



Sanitary Spiral Membranes for Reverse Osmosis

RO PET Series

The elements are based on a unique construction on polyester (PET) support material in a sanitary full-fit design that provides optimum cleaning conditions.

They are available in different combinations of length, diameter, and feed spacer. All the materials used for the production of the membrane comply with FDA regulations (CFR) Title 21.

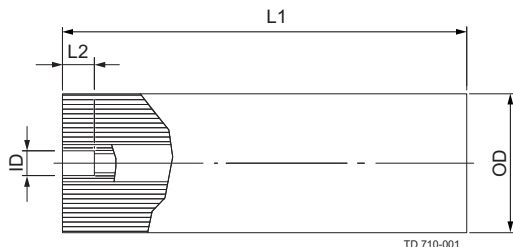
Designation	Characteristics	NaCl rejection
RO99	Thinfilim composite	≥ 98%*
RO90	Thinfilim composite	≥ 90%**

* measured on 2000 ppm NaCl, 16 bar, 25°C

** measured on 2000 ppm NaCl, 9 bar, 25°C

Spiral membrane designation

Alfa Laval RO99-3838/48		
Alfa Laval RO99	=	Membrane type
38	=	Outer diameter of element (3.8")
38	=	Element length (38")
48	=	Feed spacer thickness



Dimensions

- OD = outer diameter of element
- L1 = total length of element without ATD
- ID = diameter of ATD socket
- L2 = depth of ATD socket

Standard Element Dimensions (without ATD system)

Part no.	Element type	OD mm	L1 mm	ID mm	L2 mm
525506	RO90-2517/30	64.0-65.0	432	21.00	26.0
525507	RO90-2517/48	64.0-65.0	432	21.00	26.0
525508	RO90-3838/30	95.0-96.5	965	21.10	50.0
525509	RO90-3838/48	95.0-96.5	965	21.10	50.0
525510	RO90-8038/48	198.5-201.5	965	28.58	79.0
525511	RO90-8038/65	198.5-201.5	965	28.58	79.0
522317	RO99-2517/30	64.0-65.0	432	21.00	26.0
522318	RO99-2517/48	64.0-65.0	432	21.00	26.0
522319	RO99-3838/48	95.0-96.5	965	21.10	50.0
522320	RO99-3838/65	95.0-96.5	965	21.10	50.0
522322	RO99-8038/48	198.5-201.5	965	28.58	79.0
522323	RO99-8038/65	198.5-201.5	965	28.58	79.0

Other element sizes may be available - please contact Alfa Laval.

Recommended operation limits

Production

pH range	3-10
Typical operating pressure, bar	15-42
Maximum operating pressure, bar	55
Temperature, °C	5-50

Cleaning (3 hours per day)*

Pressure, bar	1-5
Temperature, °C	30-50
pH range	1.5-11.0
NaOH, %	<0.1
Na-EDTA, %	<0.2
Mineral acid, %	<0.2
Citric acid, %	<1.0

Note: The use of oxidation agents and similar chemicals might influence the actual membrane performance over time and agents such as chlorine are not allowed.

* Please consult the Alfa Laval "Water quality" PD leaflet, 1603.

Sanitation (1 hour per week)

Hydrogen peroxide (ppm) at 25°C <1,000

Max. pressure drop bar and typical cross-flow m³/h* at cP 1

Element diameter Spacer size	2.5"		3.8" and 3.9"		8.0"	
	m ³ /h	bar	m ³ /h	bar	m ³ /h	bar
30 mil	1.0	0.5	7	1.1	-	-
48 mil	1.5	0.5	8	1.1	22	0.9
65 mil	-	-	10	1.1	26	0.9

* Calculated at tight fit of spiral element and housing and by use of standard ATD system

Important information

New spiral elements must be cleaned prior to first use. The cleaning procedure should be in accordance with the instructions provided in Alfa Laval's cleaning description for the spiral element type concerned. The customer is fully responsible for the effects that any incompatible chemicals may have on the spiral elements.

- After initial wetting, the spiral elements must be kept moist at all times.
- If the operating specifications given in this product description are not strictly followed, the limited warranty will be null and void.
- To prevent biological growth during system shutdowns, Alfa Laval recommends that spiral elements should be immersed in a protective solution.
- Avoid permeate-side back pressure at all times.
- Alfa Laval recommends using a rigid stainless steel ATD end device at the housing outlet end.
- Alfa Laval recommends that the inner diameter of the housing should be approx. 2 mm bigger than the outer diameter of the spiral element in question.

Operation guidelines

Avoid any abrupt pressure or cross-flow variations on the spiral elements during startup, shutdown, cleaning or other sequences, in order to prevent possible damage.

Alfa Laval recommends the following start-up procedure from standstill to operating condition:

- The unpressurized plant should be refilled with water.
- Feed pressure should be gradually increased over a 30-60 second time scale.
- Before initiating cross-flow at high permeate flux conditions (e.g. start-up with high-temperature water), the set feed pressure should be maintained for 5–10 minutes.
- Cross-flow velocity at the set operating point should be gradually achieved over a period of 15-20 seconds.
- Temperature variations should be implemented gradually over a period of 3-5 minutes.

Alfa Laval reserves the right to change specifications without prior notification. ALFA LAVAL is a trademark registered and owned by Alfa Laval Corporate AB.

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How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information direct.