



## FILMTEC Membranes

### FILMTEC 4.6" Tapwater RO Elements

#### Features

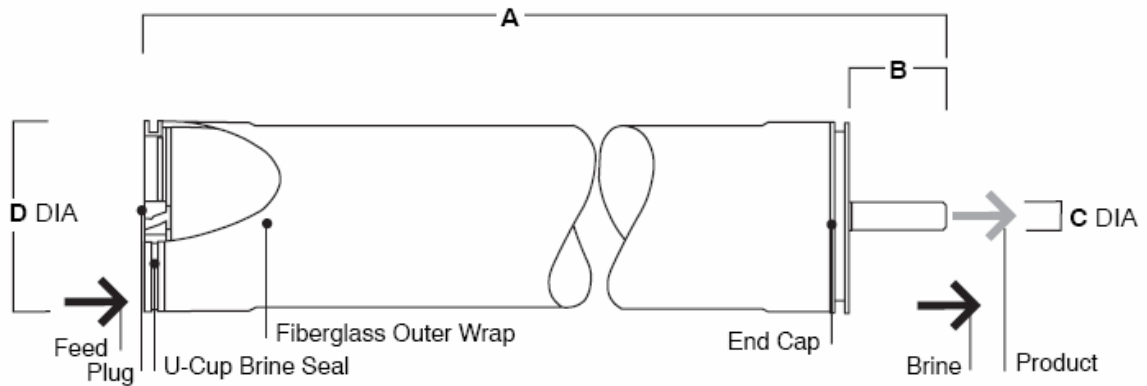
FILMTEC™ 4.6-inch diameter RO elements offer the highest quality water for hospitals, dialysis clinics and other medical applications, using the high performance TW30HP membrane which provides superior permeate flow and salt rejection. These elements are made with the same high quality materials of construction as our larger FILMTEC elements used in municipal and industrial systems. For added convenience during shipping, storage and loading, these elements are available as either wet or dry products.

#### Product Specifications

Product	Product Water Flow Rate			Applied Pressure psig (bar)	Stabilized Salt Rejection Cl- (%)
	(gpd)	(m <sup>3</sup> /d)	(l/h)		
TW30HP-4611	1,200	4.54	189	225 (15.5)	99.0
TW30HP-4619	1,450	5.49	229	225 (15.5)	99.0
TW30HP-4641	5,200	19.68	820	225 (15.5)	99.0

- Permeate flow and salt rejection based on the following test conditions: 2,000 ppm NaCl, pressure specified above, 77°F (25°C), pH 8 and the following recovery rates: TW30HP-4611 - 5%, TW30HP-4619 - 8%, TW30HP-4641 - 15%.
- Minimum salt rejection for individual element is 98.0%.
- Flow rates for individual elements may vary +/-20%.
- For the purpose of improvement, specifications may be updated periodically.

Figure 1



Product	Maximum Feed Flow Rate, gpm (m <sup>3</sup> h)	Dimensions - Inches (mm)			
		A	B	C	D
TW30HP-4611	18 (4.1)	11.45 (291)	--	0.75 (19)	4.61 (117)
TW30-4619	18 (4.1)	19.30 (490)	--	0.75 (19)	4.61 (117)
TW30HP-4641	18 (4.1)	41.31 (1,049)	2.19 (56)	0.75 (19)	4.61 (117)

- Refer to ROSA for multiple-element systems using the TW30HP-4641.
  - Elements fit nominal 4.6-inch I.D. pressure vessels.
- 1 inch = 25.4 mm

## Operating Limits

• Membrane Type	Polyamide Thin-Film Composite
• Maximum Operating Temperature	113°F (45°C)
• Maximum Operating Pressure	600 psi (4.1 MPa)
• Maximum Pressure Drop	15 psi (1.0 bar)
• pH Range, Continuous Operation <sup>a</sup>	2 - 11
• pH Range, Short-Term Cleaning <sup>b</sup>	1 - 12
• Maximum Operating Temperature	113°F (45°C)
• Maximum Feed Silt Density Index	SDI 5
• Free Chlorine Tolerance <sup>c</sup>	<0.1 ppm

<sup>a</sup> Maximum temperature for continuous operation above pH 10 is 95°F (35°C)

<sup>b</sup> Refer to cleaning guidelines in specification sheet 609-23010.

<sup>c</sup> Under certain conditions, the presence of free chlorine and other oxidizing agents will cause premature membrane failure. Since oxidation damage is not covered under warranty, FilmTec recommends removing residual free chlorine by pretreatment prior to membrane exposure. Please refer to technical bulletin 609-22010 for more information.

## Important Operating Information

1. Keep elements moist at all times after initial wetting.
2. If operating specifications given in this Product Information bulletin are not strictly followed, the limited warranty will be null and void.
3. Permeate obtained from first hour of operation should be discarded.
4. To prevent biological growth during storage, shipping or system shutdowns it is recommended that FILMTEC elements be immersed in a protective solution. The standard storage solution contains 1.5 percent (by weight) sodium metabisulfite (food grade).
5. Elements must be in use for at least six hours before formaldehyde is used as a biocide. If the elements are exposed to formaldehyde before being in use for this period of time, a loss in flux may result.
6. The membrane shows some resistance to short-term attack by chlorine (hypochlorite). Continuous exposure, however, may damage the membrane and should be avoided.
7. The customer is fully responsible for the effects of incompatible chemicals on elements. Their use will void the element limited warranty.

### FILMTEC Membranes

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

North America: 1-800-447-4369  
Latin America: (+55) 11-5188-9222  
Europe: (+32) 3-450-2240  
Pacific (ex. China): +800-7776-7776  
China: +10-800-600-0015  
<http://www.filmtec.com>

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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