



## DOW FILMTEC™ Membranes

DOW FILMTEC BW30-400-IG Industrial Grade, High Rejection Brackish Water RO Element

### Features

The DOW FILMTEC™ Industrial Grade, BW30-400-IG high rejection brackish water reverse osmosis (RO) element is designed for use in industrial water treatment applications. It maintains the same flow and rejection performance of the BW30-400 elements, but does not carry the ANSI standard 61 or KIWA certifications, offering a more cost effective option for industrial applications.

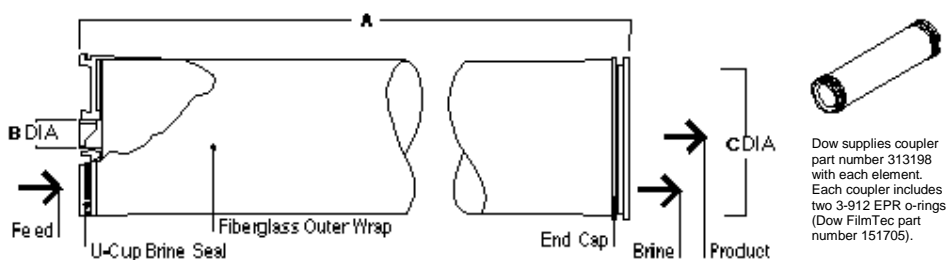
- BW30-400-IG elements may be cleaned over a wide pH range (pH 1-13).
- The BW30-400-IG is a drop-in replacement for the BW30-400 in systems that do not require drinking water certifications.

### Product Specifications

Product	Part number	Active area ft <sup>2</sup> (m <sup>2</sup> )	Feed spacer thickness (mil)	Permeate flow rate gpd (m <sup>3</sup> /d)	Stabilized salt rejection (%)	Minimum salt rejection (%)
BW30-400-IG	369695	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 +/-5%.

Figure 1



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

Product	Dimensions - inches (mm)		
	A	B	C
BW30-400-IG	40.0 (1,016)	1.125 ID (29)	7.9 (201)

1. Refer to Dow FilmTec Design Guidelines for multiple-element applications and recommended element recovery rates for various feed sources.
  2. Element to fit nominal 8.0-inch (203 mm) I.D. pressure vessel.
- 1 inch = 25.4 mm

### Operating Limits

- |  |                                |
|--|--------------------------------|
| • Membrane Type  | Polyamide Thin-Film Composite  |
| • Maximum Operating Temperature <sup>a</sup>           | 113°F (45°C)                   |
| • Maximum Operating Pressure                           | 600 psig (41 bar)              |
| • Maximum 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 Flow                                    | 85 gpm (19 m <sup>3</sup> /hr) |
| • Maximum Feed Silt Density Index                      | 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 recommends removing residual free chlorine by pretreatment prior to membrane exposure. Please refer to technical bulletin 609-22010 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. 609-02077) 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.
- Permeate obtained from first hour of operation should be discarded.

## 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 DOW™ FILMTEC™ Reverse Osmosis and Nanofiltration Three-Year Prorated Limited Warranty (Form No. 609-35010) will be null and void. Please refer to the Limited Warranty for more information.
- To prevent biological growth during prolonged system shutdowns, it is recommended that membrane elements be immersed in a storage 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.

**DOW FILMTEC™ Membranes**  
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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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