

ROAR™ D1-TFC-8040

Progressive Concentration Membrane for Divalent Salts such as sodium sulfate, ammonium sulfate, and lithium sulfate

Performance Benefits

- High brine concentration, concentrating 50,000 mg/L TDS Na₂SO₄ to 300,000 mg/L TDS using only 5 kWh/m³ of final permeate <400 mg/L TDS
- 70 bar operating pressure enables integration with conventional SWRO equipment and components
- Extensive experience (first commercial system 1998) with proprietary modeling and operational guidelines for engineering and support

Applications

- Lithium Sulfate DLE
- Industrial ZLD/MLD
- FO Draw Reconcentration



Typical Specifications

Product	Active Area ft ² (m ²)	Feed Spacer Thickness (mil)	Permeate Flow Rate gpd (m ³ /d)	Stabilized Salt Rejection (%)
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ROAR™ D1-TFC-8040

400 (37)

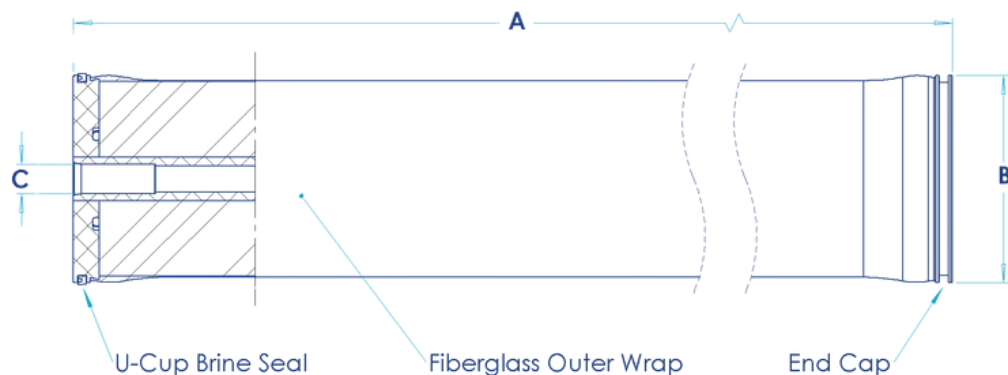
31

2,830 (10.7)

72

1. Permeate flow and salt rejection based on the following standard conditions: 200,000 mg Na₂SO₄/L, pH 7.0, 77°F (25°C), 44 gpm (10 m³/h), 860 psi (59.5 bar).
2. Crystallization is estimated to start occurring at 72°F (22°C) as the solution cools in the standard conditions referenced in (1) above.
3. Flow rates for individual elements may vary but will be no more than 15% below the value shown.
4. Stabilized salt rejection is generally achieved within 24-48 hours of continuous use; depending upon feedwater characteristics and operating conditions.
5. Sales specifications may vary as design revisions take place.

Element Dimensions



Dimensions (in) [mm]

A	40.0 (1016)
B	7.9 (201)
C	1.125 (29) ID

ID = Inner Diameter
1 in = 25.4 mm

1. ROAR™ D1-TFC-8040 elements weigh 36 lbs (16.4 kg).
2. Vacuum-sealed in polyethylene bag containing <1.0% sodium metabisulfite. Supplied with interconnector. Store at 4-25°C away from direct sunlight and oxidizing agents.

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Suggested Operating Conditions

Membrane Type	Composite Polyamide
Maximum Operating Temperature ¹	102°F (39°C)
Maximum Operating Pressure	1,200 psi (83 bar)
Maximum Pressure Drop Per Element	15 psi (1 bar)
Per Pressure Vessel (Minimum 4 Elements)	50 psi (3.5 bar)
pH Range	
Continuous Operation ¹	3 - 10
Short-Term Cleaning (30min.) ²	2 - 11
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 102°F (39°C). Consult your FTS H₂O representative for advice on applications above 102°F (39°C).
2. Avoid static permeate-side backpressure at all times. Lubricate O-rings and brine seal with silicone or glycerin only.
3. Proprietary OARO modeling and operational guidelines available through Aquatech-FTS applications engineering. For recommended feed and permeate flow rates, flux, and recovery for various feed sources, contact ftsh2o.com for project-specific assistance.
4. Oxidation damage is not covered under warranty. FTS H₂O recommends removing residual free chlorine by pretreatment prior to membrane exposure.



Important General Information

- Keep elements moist at all times after initial wetting.
- To prevent biological growth during prologed 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.
- 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.

Regulatory Note

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

Handling and Storage

Packaging

Vacuum-sealed in polyethylene bag containing <1.0% sodium metabisulfite. Supplied with interconnected. Store at 4-25°C away from direct sunlight and oxidizing agents.

Installation

Avoid static permeate-side backpressure at all times. Lubricate O-rings and brine seal with silicone or glycerin only.

Warranty Notice

Free chlorine or other oxidizing agents cause irreversible membrane failure and void warranty. No performance warranties are given. Consult factory for full warranty terms.

Design Support

Proprietary OARO modeling and operational guidelines available through Aquatech-FTS H₂O applications engineering. Contact ftsh2o.com for project-specific assistance.