DuPont™ FilmTec™ elements

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Product Data Sheet | Reverse Osmosis

FilmTec™ Brackish Water Elements

Brackish Water RO Elements for Small Commercial Systems



Key Features

- FilmTec™ Membranes are available in a variety of sizes to meet a wide range of space requirements.
- FilmTec™ XLE extra low energy elements operate at the lowest pressure in the industry, resulting in lower energy costs and enabling system builders to use lower cost components.

Key Applications

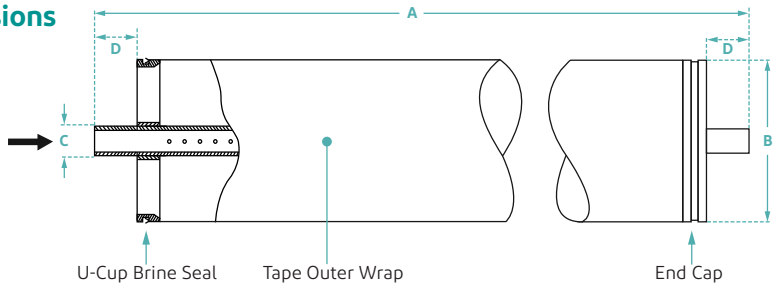
- Commercial Solutions

Typical Properties

Product	Part Number	Maximum Feed Flow Rate gpm (m³/h)	Applied Pressure psi (bar)	Permeate Flow Rate gpd (m³/d)	Stabilized Salt Rejection (%)
FilmTec™ TW30-2026 element	80635	5 (1.1)	225 (15.5)	220 (0.83)	99.5
FilmTec™ TW30-2514 element	80639	6 (1.4)	225 (15.5)	200 (0.76)	99.5
FilmTec™ TW30-2521 element	80641	6 (1.4)	225 (15.5)	325 (1.23)	99.5
FilmTec™ XLE-2521 element	154530	6 (1.4)	100 (6.9)	365 (1.38)	99.0
FilmTec™ TW30-4014 element	80605	14 (3.2)	225 (15.5)	525 (1.99)	99.5
FilmTec™ TW30-4021 element	80608	14 (3.2)	225 (15.5)	900 (3.41)	99.5
FilmTec™ XLE-4021 element	154540	14 (3.2)	100 (6.9)	1,025 (3.88)	99.0

1. Permeate flow and salt rejection based on the following test conditions: TW30 elements are tested on a 2,000 ppm NaCl feed stream, XLE performance based on a 500 ppm NaCl feed stream, pressure specified above, 77°F (25°C) and the following recovery rates; FilmTec™ TW30-2026 – 10%, FilmTec™ TW30-2521, FilmTec™ XLE-2521, FilmTec™ TW30-4021 and FilmTec™ XLE-4021 – 8%, FilmTec™ TW30-2514 and FilmTec™ TW30-4014 – 5%.
2. Permeate flows for individual elements may vary +/-20%.
3. 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)					
	FilmTec™ TW30-2026	FilmTec™ TW30-2521 FilmTec™ XLE-2521	FilmTec™ TW30-4021 FilmTec™ XLE-4021	FilmTec™ TW30-2514	FilmTec™ TW30-4014
A	26.0 (660)	21.0 (533)	21.0 (533)	14.0 (356)	14.0 (356)
B	1.8 (46)	2.4 (61)	3.9 (99)	2.4 (61)	3.9 (99)
C	0.68 (17)	0.75 (19)	0.75 (19)	0.75 (19)	0.75 (19)
D	1.18 (30)	1.19 (30.2)	1.05 (26.7)	1.19 (30)	1.05 (26.7)

1. FilmTec™ TW30-2026 Element has double O-rings on each end of the permeate tube. Couplers for 0.68 inch (17 mm) permeate tubes are not sold by DuPont.
2. FilmTec™ TW30-2026 Elements fit nominal 2.0 inch pressure vessels. FilmTec™ TW30-2514, FilmTec™ TW30-2521 and FilmTec™ XLE-2521 Elements fit nominal 2.5 inch I.D. pressure vessels. FilmTec™ TW30-4014, FilmTec™ TW30-4021 and FilmTec™ XLE-4021 Elements fit nominal 4 inch I.D. pressure vessels.

Form No. 45-D01525-en, Rev. 4
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Suggested Operating Conditions

Membrane Type	Polyamide Thin-Film Composite
Maximum Operating Temperature[1]	113°F (45°C)
Maximum Operating Pressure	600 psi (41 bar)
Maximum Pressure Drop	
Per Element	13 psi (0.9 bar)
Per Pressure Vessel (Maximum 2 Elements)	30 psi (2.1 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).
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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