DuPont™ FilmTec™ elements

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Product Data Sheet | Nanofiltration

FilmTec™ NF90 Element

Nanofiltration Elements for Commercial Systems



Key Features

- High flux results in high yields
- Low energy usage reduces power consumption and costs
- Durable with good cleanability for long element life

Key Applications

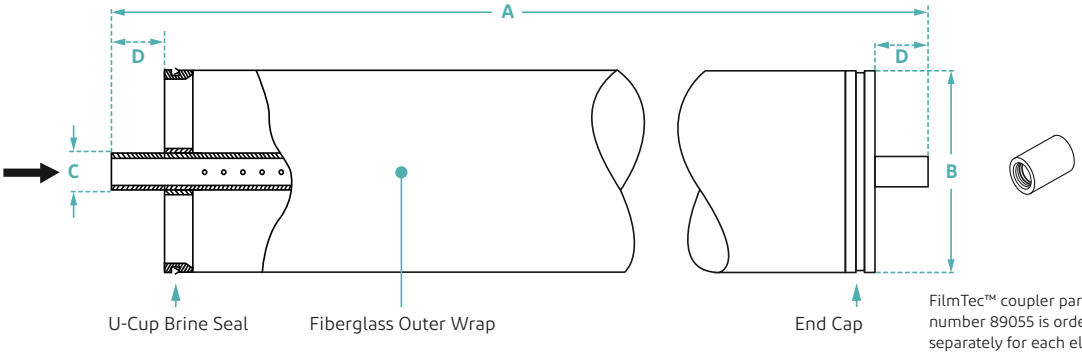
- Demineralization in small commercial applications

Typical Properties

Product	Part Number	Active Area ft² (m²)	Applied Pressure psi (bar)	Permeate Flow Rate gpd (m³/d)	Stabilized Salt Rejection (%)
FilmTec™ NF90-4040 element	12096025	82 (7.6)	70 (4.8)	2,000 (9.5)	> 98.7

1. Permeate flow and salt rejection based on the following test conditions: 2,000 ppm $MgSO_4$, 77°F (25°C) and 15% recovery at the pressure specified above.
2. Sales specifications may vary as design revisions take place.

Element Dimensions



FilmTec™ coupler part number 89055 is ordered separately for each element. Each coupler includes two 2-210 EPR O-rings (part number 89255).

	Dimensions – inches (mm)
A	40.0 (1,016)
B	3.9 (99)
C	0.75 (19)
D	1.05 (27)

1 inch = 25.4 mm

1. For element weight information refer to What is the weight of FilmTec™ elements as delivered? (Form No. 45-D04811-en)
2. For element packaging and shipping information refer to How are FilmTec™ elements packaged and shipped? (Form No. 45-D04811-en)

Form No. 45-D01520-en, Rev. 8
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Suggested Operating Conditions

Membrane Type	Polypiperazine Thin-Film Composite
Maximum Operating Temperature[1]	113°F (45°C)
Maximum Operating Pressure	600 psi (41 bar)
Maximum Pressure Drop	15 psi (1.0 bar)
pH Range	
Continuous Operation[1]	2 – 11
Short-Term Cleaning (30 min.)[2]	1 – 13
Maximum Feed Flow[3]	16 gpm (3.6 m^3/h)
Maximum Feed Silt Density Index (SDI)	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 Cleaning Procedures for FilmTec™ Elements (Form No. 45-D01696-en).
3. For recommended feed and permeate flow rates, flux and recovery for various feed sources, refer to Membrane System Design Guidelines for midsize FilmTec™ elements (Form No. 45-D01588-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.

Important 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.

Please consider good operating practices for the optimal performance of the Nanofiltration 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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