



Product Data Sheet

FilmTec™ Sanitary RO Membranes

Reverse Osmosis Elements for Food & Beverage Water Applications

Description



Certified to
NSF/ANSI 61

IDEAL for: Water Treatment Plant managers and operators looking for a state-of-the-art Sanitary Desalination solution for reducing CAPEX and OPEX in Food & Beverage

FilmTec™ Reverse Osmosis (RO) Membrane Elements contain sanitary, high-rejection FT30 reverse osmosis membrane that has been successfully used to process a wide range of food and beverage streams including Bottled Water, Juice, Soft Drinks, non-Dairy milk products and many others

These elements deliver high flux and outstanding quality water for applications requiring sanitary grade membrane elements.

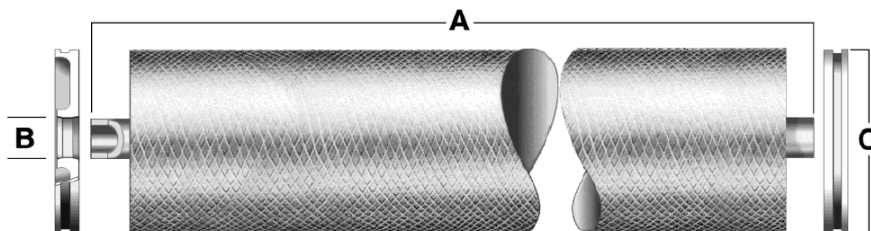
The full-fit configuration minimizes stagnant areas and is optimal for applications requiring a sanitary design. All components comply with FDA indirect food contact.

Typical Properties

FilmTec™ Membranes	Part Number	Active Area ft ² (m ²)	Stabilized Permeate Flow Rate gpd (m ³ /d)	Typical Stabilized Salt Rejection (%)
RO-4040-FF	84286	90 (8.36)	2,650 (10.0)	99.5
RO-390-FF	116314 / 100608	390 (36.23)	13,700 (51.8)	99.5

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. Minimum salt rejection is 98.0%.
3. RO-390-FF Flow rates for individual elements may vary but will be no more than ±15%
4. RO-4040-FF Flow rates for individual elements may vary but will be no more than ±21%
5. Stabilized salt rejection is generally achieved within 24-48 hours of continuous use; depending upon feed water characteristics and operating conditions.

Element Dimensions



FilmTec™ Membranes	A		B		C	
	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
RO-4040-FF	40.00	1,016	0.75 OD	19 OD	3.9	99
RO-390-FF	40.00	1,016	1.125 ID	28.58 ID	7.9	200

Operating and Cleaning Limits

Membrane Type	Thin-Film Composite
Maximum Operating Temperature	113°F (45°C)
Maximum Operating Pressure	600 psi (41 bar)
Maximum Differential Pressure	15 psi (1.0 bar)
Maximum Feed Turbidity	1 NTU
Free Chlorine Tolerance	Below Detectable Limits
pH Range	
Continuous Operations	3 – 10
Short-Term Cleaning (30 min)*	1 – 12
Maximum Feed Silt Density Index (SDI)	5

* Refer to [FilmTec™ Cleaning Guidelines](#) (Form No. 45-D01696-en)

Additional 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 limited warranty 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 60 psi (4.1 bar).
- Avoid permeate-side backpressure at all times.

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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.

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