



## DOW FILMTEC™ FORTILIFE™ XC80 Element

Push TDS Limit and Maximize Water Recovery in Brine Concentration

### Description

The DOW FILMTEC™ FORTILIFE™ product line offers industrial users a reliable and highly efficient option to help solve their most difficult water challenges, such as wastewater reuse and Minimal Liquid Discharge (MLD).

Key benefits of the DOW FILMTEC™ FORTILIFE™ XC80 element include:

- The ability to achieve reject Total Dissolved Solids (TDS) level > 80,000 ppm within standard reverse osmosis (RO) operating limits, helping lower brine volume and maximize water recovery in the brine concentration step
- Improved cost-efficiency of the overall MLD or Zero Liquid Discharge (ZLD) system due to brine reduction to downstream thermal treatment
- Lower reverse osmosis (RO) energy consumption
- Slower permeate flow rate decline enabled by a highly fouling-resistant membrane
- Robust membrane and reliable long-term performance
- The wide pH range for cleanings (pH 1 – 13) allows effective cleaning in severe fouling
- Support from highly specialized and experienced technical experts

These industry-leading benefits result from a distinct combination of:

- A highly permeable, fouling resistant membrane
- An oxidative-free membrane manufacturing process

### Exemplary Brine Concentration Projections

DOW FILMTEC™ Element	P <sub>r</sub> (bar)	Feed TDS (ppm)	Concentrate	Ave Op. flux (LMH)	Recovery (%)
			TDS (ppm)		
FORTILIFE™ XC80	70	60,000	77,000	13	23

1. Results in the table are based from a ROSA simulation of a single 3 element pressure vessel operated at 25 C, pH 8, feed flow = 7 m<sup>3</sup>/h and a FF = 0.85, with 60,000ppm NaCl feed.
2. No warranty is provided for the application of this information since use conditions and applicable laws may differ from one location to another and may change with time.

### Product Type

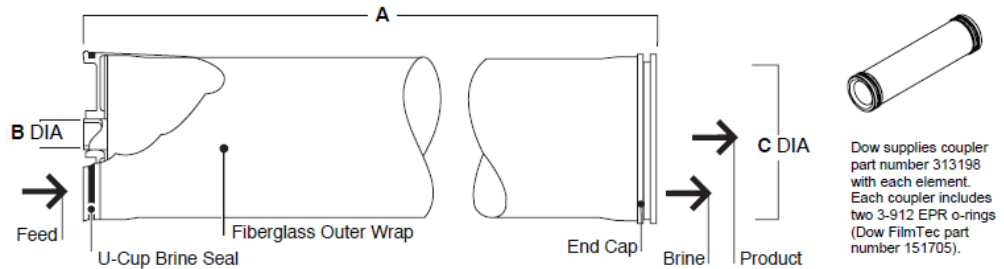
Spiral-wound element with polyamide thin-film composite membrane

## Product Specifications

DOW FILMTEC™ Element	Active Area		Feed Spacer	Permeate Flow Rate		Typical	Minimum Salt Rejection (%)
	(ft <sup>2</sup> )	(m <sup>2</sup> )	Thickness (mil)	(GPD)	(m <sup>3</sup> /d)	Stabilized Salt Rejection (%)	
FORTILIFE™ XC80	440	41	28	9,050	34.2	99.47	99.25

- The above values are based on the following testing conditions: 32,000 ppm NaCl, 600 psi (4.1 MPa), 77°F (25°C), pH 8, 8% recovery.
- Flow rates for individual elements may vary but will be no more than ± 15%.
- Sales specifications may vary as design revisions take place.
- Active area guaranteed ± 3%. Active area as stated by Dow Water & Process Solutions is not comparable to nominal membrane area often stated by some manufacturers. Refer to ["How to Evaluate the Active Membrane Area of Seawater Reverse Osmosis Elements"](#) for a description of the measurement method.

## Element Dimensions



DOW FILMTEC™ Element	A		B		C	
	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
FORTILIFE™ XC80	40.0	1,106	1.125 ID	29 ID	7.9	201

- Refer to Dow Water & Process Solutions Design Guidelines for multiple-element applications. 1 inch = 25.4 mm
- Element to fit nominal 8-inch (203-mm) I.D. pressure vessel.

## Operating and Cleaning Limits

Maximum Operating Temperature <sup>a</sup>	113°F (45°C)
Maximum Operating Pressure <sup>b</sup>	1,200 psig (83 bar)
Maximum Element Pressure Drop	15 psig (1.0 bar)
pH Range, Continuous Operation <sup>a</sup>	2 – 11
pH Range, Short-Term Cleaning (30 min.) <sup>c</sup>	1 – 13
Maximum Feed Silt Density Index (SDI)	SDI 5
Free Chlorine Tolerance <sup>d</sup>	< 0.1 ppm

<sup>a</sup> Maximum temperature for continuous operation above pH 10 is 95°F (35°C).

<sup>b</sup> Maximum pressure at 25 C. Consult tech service specialist for limits at high temperature.

<sup>c</sup> Refer to guidelines in ["Cleaning Procedures"](#) for more information.

<sup>d</sup> 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](#)

## 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.

## 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.

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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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