Dow Liquid Separations

FILMTEC Elements

Reverse Osmosis and Nanofiltration Elements for Consumer and Commercial Water Purification Systems

FILMTEC elements provide proven high performance for consistent, reliable water purification

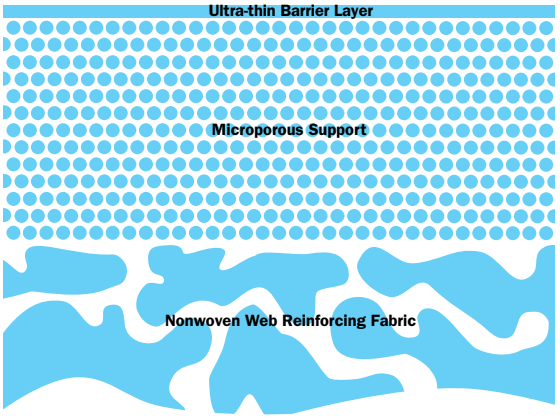
FILMTEC® reverse osmosis and nanofiltration elements have been installed in more water treatment systems—in more applications—than any other elements. Their consistency and reliability in actual field service have been documented for more than a decade. Today, hundreds of thousands of consumer and commercial water treatment systems globally are based on FILMTEC elements.

Proven membrane technology

FILMTEC elements are based on proven FT30 spiral-wound, thin-film composite, polyamide membrane technology. FILMTEC FT30 membranes offer very high rejection of dissolved solids and organics. They can operate very efficiently at lower pressures, offer greater structural stability, greater pH stability, longer service life, and greater system operating economy.

Thin-film composite structure

The FILMTEC FT30 membrane consists of three layers: an ultra-thin polyamide barrier layer, a microporous polysulfone interlayer, and a high-strength polyester support web. The underlying structural support is provided by the nonwoven web. The polyamide barrier layer provides high water flux, unsurpassed salt and silica rejection, and excellent chemical resistance. The thick, microporous polysulfone support layer offers necessary porosity and strength properties and resists compaction under RO pressure conditions.



Precision fabrication for more predictable performance

FILMTEC elements fabricated in FilmTec Corporation's ISO 9002 certified manufacturing facility use the industry's most advanced precision manufacturing technology to ensure consistently high quality and performance. Beginning with the highest quality raw materials, FILMTEC elements are built to optimum physical tolerances using highly automated manufacturing equipment and a controlled manufacturing process that features sonic-welding of critical fastening points for maximum strength and durability.

The FILMTEC FT30 thin-film composite membrane consists of three layers that work together to provide unsurpassed salt rejection and superior toughness, durability, and resistance to compaction, abrasion, and chemical degradation.

Extensive quality testing

FILMTEC RO elements for consumer and commercial water purification systems are precision fabricated and thoroughly tested to ensure that they provide predictable, trouble-free operation and consistent high performance. After fabrication, FILMTEC elements are subjected to extensive quality testing to ensure that our high fabrication standards are consistently met.

The quality control process includes visual and vacuum testing of glue lines, and wet testing to confirm rejection and flow performance. As a result, FILMTEC elements exhibit minimum element-to-element differences and provide consistent, predictable performance. To further ensure the high quality of FILMTEC elements, each is packaged in an oxygen barrier bag before shipment to minimize the chance of biological contamination.

Elements available shipped wet or dry

Most FILMTEC elements are available shipped either wet or dry for your convenience. Dry elements can be installed faster and more easily because there is no preservative solution to rinse from the element prior to installation. Dry elements also weigh less, reducing shipping expense. And they are easier to inventory and store because they are not as sensitive to freezing temperatures and have a longer shelf-life than wet elements.

FILMTEC elements offer you...

- Tapwater and low-pressure point-of-use drinking water elements with the industry's broadest range of flows
- Brackish water, tapwater, and seawater elements for commercial systems
- More productive high performance elements
- More economical low energy elements
- Nanofiltration elements
- Choice of wet- or dry-shipped elements
- Spiral wound design
- Proven thin-film composite membrane
- Excellent membrane flux
- Excellent salt rejection
- Durability for long-term performance
- Resistance to bacterial growth
- Tolerance to a wide range of operating conditions
- Easier cleaning
- FDA clearance for food processing

A complete range of elements for a variety of applications and system requirements

We offer FILMTEC elements in sizes to meet a broad variety of consumer and commercial applications. In addition to RO elements for "under-the-sink" home drinking water systems and larger tapwater elements for "whole-house" and commercial systems, FILMTEC elements are also available for systems serving restaurants, car washes, bottled water plants, hotel/motel drinking water installations, personal care product manufacturing plants, greenhouses, ice manufacturing plants, and laboratories. FILMTEC elements for consumer and commercial applications are designed to meet pure water volume requirements ranging from 10 gallons per day to more than 2,500 gallons per day.

