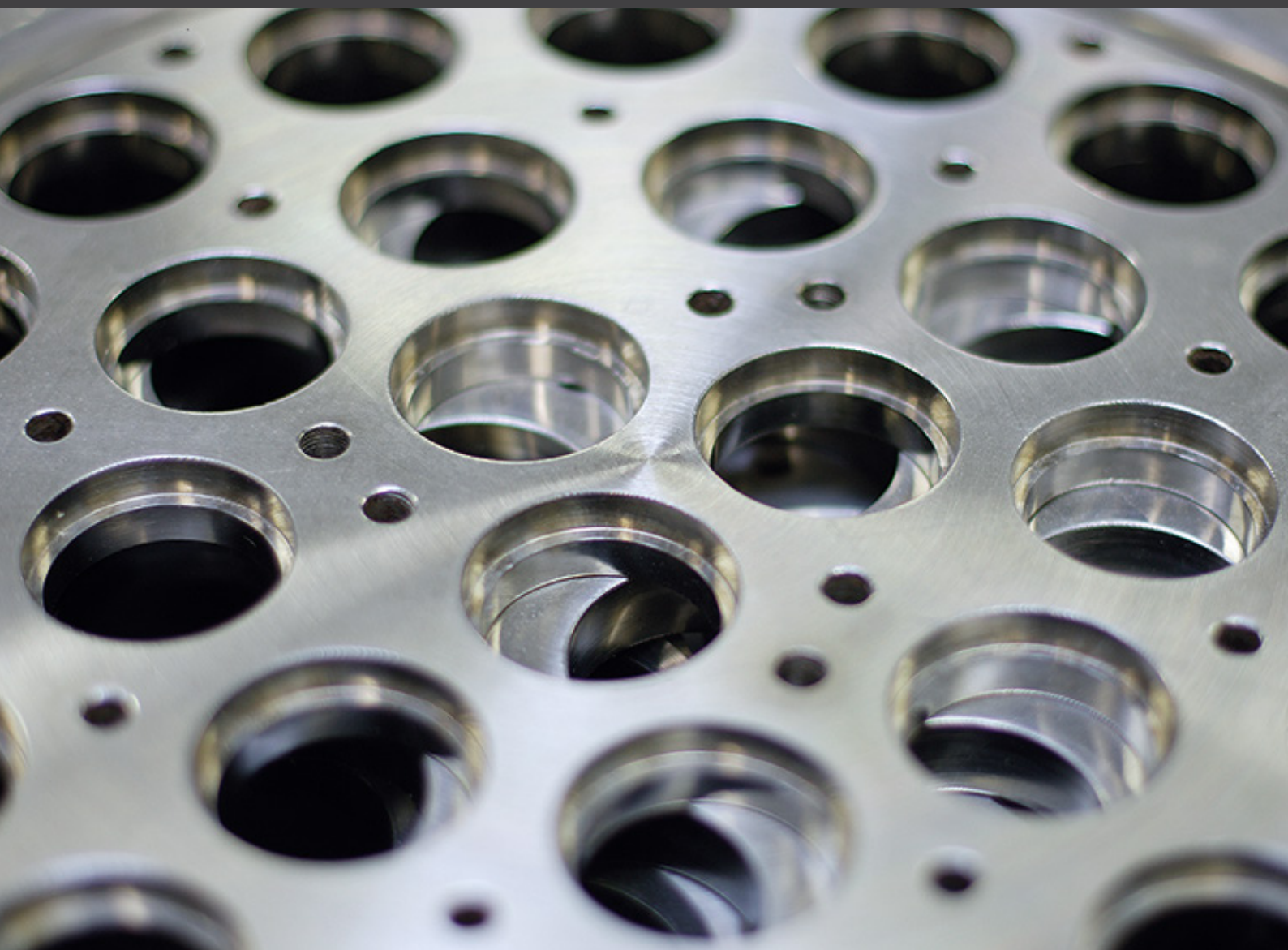


STAINLESS STEEL HOUSINGS WITH CERAMIC MEMBRANES



STAINLESS STEEL HOUSINGS WITH CERAMIC MEMBRANES
modules in industrial design

Membrane diameter	Membrane design	Membrane length (mm)	M1		M2		M3		M5		M7						
			filter surface in m ² per module														
25.4 mm	7/6	1000	NW 25	NW 25	NW 25	NW 25	NW 25	NW 50	NW 50	NW 50	NW 50	NW 50	0.13	0.26	0.40	0.66	0.92
		1200											0.16	0.32	0.48	0.79	1.11
	19/3.3	1000											0.20	0.40	0.60	1.00	1.40
		1200											0.24	0.48	0.72	1.20	1.68
	37/2	1000											0.23	0.46	0.70	1.16	1.62
		1200											0.28	0.56	0.84	1.39	1.95
41 mm	19/6	1200	NW 32	NW 125	NW 150	NW 150	NW 150	NW 150	NW 150	NW 150	NW 150	NW 150	0.43	-	1.29	-	3.01
		1500											0.54	-	1.62	-	3.76
	37/3.8	1200											0.53	-	1.59	-	3.71
		1500											0.67	-	2.01	-	4.69
	61/2.5	1200											0.58	-	1.74	-	4.06
		1500											0.72	-	2.16	-	5.04
52 mm	19/8	1200	NW 40	NW 125	NW 125	NW 125	NW 125	NW 125	NW 125	NW 125	NW 125	NW 125	0.57	-	1.71	-	-
		1500											0.72	-	2.15	-	-
	61/4	1200											1.03	-	3.09	-	-
		1500											1.29	-	3.87	-	-
	85/3.3	1200											1.06	-	3.18	-	-
		1500											1.32	-	3.97	-	-
		1200											1.59	-	4.77	-	-
		1500											1.99	-	5.97	-	-

