



FILMTEC Membranes

Cleaning and Sanitization: Cleaning Requirements

Cleaning Requirements

In normal operation, the membrane surface in RO elements can become fouled by mineral scale, biological matter, colloidal particles and insoluble organic constituents. Deposits build up on the membrane surfaces during operation until they cause loss in normalized permeate flow and/or loss of normalized salt rejection. Elements should be cleaned whenever the normalized permeate flow drops by $\geq 10\%$, or the normalized salt passage increases by $\geq 10\%$, or the normalized differential pressure (feed pressure minus concentrate pressure) increases by $\geq 15\%$ from the reference condition established during the first 48 h of operation. If cleaning is delayed, system performance recovery may be less effective.

Differential pressure (ΔP) should be measured and recorded across each stage of the array of pressure vessels. If the feed spacer within the element becomes plugged, the ΔP will increase. It should be noted that the permeate flux will drop if feed water temperature decreases. This is normal and does not indicate membrane fouling.

A malfunction in the pretreatment, a malfunction of the pressure control or an increase in recovery can result in reduced product water output or increased salt passage. If a problem is observed, these causes should be considered first. The element(s) may not require cleaning. A computer program called FTNORM is available from FilmTec for normalizing performance data of FILMTEC™ RO membranes. This program can be used to assist in determining when to clean and can be downloaded at no cost from our web site (<http://www.filmtec.com>).

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For more information about FILMTEC membranes, call the Dow Liquid Separations business:

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Notice: 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.

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