



## DOW FILMTEC™ ECO PRO-440 Element

### Description

Ideal for: reverse osmosis plant managers and operators dealing with controlled pre-treatment waters and seeking advanced membrane treatment with high water purity and low energy consumption.

DOW FILMTEC™ ECO PRO-440:

- Offers high salt-rejection at low pressure
- Delivers excellent silica, boron, nitrate, TOC and ammonium rejection
- Provides increased active area with the most effective cleaning performance, robustness and durability due to its widest cleaning pH range (1-13) and chemical tolerance and the support of Dow technical representatives



### Product Type

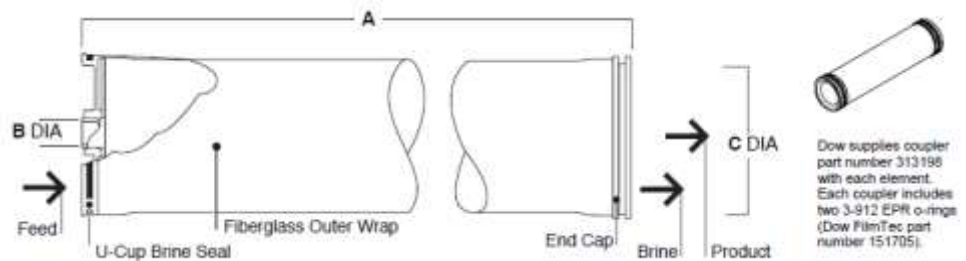
Spiral-wound element with polyamide thin-film composite membrane

### Product Specifications

DOW FILMTEC™ Element	Active Area		Feed Spacer Thickness (mil)	Permeate Flow Rate		Typical Stabilized Salt Rejection (%)	Minimum Salt Rejection (%)
	(ft <sup>2</sup> )	(m <sup>2</sup> )		(GPD)	(m <sup>3</sup> /d)		
ECO PRO-440	440	41	28	12,650	48	99.7	99.4

1. Permeate flow and salt (NaCl) rejection based on the following standard test conditions: 2,000 ppm NaCl, 150 psi (10.3 bar), 77°F (25°C), pH 8, 15% recovery.
2. Flow rates for individual elements may vary but will be no more than ±15%.
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.
5. 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. Measurement method described in Form No. 609-00434.

### Element Dimensions



DOW FILMTEC™ Element	A		B		C	
	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
ECO PRO-440	40.0	1,016	1.125 ID	29 ID	7.9	201

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.

## Operating and Cleaning Limits

Maximum Operating Temperature <sup>a</sup>	113°F (45°C)
Maximum Operating Pressure	600 psig (41 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>b</sup>	1 – 13
Maximum Feed Silt Density Index (SDI)	SDI 5
Free Chlorine Tolerance <sup>c</sup>	< 0.1 ppm

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

<sup>b</sup> Refer to Cleaning Guidelines in specification sheet 609-23010.

<sup>c</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](#)

## 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.

## 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 Contact Dow Water & Process Solutions:

North America: 1-800-447-4369  
Latin America: (+55) 11-5188-9222  
Europe: +800-3-694-6367  
Italy: +800-783-825  
South Africa: +0800 99 5078  
Pacific: +800 7776 7776  
China: +400 889-0789

<http://www.dowwaterandprocess.com>

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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