M8		M10		M12		M14		M19		M27		M30									
filter surface in m ² per module																					
NW 200	NW 200	NW 200	NW 200	NW 250	NW 250	NW 250	NW 250	NW 250	NW 250	NW 250	NW 250	NW 250	NW 250	-	1.32	-	1.85	2.51	-	-	
														-	1.58	-	2.22	3.01	-	-	
														-	2.00	-	2.80	3.80	-	-	
														-	2.40	-	3.36	4.56	-	-	
														-	2.32	-	3.25	4.41	-	-	
														-	2.78	-	3.90	5.29	-	-	
NW 250	NW 250	NW 250	NW 250	NW 300	NW 300	NW 300	NW 300	NW 300	NW 300	NW 300	NW 300	NW 300	NW 300	-	-	5.16	-	8.17	11.61	-	-
														-	-	6.45	-	10.21	14.58	-	-
														-	-	6.36	-	10.07	14.31	-	-
														-	-	8.04	-	12.73	18.09	-	-
														-	-	6.96	-	11.02	15.66	-	-
														-	-	8.64	-	13.68	19.44	-	-
NW 300	NW 300	NW 300	NW 300	NW 400	NW 400	NW 400	NW 400	NW 400	NW 400	NW 400	NW 400	NW 400	NW 400	4.56	-	6.84	-	10.83	-	17.10	
														5.80	-	8.70	-	13.68	-	21.60	
														8.24	-	12.36	-	19.57	-	30.90	
														10.32	-	15.48	-	24.51	-	38.70	
														8.48	-	12.72	-	20.14	-	31.80	
														10.57	-	15.86	-	25.08	-	39.60	
														12.72	-	19.08	-	30.21	-	47.70	
														15.92	-	23.88	-	37.81	-	59.70	



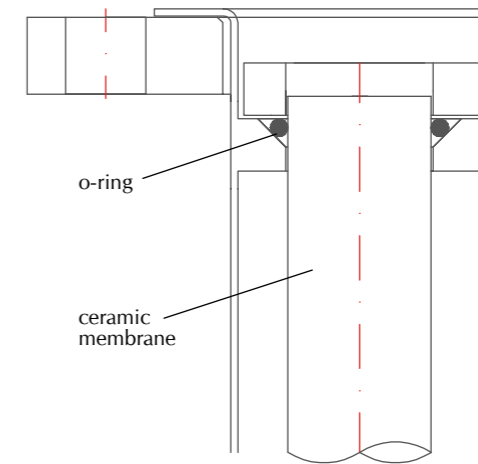
STAINLESS STEEL HOUSINGS WITH CERAMIC MEMBRANES
modules in industrial design

