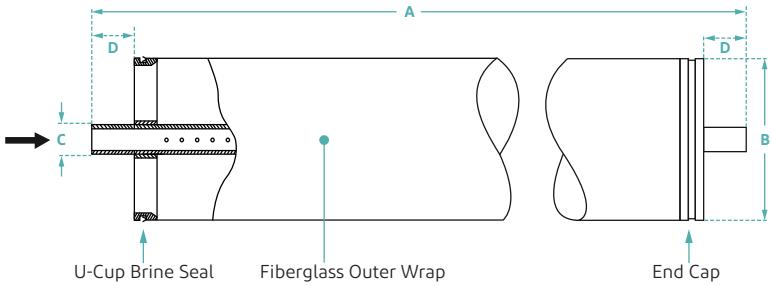


Typical Properties

Product	Part Number	Maximum Feed Flow Rate gpm (m^3/h)	Applied Pressure psig (bar)	Permeate Flow Rate gpd (m^3/d)	Stabilized Salt Rejection (%)
FilmTec™ SW30-2514 element	80733	6 (1.4)	800 (55)	150 (0.6)	99.4
FilmTec™ SW30-2521 element	80734	6 (1.4)	800 (55)	300 (1.1)	99.4
FilmTec™ SW30-2540 element	12082989	6 (1.4)	800 (55)	700 (2.6)	99.7
FilmTec™ SW30-4021 element	80740	16 (3.6)	800 (55)	800 (3.0)	99.4
FilmTec™ SW30-4040 element	12082966	16 (3.6)	800 (55)	1,950 (7.4)	99.7

1. Permeate flow and salt rejection based on the following test conditions: 32,000 ppm NaCl, pressure specified above, 77°F (25°C) and the following recovery rates: FilmTec™ SW30-2514 – 2%, FilmTec™ SW30-2521 & FilmTec™ SW30-4021 – 5%, FilmTec™ SW30-2540 & FilmTec™ SW30-4040 – 8%.
2. Flow rates for individual elements may vary but will be no more than 20% below the value shown.
3. Stabilized salt rejection is generally achieved within 24-48 hours of continuous use; depending upon feedwater characteristics and operating conditions
4. Sales specifications may vary as design revisions take place.

Element Dimensions





FilmTec™ coupler part number 89055 is ordered separately for each element. Each coupler includes two 2-210 EPR O-rings (part number 89255).

Dimensions - inches (mm) 1 inch = 25.4 mm					
	Small commercial			**Large commercial**	
	FilmTec™ SW30-2514	FilmTec™ SW30-2521	FilmTec™ SW30-4021	FilmTec™ SW30-2540	FilmTec™ SW30-4040
A	14.0 (356)	21.0 (533)	21.0 (533)	40.0 (1,016)	40.0 (1,016)
B	2.4 (61)	2.4 (61)	3.9 (99)	2.4 (61)	3.9 (99)
C	0.75 (19)	0.75 (19)	0.75 (19)	0.75 (19)	0.75 (19)
D	1.19 (30.2)	1.19 (30.2)	1.05 (26.7)	1.19 (30)	1.05 (26.7)

1. FilmTec™ SW30-2514, FilmTec™ SW30-2521 and FilmTec™ SW30-2540 Elements fit nominal 2.5-inch I.D. pressure vessels.
2. FilmTec™ SW30-4021 and FilmTec™ SW30-4040 Elements fit nominal 4-inch I.D. pressure vessel.

Form No. 45-D01519-en, Rev. 10
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Suggested Operating Conditions

Membrane Type	Polyamide Thin-Film Composite
Maximum Operating Temperature[1]	113°F (45°C)
Maximum Operating Pressure	1,200 psi (83 bar)
Maximum Pressure Drop	
Per Element	15 psi (1.0 bar)
Per Pressure Vessel	50 psi (3.5 bar)
pH Range	
Continuous Operation[1]	2 - 11
Short-Term Cleaning (30 min.)[2]	1 - 13
Maximum Feed Silt Density Index (SDI)	SDI 5
Free Chlorine Tolerance[4]	< 0.1 ppm

1. Maximum temperature for continuous operation above pH 10 is 95°F (35°C). Consult your DuPont representative for advice on applications above 95°F (35°C). Relevant information regarding operation at high temperature and pressure: FilmTec™ Seawater Elements Operating Limits (Form No. 45-D00691-en) and Shimming Elements (Form No. 45-D01057-en).
2. Refer to Cleaning Procedures for FilmTec™ Elements (Form No. 45-D01696-en).
3. For recommended feed and permeate flow rates, flux and recovery for various feed sources, refer to Membrane System Design Guidelines for midsize FilmTec™ elements (Form No. 45-D01588-en).
4. Oxidation damage is not covered under warranty, DuPont recommends removing residual free chlorine by pretreatment prior to membrane exposure. Please refer to Dechlorinating Feedwater (Form No. 45-D01569-en) for more information.

Important General Information

- Keep elements moist at all times after initial wetting.
- For successful operation of Reverse Osmosis (RO) and Nanofiltration (NF) membrane systems, the operation must follow the guidelines provided in the FilmTec™ Reverse Osmosis / Nanofiltration Elements Operation Excellence and Limiting Conditions Tech Fact (Form No. 45-D04388-en).
- 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.
- Avoid static permeate-side backpressure at all times.
- Permeate obtained from the first hour of operation should be discarded.
- 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.

Please consider good operating practices for the optimal performance of the Reverse Osmosis membrane elements to assure damage free operation:

1. Loading of Pressure Vessels – Preparation & Element Loading (Form No. 45-D01602-en)
2. System Operation, including plant Start-Up Sequence (Form No. 45-D01609-en) and RO & NF Systems Shutdown (Form No. 45-D01613-en)
3. Handling, Preservation, and Storage (Form No. 45-D03716-en)

Full information of plant design, system operation, and troubleshooting is given in the FilmTec™ Reverse Osmosis Membranes Technical Manual (Form No. 45-D01504-en).

Regulatory Note

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

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