Product Data Sheet

FilmTec™ BW30-400 Membranes

High Rejection, High Surface Area Brackish Water RO Element

Description

The FilmTec™ BW30-400 is the product of choice when the highest quality permeate is required. It was the first 400 square foot membrane element on the market and continues to be widely used in new equipment and retrofits where system capital and productivity are factors.

- DuPont's superior automated manufacturing technology results in the most consistent performance element-to-element and year-after-year.
- FilmTec™ BW30-400 Elements deliver high flow and high rejection without being chlorinated during the manufacturing process. This is one reason why FilmTec™ Elements are more durable and may be cleaned over a wider pH range (pH 1-13) than other RO elements.
- With more than a decade of proven performance, FilmTec™ BW30-400 is the product you can rely on for years of trouble-free operation.

Product Type

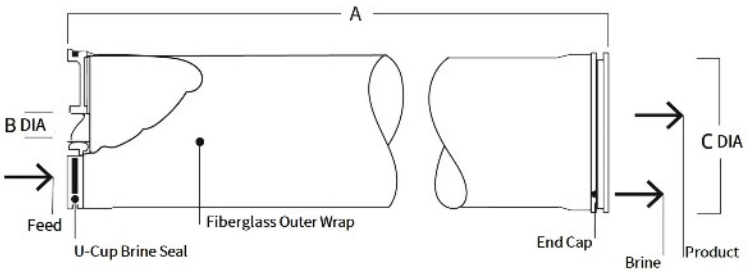
Spiral-wound element with polyamide thin-film composite membrane

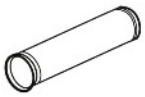
Typical Properties

FilmTec™ Element	Active area ft^2 (m^2)	Feed spacer thickness (mil)	Permeate flow rate gpd (m^3/d)	Stabilized salt rejection (%)	Minimum salt rejection (%)
BW30-400	400 (37)	28	10,500 (40)	99.5	99.0

1. Permeate flow and salt rejection based on the following standard 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% below the value shown.
3. Sales specifications may vary as design revisions take place.
4. Active area guaranteed +/-3%. Active area as stated by DuPont is not comparable to nominal membrane area often stated by some manufacturers.

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	**A**	**B**	**C**
BW30-400	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) and recommended element recovery rates for various feed sources.
2. Element to fit nominal 8.0-inch (203 mm) I.D. pressure vessel.

Form No. 45-D01505-en, Rev. 4
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Suggested Operating Conditions

Membrane Type	Polyamide Thin-Film Composite
Maximum Operating Temperature[a]	113°F (45°C)
Maximum Operating Pressure	600 psig (41 bar)
Maximum Pressure Drop	15 psig (1.0 bar)
pH Range	
Continuous Operation[a]	2 - 11
Short-Term Cleaning (30 min.)[b]	1 - 13
Maximum Feed Flow	70 gpm (15.9 m^3/hr)
Maximum Feed Silt Density Index	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 FilmTec™ Cleaning Guidelines (Form No. 45-D01696-en).
c. 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, 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 Information

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.

General Information

- Keep elements moist at all times after initial wetting.
- If operating limits and guidelines given in this bulletin are not strictly followed, the FilmTec™ Reverse Osmosis and Nanofiltration Three-Year Prorated Limited Warranty (Form No. 45-D00903-en) will be null and void.
- 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.
- Maximum pressure drop across an entire pressure vessel (housing) is 50 psi (3.4 bar).
- Avoid static permeate-side backpressure at all times.

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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.

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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