Membrane diameter	Membrane design	Membrane length (mm)	filter surface in m ² per module						
			M31	M32	M46	M47	M68		
25.4 mm	7/6	1000	NW 200	4.09	-	-	6.20	8.98	
		1200		4.91	-	-	7.44	10.77	
		19/3.3		1000	6.20	-	-	9.40	13.60
				1200	7.44	-	-	11.28	16.32
		37/2		1000	7.19	-	-	10.90	15.78
				1200	8.63	-	-	13.08	18.93
	41 mm	19/6	1200	NW 350	-	13.76	19.78	-	-
			1500		-	17.28	24.84	-	-
		37/3.8	1200		-	16.96	24.38	-	-
			1500		-	21.44	30.82	-	-
		61/2.5	1200		-	18.56	26.68	-	-
			1500		-	23.04	33.12	-	-
52 mm	19/8	1200	NW 400	-	-	-	-	-	
		1500		-	-	-	-	-	
	61/4	1200		-	-	-	-	-	
		1500		-	-	-	-	-	
	85/3.3	1200		-	-	-	-	-	
		1500		-	-	-	-	-	
	211/2	1200		-	-	-	-	-	
		1500		-	-	-	-	-	

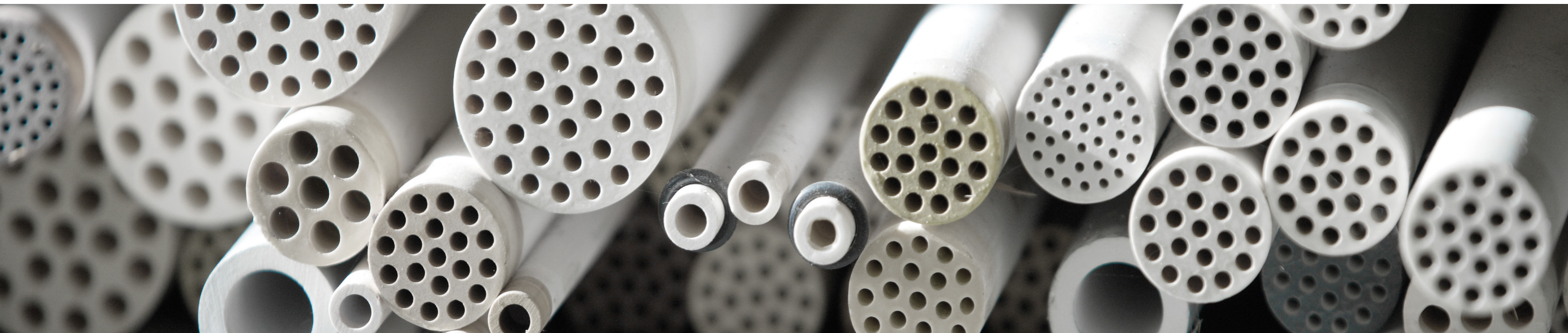
filter surface in m ² per module			
M82	M114		
NW 350	NW 400	10.82	15.05
		12.99	18.06
		16.40	22.80
		19.68	27.36
		19.02	26.35
		22.83	31.74
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

- > Further membrane lengths (up to 1.5 m)
- > other types of modules and technical drawings on request
- > drawings of housings are not to scale and are for informational purposes only

SEALING



industrial design
Reliable in operation and cost-efficient membrane-O-ring sealing system. The O-rings are available in numerous material qualities, such as Viton, EPDM, FFKM or NBR and others. Proven for decades in a large number of industrial applications.



STAINLESS STEEL HOUSINGS WITH CERAMIC MEMBRANES

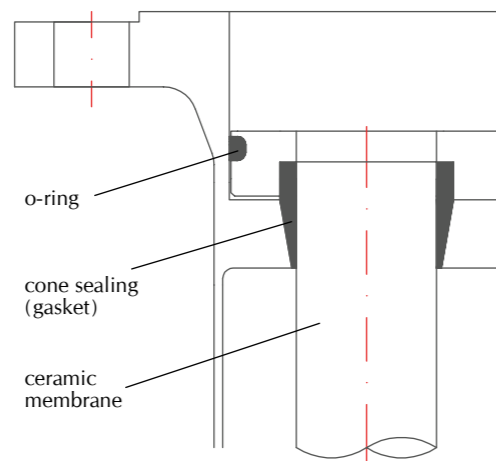
modules according to 3-A Sanitary-Standards Inc.

