

# FOUL

## High rejection, low fouling brackish water RO elements



Certified to  
NSF/ANSI/CAN 61

The Oltremare FOUL elements offer breakthrough technology in the treatment of difficult feedwaters, municipal wastewater and other challenging feedwaters. Until now, these applications have required significant pretreatment prior to subjecting them to a composite polyamide element.

### MEMBRANE CHARACTERISTICS

Membrane	RO
Membrane Type	Polyamide
Stabilized Salt Rejection (%)	99,3 <sup>(b)</sup> - 99,4 <sup>(c)</sup>
Minimum Salt Rejection (%)	98,0 <sup>(b)</sup> - 99,0 <sup>(c)</sup>

DESIGN INFORMATION	Permeate Flow m <sup>3</sup> /day (gpd) <sup>(a)</sup>	Maximum Feed Flow m <sup>3</sup> /h (gpm)	Membrane Area m <sup>2</sup> (ft <sup>2</sup> )	Feed Spacer Thickness (mil)	NSF Certified
Oltremare FOUL- 2540 <sup>(b)</sup>	2.5 (650)	1.38 (6)	2.6 (28)	28	-
Oltremare FOUL- 4040 <sup>(c)</sup>	7.6 (2000)	2.72 (12)	7 (75)	31	YES

### OPERATING PARAMETERS

Maximum Operating Pressure	41 bar (600 psi) for fibreglassed, 20.7 bar (300 psi) for tape wrapped <sup>(d)</sup>
Maximum Operating Temperature	45 °C (113 °F)
Cleaning pH Range <sup>(e)</sup>	1.0 - 12.0
Chlorine Tolerance <sup>(f)</sup>	< 0.1 ppm
Maximum Pressure Drop	0.7 bar (10 psi) per element; 4 bar (60 psi) per housing
Maximum SDI <sub>15</sub>	5.0
Maximum Turbidity	1 NTU

a. Test conditions: 1,500 ppm NaCl, 15.5 bar (225 psi), 25°C (77°F), 15% recovery, pH 8.0, 30 minutes operation. Flow rates will be no more than 15% below the values shown. Product specifications may change without notice as design revisions occur.

b. Minimum and stabilized salt rejection for modules 2540.

c. Minimum and stabilized salt rejection for modules 4040.

d. Models from 2514 to 4040 can be both fibreglassed and tape wrapped.

e. Refer to temperature and pH limits in Membrane Cleaning Guide - Water Application Elements (TSG-C-001).

f. Pretreatment is recommended for the removal of free chlorine and other oxidizing agents to prevent damage to membranes. Oxidizing agents, such as free chlorine, in contact with polyamide membranes may result in shortened operating life or membrane failure. Such oxidation damage is excluded from warranty. Refer to Membrane Operating Guide - Recommendations for Water Purification (TSG-O-012).

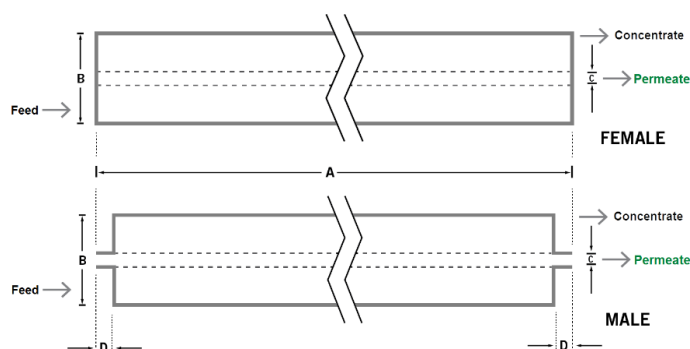
PHYSICAL DIMENSIONS	Element Weight kg (lb) <sup>(g)</sup>	Dim. A mm (inches)	Dim. B mm (inches)	Dim. C <sup>(h)</sup> mm (inches)	Permeate Tube <sup>(i)</sup>
Oltremare FOUL1 - 2540	1.8 (4)	1016 (40)	61 (2,4)	19.1 (0.75)	Male
Oltremare FOUL1 - 4040	3.6 (8)	1016 (40)	100.3 (3,95)	19.1 (0.75)	Male

g. Shipping weight is dependent on packaging material and quantity shipped.

h. For female elements, "C" is the inner diameter. For male elements, "C" is the outer diameter.

i. Male elements have a protruding permeate tube, indicated as "D" in the diagram.

Dimension "D" is 30,5 mm (1.2 in) for modules from 2514 to 4021. For 4040 module is 26.7 mm (1.05 in).



### Customizable specialty elements

MANN+HUMMEL offers a full range of membranes and element designs for challenging water and process applications. Technologies include low-fouling RO, submerged UF, continuous high temperature, ultra-high pressure, unique sanitary designs and more. Contact us to customize a product that satisfies your specific requirements.

## IMPORTANT INFORMATION

**Start-up:** We recommend flushing elements for 30 minutes at low pressure and discarding permeate during the flush prior to operation. For further information, please see Element Start-Up Guide - System Start-Up (TSG-O-005).

**Cleaning:** Oltremare membrane elements must be cleaned periodically to ensure proper operation and to prevent membrane damage. Please see Membrane Cleaning Guide - Water Application Elements (TSG-C-001).

**Storage:** Oltremare membrane elements must be stored appropriately to ensure proper operation and to prevent membrane damage. Please see Element Storage Guides (TSG-O-009 & TSG-O-010)

## Contact

### Americas

USA: +1 805 964 8003  
customerservicemus@mann-hummel.com

### Asia

APAC: +65 658 68181  
info.wfs@mann-hummel.com  
China: +86 512 88931188  
waterchina@mann-hummel.com

### Europe

Germany: +49 611 7118 7480  
Italy: +39 0721 1796201  
info.wfs@mann-hummel.com

**MANN+  
HUMMEL**