RO home drinking water elements

These low-pressure elements include a wide range of products with diameters of 1.5", 1.8", and 2" that provide maximum system flexibility. They are specifically designed for point-of-use home tapwater systems with relatively low volume daily productivity requirements. Product water flow rates range from 10 gpd to 75 gpd.

RO elements for commercial systems

Tapwater elements are available to fit larger home and commercial RO water purification systems using elements with diameters of 2", 2.5", 4", and 4.6". These elements are typically used in systems treating feed water with salt concentrations between 50 and 1,000 mg/l.

Brackish water elements are engineered to fit home or commercial systems using 2.5" and 4" elements to treat brackish ground or surface water supplies. These elements are used in systems that treat feed waters with salt concentrations between 50 and 10,000 mg/l.

Softening resins

In addition to FILMTEC RO and NF elements, we also offer DOWEX* cation resins for softening applications. These high-capacity, gel-type, strong acid cation resins have good physical and oxidative stability for operation in typical water softeners.

The particle size distribution of DOWEX resins typically ranges between 16 and 50 mesh, providing sufficient pressure drop to permit good distribution of flow across the resin bed.

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Choose FILMTEC nanofiltration elements for effective, economical hardness removal

Like reverse osmosis, nanofiltration is a pressure driven membrane process. Nanofiltration is used where the high sodium rejection possible with RO elements is not needed, but where other salts such as calcium and magnesium must be removed. In some cases, the untreated water may already be low in sodium. In other cases, particularly some non-drinking water applications, somewhat higher levels of sodium are desirable.

Nanofiltration systems typically operate at lower pressures than RO systems, yet yield high flow rates. Examples include whole-house water systems and commercial applications including car washes and laundromats.

FILMTEC nanofiltration elements have a spiral wound, thin-film composite structure for excellent performance and durability. Three grades of membranes are available in 2.5" and 4" elements to meet your specific requirements.

Nanofiltration is generally considered an excellent choice for…

- Removal of color
- Removal of trihalomethane (THM) precursors and Total Organic Carbon (TOC) from surface water
- Removal of hardness (from 400 ppm to 30 ppm, if required), radium, and Total Dissolved Solids (TDS) from well water
- Treatment of feedwaters high in silica
- Production of moderate-quality water
- Residential point-of-use applications requiring high flow at line pressure

FILMTEC RO elements are recommended when the feedwater to be purified has more than 1500 TDS, and for removal of organics with less than 200 molecular weight.

High performance and low energy elements set new standards for performance and economy

For enhanced productivity and economy in commercial scale water treatment, high performance and low energy element designs are offered. FILMTEC high performance elements include 2.5", 4" and 4.6" RO elements that can provide up to 50% more high quality water per day than standard elements, while still providing excellent salt rejection. This greater element productivity can be used to design more compact new systems or to upgrade existing system output. The FILMTEC BW30LE-440 low energy element has a permeate flow rate as high as 11,500 gallons per day operating at pressures as low as 150 psi. This means smaller pumps and less pumping energy are needed to achieve the required flow in an RO system, thus reducing operating costs.

Our customer support services make FILMTEC elements an even greater value

As good as FILMTEC elements are, the support services that back them add even more to their overall value.

Three-year warranty

We're so confident in the quality and performance of FILMTEC elements that these products are backed with an unmatched three-year prorated limited warranty. And, you'll be pleased to know that most warranty claims are resolved within just two weeks. A document outlining the details associated with this limited warranty is available upon request.

Expert technical support for application compatibility

FILMTEC element Technical Service and Development personnel are available to assist you or your system supplier with system design to ensure that the elements are fully compatible with your application.

System design and operating guidelines available via fax

For information concerning system design guidelines and specific operating recommendations related to topics such as dechlorinating feedwater, biological protection and disinfection, and element cleaning, simply use the Fax-Back form found in the pocket on the inside back cover of this brochure.

ROSA program previews performance to ensure system design quality

The ROSA reverse osmosis system analysis program is an exclusive software tool that is provided to designers of water purification systems based on FILMTEC elements. With ROSA, system designers can quickly and easily predict the performance and operating economics of FILMTEC elements in specific system designs. The newest version of the ROSA program contains an interactive library of technical data and design guidelines to lead designers, and those who evaluate system design, to optimum equipment selection and operation.

Want more information about specific FILMTEC elements?

Use the enclosed Fax-Back form to request product data sheets containing detailed information on specific FILMTEC elements for consumer and commercial water purification systems. Or, use the Internet to download product specification sheets from our home page on the World Wide Web (www.dow.com/liquidseps). For additional information, we invite you to contact the water purification experts at Dow at the location serving your area of the world, listed on the back of this brochure.

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