Membrane diameter	Membrane design	Membrane length (mm)	filter surface in m ² per module							
			M1 LM	M3 LM	M7 LM	M8 LM	M12 LM			
25.4 mm	7/6	1000	NW 25	0.13	NW 80	0.40	NW 100	0.92	-	-
		1200		0.16		0.48		1.11	-	-
	19/3.3	1000	0.20	0.60	1.40	-	-			
		1200	0.24	0.72	1.68	-	-			
	37/2	1000	0.23	0.70	1.62	-	-			
		1200	0.28	0.84	1.95	-	-			
41 mm	19/6	1200	NW 32	0.43	NW 125	1.29	NW 150	3.01	-	5.16
		1500		0.54		1.62		3.76	-	6.45
	37/3.8	1200	0.53	1.59	3.71	-	6.36			
		1500	0.67	2.01	4.69	-	8.04			
	61/2.5	1200	0.58	1.74	4.06	-	6.96			
		1500	0.72	2.16	5.04	-	8.64			
52 mm	19/8	1200	NW 40	0.57	NW 125 / NW 150	1.71	NW 200	4.56	NW 250	6.84
		1500		0.72		2.15		5.80		8.70
	61/4	1200	1.03	3.09	-	8.24	12.36			
		1500	1.29	3.87	-	10.32	15.48			
	85/3.3	1200	1.06	3.18	-	8.48	12.72			
		1500	1.32	3.97	-	10.57	15.86			
		1200	1.59	4.77	-	12.72	19.08			
		1500	1.99	5.97	-	15.92	23.88			

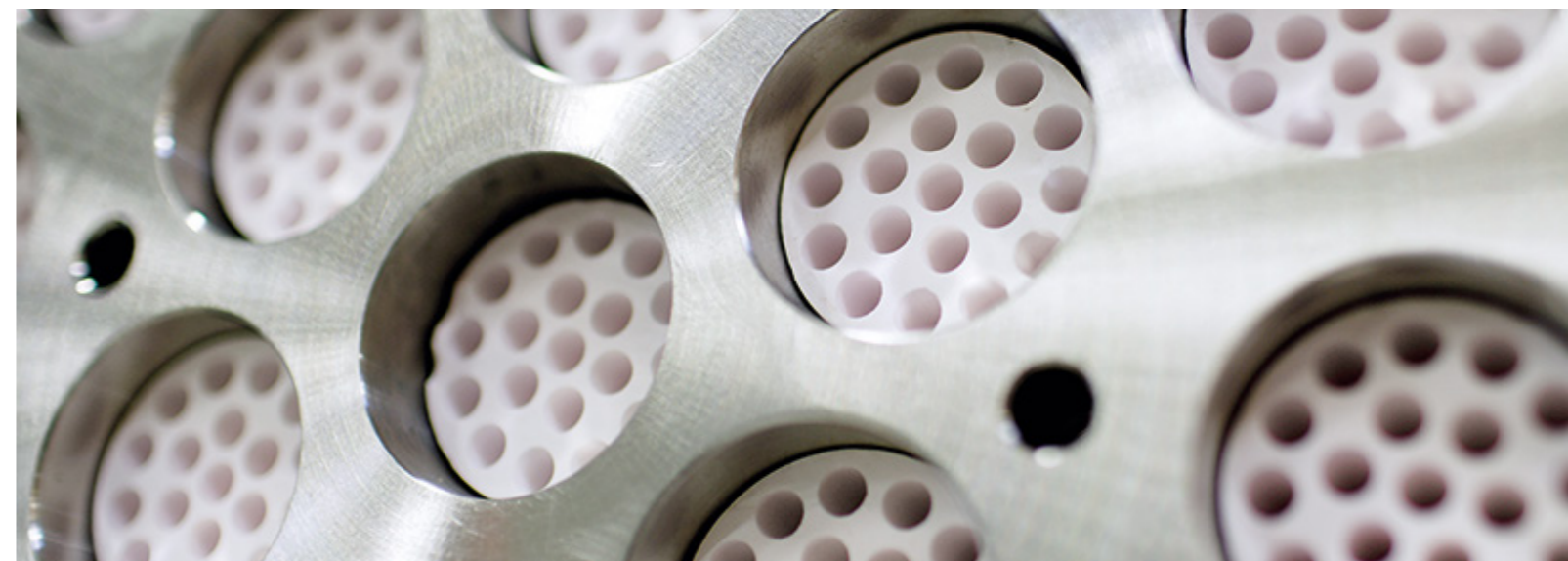
		filter surface in m ² per module						
		M19 LM	M23 LM	M26 LM	M29 LM	M39 LM	M57 LM	M92 LM
NW 200	NW 200	-	3.03	-	-	5.14	7.52	12.13
		-	3.64	-	-	6.17	9.02	14.57
		-	4.60	-	-	7.80	11.40	18.12
		-	5.52	-	-	9.36	13.47	21.75
		-	5.35	-	-	9.07	13.25	21.39
		-	6.42	-	-	10.89	15.90	25.67
NW 250	NW 300	8.17	-	11.18	-	-	-	-
		10.21	-	14.04	-	-	-	-
		10.07	-	13.78	-	-	-	-
		12.73	-	17.42	-	-	-	-
		11.02	-	15.08	-	-	-	-
		13.68	-	18.72	-	-	-	-
NW 300	NW 400	10.83	-	-	16.53	-	-	-
		13.68	-	-	20.88	-	-	-
		19.57	-	-	29.87	-	-	-
		24.51	-	-	37.41	-	-	-
		20.14	-	-	30.74	-	-	-
		25.08	-	-	38.28	-	-	-
		30.21	-	-	46.11	-	-	-
		37.81	-	-	57.71	-	-	-

