Product Data Sheet

FilmTec™ Fortilife™ CR100 Element

Highly Durable, Contaminant Resistant, Biofouling Resistant, Brackish Water RO Element

Description

The FilmTec™ Fortilife™ product family offers solutions for industrial-users to improve water efficiency by incorporating membrane and element design innovations that enable systems to clean-less, recover-more, and waste-less.

The FilmTec™ Fortilife™ CR100 Element is an advanced element design for treating and recycling highly biofouling prone waters, such as wastewater. It utilizes an ultra-low pressure drop element design and a durable, fouling resistant, and cleanable membrane chemistry that provides outstanding solute rejection over a long element lifetime. These benefits are available with either standard (CR100) or iLEC™ (CR100i) end cap designs.

Advantages:

- Up to 10% less energy consumption at the same water productivity.
- Up to 50% reduction in the number of cleanings.
- Durable membrane with a cleaning tolerance over a wide pH range (pH 1-13) for consistent, long-lasting lifetime.

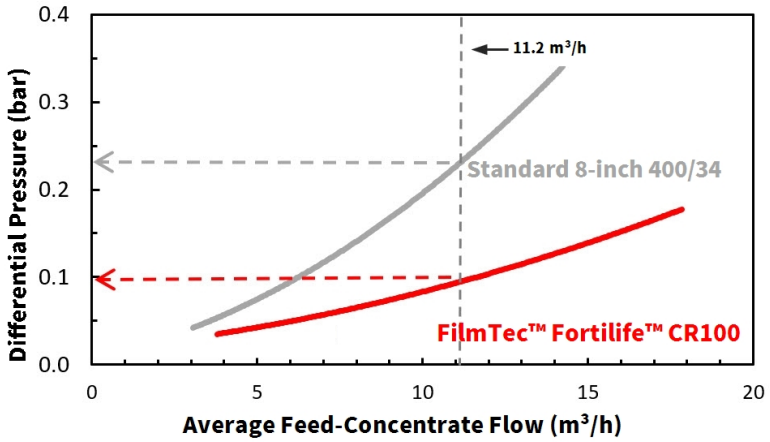

Figure 1: Element differential pressure as a function of flow rate for FilmTec™ Fortilife™ CR100 Elements vs. standard BWRO elements

Product Type

Spiral-wound element with polyamide thin-film composite membrane

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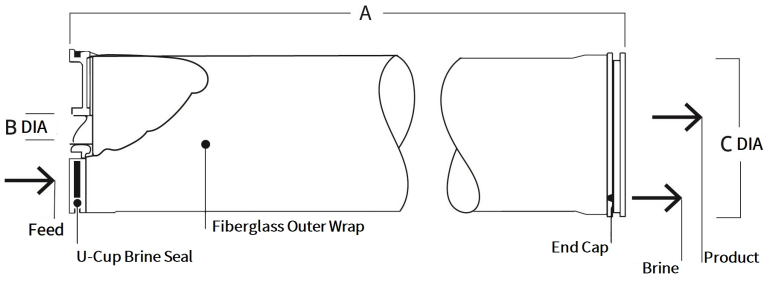
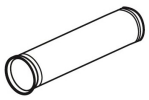
Typical Properties

FilmTec™ Element	Active Area ft² (m²)	Permeate Flow Rate gpd (m³/d)	Minimum Salt Rejection (%)	Stabilized Salt Rejection (%)	Element dP typical (bar)[5]
FilmTec™ Fortilife™ CR100	400 (37)	11,500 (43.5)	99.4	99.7	0.1

1. Permeate flow and salt (NaCl) rejection is based on the following standard test conditions: 2,000 ppm NaCl, 225 psi (15.5 bar), 77°F (25°C), pH 8 and 15% recovery.
2. Flow rates for individual elements may vary but will be no more than +/- 15%.
3. Sales specifications may vary as design revisions take place.
4. Active area guaranteed +/-3%. Active area as stated by DuPont Water Solutions is not comparable to nominal membrane area often stated by some manufacturers.
5. Element dP (differential pressure) is a typical value for an element operated with a permeate flow of 11,500 gpd and 15% recovery (average feed-concentrate flow: 11.2 m^3/h)

Element Dimensions





FilmTec™ supplies coupler part number 313198 with each element.
Each coupler includes two 3-912 EPR O-rings (part number 151705).

Dimensions – inches (mm)				1 inch = 25.4 mm
FilmTec™ Element	Feed Spacer (mil)	A inch (mm)	B inch (mm)	C inch (mm)
FilmTec™ Fortilife™ CR100	34	40.0 (1,016)	1.125 ID (29)	7.9 (201)

1. Refer to FilmTec™ Design Guidelines for multiple-element systems of 8-inch elements (Form No. 45-D01695-en).
2. Element to fit nominal 8-inch (203 mm) I.D. pressure vessel

Operating and Cleaning Limits

Membrane Type	Polyamide Thin-Film Composite
Maximum Operating Temperature[a]	113 °F (45 °C)
Maximum Operating Pressure	600 psig (41 bar)
Maximum Element Pressure Drop	15 psig (1.0 bar)
pH Range	
Continuous Operation[a]	2 - 11
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 FilmTec™ Cleaning Guidelines (Form No. 45-D01696-en) for more information.
c. Under certain conditions, the presence of free chlorine and other oxidizing agents will cause premature failure. Since 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.

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Additional Important Information

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

- Usage Guidelines for FilmTec™ 8" Elements (Form No. 45-D01706-en)
- Start-Up Sequence (Form No. 45-D01609-en)
- Storage and Shipping of New FilmTec™ Elements (Form No. 45-D01633-en)

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. 45-D01609-en) 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.

Please refer to FilmTec™ Reverse Osmosis Membranes Technical Manual (Form No. 45-D01504-en).

Product Stewardship

DuPont 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 DuPont products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

DuPont strongly encourages its customers to review both their manufacturing processes and their applications of DuPont products from the standpoint of human health and environmental quality to ensure that DuPont products are not used in ways for which they are not intended or tested. DuPont personnel are available to answer your questions and to provide reasonable technical support. DuPont product literature, including safety data sheets, should be consulted prior to use of DuPont products. Current safety data sheets are available from DuPont.

Please be aware of the following:

- 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.
- Permeate obtained from the first hour of operation should be discarded.

Have a question? Contact us at:

www.dupont.com/water/contact-us

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