Product Data Sheet

DOW FILMTEC™ Membranes

DOW FILMTEC Tape-Wrapped 2540 Elements for Commercial Applications

Features

A complete range of DOW FILMTEC™ 2540-size elements is available to meet a wide variety of customer needs for commercial applications, from high purity water to one of the lowest total system costs.

- DOW FILMTEC XLE-2540 is one of the most productive, lowest pressure RO membranes available, offering one of the lowest total system cost.
- DOW FILMTEC LP-2540 offers high quality water at low pressure operation. The LP-2540 replaces many "first generation" low pressure membrane elements and can purify more water in many older systems, especially on cold water feeds.
- DOW FILMTEC TW30-2540 is an industry standard for reliable operation and production of high quality water.

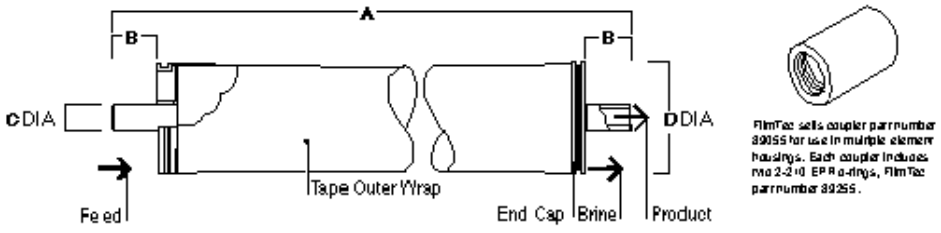
Tape-wrapped elements are built with the same high quality membranes and materials of construction as industrial elements, without the hard outershell. This makes them economical for commercial systems with one or two elements per housing.

Product Specifications

Product	Part Number	Feed Spacer Thickness (mil)	Permeate Flow Rate gpd (m^3/d)	Stabilized Salt Rejection %
XLE-2540	154543	28	850 (3.2)	99.0
LP-2540	231653	28	1,000 (3.8)	99.2
TW30-2540	80643	28	1,000 (3.8)	99.5

1. Permeate flow and salt rejection based on the following test conditions: 77°F (25°C), 15% recovery and applied pressure: 100 psig (6.9 bar) for XLE-2540, 145 psig (10 bar) for LP-2540 and 225 psig (15.5 bar) for TW30-2540. TW30-2540 is tested on a 2,000 ppm NaCl feed stream. LP-2540 and XLE-2540 are tested on a 500 ppm NaCl feed stream.
2. Permeate flows for individual elements may vary +/-20%.
3. LP-2540 can replace TW30HP-2540 for low pressure operation.

Figure 1



Dimensions – inches (mm) **1 inch = 25.4 mm**

Product	A	B	C	D
XLE-2540	40.0 (1,016)	1.19 (30.2)	0.75 (19)	2.4 (61)
LP-2540	40.0 (1,016)	1.19 (30.2)	0.75 (19)	2.4 (61)
TW30-2540	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. TW30-2540, LP-2540 and XLE-2540 elements fit nominal 2.5-inch I.D. pressure vessels.

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Operating Limits

Membrane Type	Polyamide Thin-Film Composite
Maximum Operating Temperature[a]	113°F (45°C)
Maximum Operating Pressure	600 psig (41 bar)
Maximum Feed Flow Rate	6 gpm (1.4 m^3/hr)
Maximum Pressure Drop	13 psig (0.9 bar)
pH Range, Continuous Operation[a]	2 - 11
pH Range, Short-Term Cleaning (30 min.)[b]	1 - 13
Maximum Feed Silt Density Index (SDI)	SDI 5
Free Chlorine Tolerance[c]	<0.1 ppm

a. Maximum temperature for continuous operation above pH 10 is 95ºF (35ºC).
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

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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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