- > Further membrane lengths (up to 1.5 m)
- > other types of modules and technical drawings on request
- > drawings of housings are not to scale and are for informational purposes only

SEALING

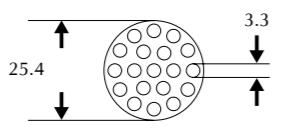
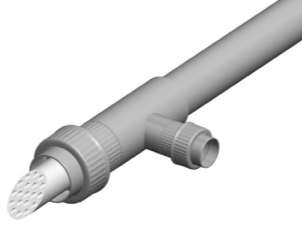
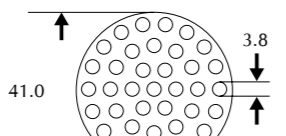
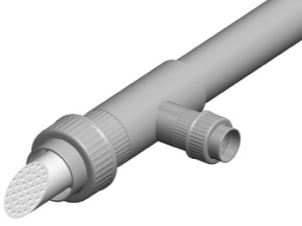
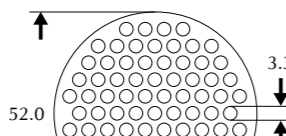
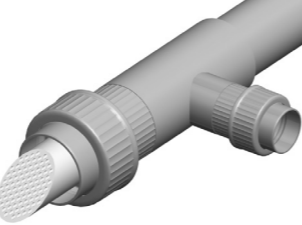


sanitary design
atech LM-modules designed to 3-A-Sanitary- Standard cover all sanitary aspects for their application in micro- and ultrafiltration processes in Milk and Dairy Industry, Pharmaceutical, Chemical and Food Industry.



