



Product Data Sheet

FilmTec™ Fortilife™ Nanofiltration Membranes



FilmTec™ Fortilife™ NF1000 HP

Salt-Selective Nanofiltration Membrane Element for Water and Waste Reclamation

Key Features

- High monovalent-divalent ion selectivity to enable the production of high purity salt solutions while reducing liquid volume to downstream thermal treatment.
- Improved efficiency over FilmTec™ Fortilife™ NF1000 when operating above 400 psi.
- Expertly designed and optimized membrane chemistry to enable a reliable and robust element lifetime.
- High productivity membrane allows for increased water and resource recovery and/or reduced energy consumption.

Key Applications

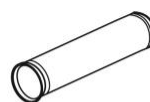
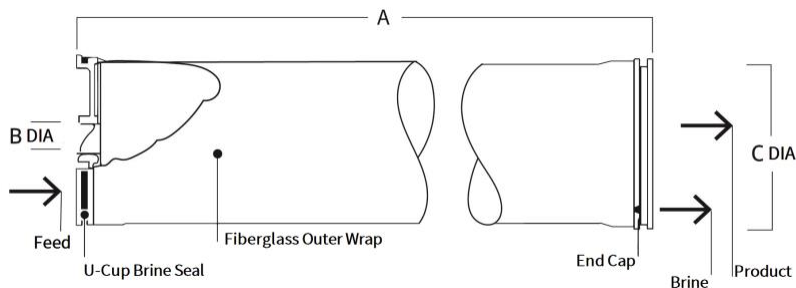
- Industrial Minimum- and Zero-Liquid Discharge (MLD/ZLD).
- Industrial resource recovery and recycling, such as in textiles, steel & metals, chemical & petrochemical.
- Softening.
- Chloralkali processing.
- Landfill leachate (de-coloring).

Typical Properties

FilmTec™ Element	Active Area ft ² (m ²)	Feed Spacer Thickness (mil)	Permeate Flow		Minimum Salt Rejection (%)
			Rate gpd (m ³ /d)	Stabilized Salt Rejection (%)	
Fortilife™ NF1000 HP	400 (37)	34	8,200 (31)	99.2	98.0

1. Permeate flow and salt rejection based on the following standard conditions: 2,000 ppm MgSO₄, 70 psi (4.8 bar), 77°F (25°C), 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.

Element Dimensions



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

FilmTec™ Element Fortilife™ NF1000 HP Dimensions – inches	
A	40.0 (1,016)
B	1.125 ID (29)
C	7.9 (201)

1. For element weight information refer to [What is the weight of FilmTec™ elements as delivered?](#)
2. For element packaging and shipping information refer to [How are FilmTec™ elements packaged and shipped?](#)

Suggested Operating Conditions

Membrane Type	Polypiperazine Thin-Film Composite
Maximum Operating Temperature ¹	113°F (45°C)
Maximum Operating Pressure	1,200 psig (83 bar)
Maximum Pressure Drop	
Per Element	15 psig (1.0 bar)
Per Pressure Vessel (Minimum 4 Elements)	50 psig (3.5 bar)
pH Range	
Continuous Operation ¹	3-10
Short-Term Cleaning (30 min.) ²	1-12
Maximum Feed Flow ³	75 gpm (17 m ³ /hr)
Maximum Feed Silt Density Index	SDI 5
Free Chlorine Tolerance ⁴	< 0.1 ppm

1. Maximum temperature for continuous operation above pH 10 is 95°F (35°C).
2. Refer to [FilmTec™ Cleaning Guidelines](#) (Form No. 45-D01696-en).
3. For recommended feed and permeate flow rates, flux, and recovery for various feed sources, refer to [FilmTec™ Design Guidelines for multiple-element systems of 8-inch elements](#) (Form No. 45-D01695-en).
4. Oxidation damage is not covered under warranty, DuPont recommends removing residual free chlorine by pretreatment prior to membrane exposure. Please refer to [Dechlorinating Feedwater](#) (Form No. 45-D01569-en) for more information.

General Information

- Keep elements moist at all times after initial wetting.
- For successful operation of Reverse Osmosis (RO) and Nanofiltration (NF) membrane systems, the operation must follow the guidelines provided in the [FilmTec™ Reverse Osmosis / Nanofiltration Elements Operation Excellence and Limiting Conditions Tech Fact](#) (Form No. 45-D04388-en).
- 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.
- Avoid static permeate-side backpressure at all times.
- Permeate obtained from the first hour of operation should be discarded.
- 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.

Important Information

Please consider good operating practices for the optimal performance of the Reverse Osmosis membrane elements to assure damage free operation:

1. [Loading of Pressure Vessels - Preparation & Element Loading](#) (Form No. 45-D01602-en)
2. System Operation, including plant [Start-Up Sequence](#) (Form No. 45-D01609-en) and [RO & NF Systems Shutdown](#) (Form No. 45-D01613-en)
3. [Handling, Preservation, and Storage](#) (Form No. 45-D03716-en)

Full information of plant design, system operation, and troubleshooting is given in the [FilmTec™ Reverse Osmosis Membranes Technical Manual](#) (Form No. 45-D01504-en).

Regulatory Note

This product may be subject to drinking water application restrictions in some countries; please check the application status before use and sale.



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