

## **cleaning filmtec membranes**

### **for FT30 membranes or home type**

**<http://www.pacificro.com/DeFilmCl.pdf>**

#### **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. Permeate obtained from first hour of operation should be discarded.

**Avoid static permeate-side backpressure at all times.**

**[http://www.eswp.com/water/membrane\\_technology.htm](http://www.eswp.com/water/membrane_technology.htm)**

#### **Pushing the Limits: Improved RO Membrane Cleaning Recommendations**

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Cleaning biofouling from reverse osmosis (RO) membranes is an important part of operating RO systems. A major factor in limiting the effectiveness of membrane cleanings is the pH of the cleaning solution. Many cleaning regimens specify acid cleaning followed by alkaline cleaning. The alkaline cleaning is typically performed in the pH range of 10.5 to 11.5. FilmTec Corporation lab tests and field experiences have shown that these procedures are not the most effective way to clean RO membranes. Experience with FILMTEC membranes has shown that the alkaline cleaning should precede the acid cleaning. Furthermore, the pH of the cleaning solution should be maintained in the pH range of 12 to 13 throughout the cleaning cycle. This paper discusses both lab tests and field experience of cleaning under these effective guidelines.