

FILPURE PRO SERIES High Rejection Brackish Water RO Elements

Features & Description

Filpure® PRO SERIES reverse osmosis modules are engineered to satisfy highly robust and durable polyamide membrane demands under challenging feed water environments. PRO SERIES elements can reliably treat feed waters containing up to 5000 ppm total dissolved solids (TDS). Key structural advantages include an exceptionally steady and high salt rejection profile, enhanced product flow rates, standard operational pressure limits, and extended membrane lifespan. They are optimally suited for processing high TDS bore well and surface water resources for drinking water supply as well as industrial applications, including food and beverage processing.

Product Specifications

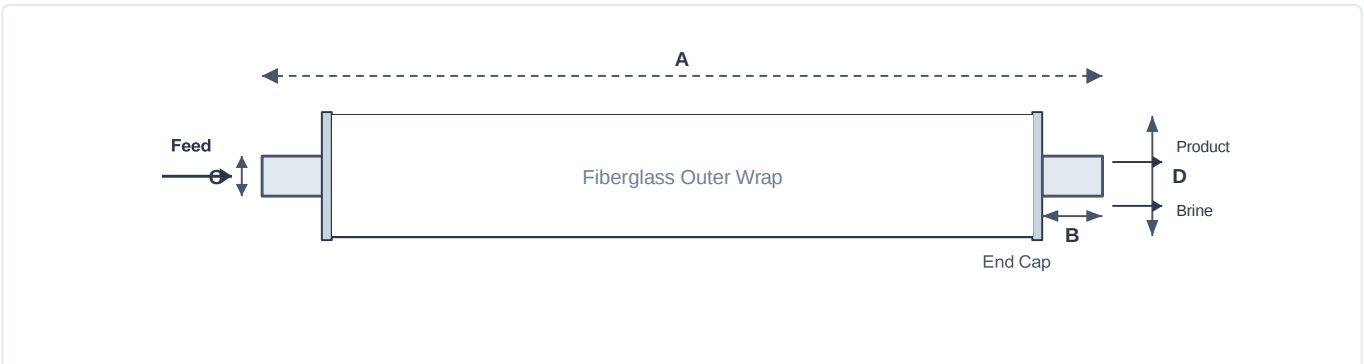
| Model           | Feed Spacer (mil) | Permeate Flow GPD (m³/d) | Min. Salt Rejection (%) | Recovery (%) | Stabilized Rejection (%) |
|-----------------|-------------------|--------------------------|-------------------------|--------------|--------------------------|
| PRO SERIES 4040 | 34                | 2,400 (9.0)              | 99.5                    | 15%          | 99.6%                    |
| PRO SERIES 8040 | 34                | 10,400 (39.36)           | 99.5%                   | 15%          | 99.6%                    |

**Test Conditions:** Permeate flow and salt rejection figures are evaluated under the following standardized baselines: 2,000 ppm NaCl, 77°F (25°C), 15% recovery, pH 8, and an applied testing pressure of 225 psi. Individual flow variances can range within +/-15%.

Typical Solute Rejection Profile (%)

| Target Solute Element  | NH <sub>4</sub> <sup>+</sup> | NO <sub>3</sub> <sup>-</sup> | SiO <sub>2</sub> | Boron |
|------------------------|------------------------------|------------------------------|------------------|-------|
| Typical Rejection Rate | 99.0%                        | 98.5%                        | 99.0%            | 88.0% |

Dimensional Data & Specifications



| Product Model   | A Inches (mm) | B Inches (mm) | C Inches (mm)   | D Inches (mm) |
|-----------------|---------------|---------------|-----------------|---------------|
| PRO SERIES 4040 | 40.00 (1,016) | 1.05 (26.5)   | 0.75 (19) ID    | 3.9 (99)      |
| PRO SERIES 8040 | 40.00 (1,016) | 1.125 (29)    | 1.122 (28.5) ID | 7.9 (200)     |

## Operating Limits & Parameters

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| Membrane Base Material            | Polyamide Thin-Film Composite                             |
| Maximum Operating Temperature     | 113°F (45°C)   <i>Max temp above pH 10 is 95°F (35°C)</i> |
| Maximum Feed Flow Rate            | 3.7 m³/hr (4040) / 16.0 m³/hr (8040)                      |
| Maximum Feed Water SDI (15 min)   | 5.0                                                       |
| pH Operating Range Continuous     | 3.0 – 11.0                                                |
| pH Range during Chemical Cleaning | 2.0 – 12.0                                                |
| Maximum Element Pressure Drop     | 15 psi (1.0 bar)                                          |
| Free Chlorine Tolerance           | < 0.1 ppm                                                 |
| Maximum Operational Pressure      | 725.18 psi (50 bar)                                       |
| Operating Pressure (5k Feed TDS)  | 11 – 13 kg/cm²                                            |

**Oxidizer Warning:** The presence of free chlorine or alternate oxidizing agents triggers premature membrane breakdown and degradation. Residual oxidants must be completely neutralized via structured pre-treatment before entry to avoid voiding warranty coverages.

## Operational & System Guidelines

- Avoid excessive hydraulic shocks and radical pressure shifts during initial system start-up stages.
- Ramp operational feed pressure up carefully over a minimum timeline of 60 seconds to cross into designated stream levels safely.
- Cross-flow feed velocity targets across elements should be built up progressively over a 20-second threshold.
- Completely discharge and reject permeate volumes gathered during the first full hour of initial run operations.
- Maintain membrane elements in a completely moist condition at all times post wetting.
- For short or extended shut-downs stretching past 24 hours, preserve active system arrays within a 1% Sodium Metabisulfite preservative solution loop to inhibit biological growth activity.