PLASTIC HOUSINGS WITH CERAMIC MEMBRANES

technical data

Type of Module	Technical Data	Membrane Design	Available Membranes filter surface (m ²)	Illustration
M1-PVC-C 19/3.3-1200	Material: PVC-C Max. Pressure: PN 10 Max. Temperature: 80°C		1/16 (0.06) 7/6 (0.16) 19/3.3 (0.24) 37/2 (0.28)	
M1-PVC-C 37/3.8-1200	Material: PVC-C Max. Pressure: PN 10 Max. Temperature: 80°C		19/6 (0.43) 37/3.8 (0.53) 61/2.5 (0.58)	
M1-PVC-C 85/3.3-1200	Material: PVC-C Max. Pressure: PN 10 Max. Temperature: 80°C		19/8 (0.58) 85/3.3 (1.06) 211/2 (1.59)	

membrane lengths available up to 1.500 mm



OVERALL VIEW

Technical data of atech standard pressure vessels

Material	Stainless steel of diverse ranges, 316 Ti/AISI (1.4571) and 316 L/AISI (1.4404)
Filter surfaces	From 0.05 m ² to approx. 60 m ² per vessel
Pressure rating	PN 10 @ 110°C
Overall length	Up to 1500 mm
Fittings	Dairy coupling /threaded fittings/flanges
Sealings	Sanitary design (conical sealing), industrial design (o-ring)
We will also manufacture customized vessels for your particular needs (like high pressure design).	



ENGINEERING

The scope of our activities includes planning, design, calculation and manufacturing according to different regulations and directives, such as:

AD 2000-HP 0

German regulations concerning the principles for design, manufacture and the related inspections of pressure vessels.

2014/68/EU

European Pressure Equipment Directive concerning the principles for design, manufacture and the related inspections of pressure vessels.

ASME BPVC, Section VIII

Boiler and Pressure Vessel Code according to the American Society of Mechanical Engineers concerning the principles for design, manufacture and the related inspections of pressure vessels.

DIN EN ISO 3834-3

German quality requirements for fusion welding for metallic material

RETROFIT

Upgrading existing membranes for more competitiveness

Problem-free replacement/smooth substitution of competitors' membranes – irrespective of which manufacturer they are from. Due to a huge variety of adapters/gaskets we will enable you to continue with your existing pressure vessel equipped with new membranes.

A fundamental refurbishment with a low cost basis! We ensure that our membranes again deliver best possible filtration results.

SURVEY

Technical data of atech Al₂O₃- membranes

Support material	α-Al ₂ O ₃	
Membrane material	MF: α-Al ₂ O ₃ ; ZrO ₂ ; TiO ₂	UF: TiO ₂ ; ZrO ₂ ; Al ₂ O ₃
Pore diameter / Molecular Weight Cut Off	1.2; 0.8; 0.4; 0.2; 0.1 μm	0.05 μm; 150kD; 100kD; 25kD; 15kD; 5kD; 1kD
Overall length	up to 1500 mm	
pH- stability	0 to 14	
All membrane designs are suitable for steam sterilisation ≥ 121°C / approx 250° F.		

Type	Design (mm)	Amount of channels	Length (mm)	Filter surface per element (m ²)	Illustration
1/6		1	1000	approx. 0.019	
			1200	approx. 0.023	
1/16		1	1000	approx. 0.05	
			1200	approx. 0.06	
7/6		7	1000	approx. 0.13	
			1200	approx. 0.16	
19/3.3		19	1000	approx. 0.20	
			1200	approx. 0.24	
37/2		37	1000	approx. 0.23	
			1200	approx. 0.28	
19/4		19	1000	approx. 0.24	
			1200	approx. 0.29	
19/6		19	1200	approx. 0.43	
			1500	approx. 0.54	

GENERAL INFORMATION

atech tubular ceramic membranes meet regulatory requirements for food contact according European Regulation no. 1935/2004 and FDA requirements 21 CFR, 170-199. atech crossflow membranes modules are authorized to bear the 3-A symbol for complying fully with the 3-A Sanitary Standard (certificate no. 3674)



Type	Design (mm)	Amount of channels	Standard length (mm)*	Filter surface per element (m ²)	Illustration
37/3.8		37	1200	approx. 0.53	
			1500	approx. 0.67	
61/2.5		61	1200	approx. 0.58	
			1500	approx. 0.72	
19/8		19	1200	approx. 0.57	
			1500	approx. 0.72	
61/4		61	1200	approx. 1.03	
			1500	approx. 1.29	
85/3.3		85	1200	approx. 1.06	
			1500	approx. 1.32	
211/2		211	1200	approx. 1.59	
			1500	approx. 1.99	

* other lengths on request



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