



Product Data Sheet

**DOW FILMTEC™ Membranes**

DOW FILMTEC Fibreglassed Elements for Light Industrial Systems

**Features**

DOW FILMTEC™ brackish water reverse osmosis membrane elements provide consistent system performance in light industrial applications.

- DOW FILMTEC LE-4040 offers high performance at low pressure resulting in less energy usage and lower costs.
- DOW FILMTEC BW30-4040 is an industry standard for reliable operation and production of high quality water.
- DOW FILMTEC BW30-2540 elements are designed for systems smaller than 1 gpm (0.2 m<sup>3</sup>/h) offering a hard shell exterior for extra strength.

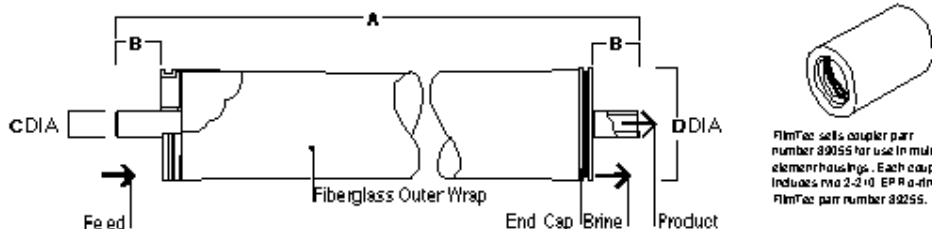
Elements with a hard shell exterior are recommended for systems with multiple-element housings containing three or more membranes, as they are designed to withstand higher pressure drops.

**Product Specifications**

Product	Part Number	Feed Spacer Thickness (mil)	Permeate Flow Rate gpd (m <sup>3</sup> /d)	Stabilized Salt Rejection %
LE-4040	275173	34	2,500 (9.5)	99.0
BW30-4040	80783	34	2,400 (9.1)	99.5
BW30-2540	80766	28	1,000 (3.8)	99.5

1. Permeate flow and salt rejection based on the following test conditions: 2,000 ppm NaCl, applied pressure: 150 psig (10.3 bar) for LE-4040 and 225 psig (15.5 bar) for BW30-4040 and BW30-2540, 77°F (25°C) and 15% recovery.
2. Permeate flows for individual elements may vary +/-20%.
3. LE-4040 replaces BW30LE-4040.

**Figure 1**



Dimensions – inches (mm)

1 inch = 25.4 mm

Product	A	B	C	D
LE-4040	40.0 (1,016)	1.05 (26.7)	0.75 (19)	3.9 (99)
BW30-4040	40.0 (1,016)	1.05 (26.7)	0.75 (19)	3.9 (99)
BW30-2540	40.0 (1,016)	1.19 (30.2)	0.75 (19)	2.4 (61)

1. Refer to DOW FILMTEC Design Guidelines for multiple-element systems.
2. BW30-2540 elements fit nominal 2.5-inch I.D. pressure vessel. BW30LE-4040 and BW30-4040 elements fit nominal 4-inch I.D. pressure vessel.

## Operating Limits

Membrane Type	Polyamide Thin-Film Composite
Maximum Operating Temperature <sup>a</sup>	113°F (45°C)
Maximum Operating Pressure	600 psi (41 bar)
Maximum Feed Flow Rate	
4040 Elements	16 gpm (3.6 m <sup>3</sup> /h)
2540 Elements	6 gpm (1.4 m <sup>3</sup> /h)
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 Silt Density Index (SDI)	SDI 5
Free Chlorine Tolerance <sup>c</sup>	< 0.1 ppm

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

b. Refer to Cleaning Guidelines in specification sheet 609-23010.

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, DOW FILMTEC 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.

Please refer to the product technical manual.

## 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 limited warranty will be null and void. Refer to DOW FILMTEC™ Reverse Osmosis and Nanofiltration Element Three-Year Prorated Limited Warranty (Form No. 609-35010)
- 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

**Regulatory Note**

These membranes may be subject to drinking water application restrictions in some countries: please check the application status before use and sale.

**Storage**

Refer to [609-02103](#) for further information.

**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 product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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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