

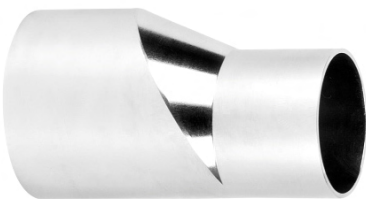


Aseptic program

● pipes DIN 11866 ...

● bends, reducers, T-pieces ...

● unions, sightglasses, valves ...



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ASEPTIC PROGRAM

PIPE ROWS

DIN 11866-A (DIN 11850)				DIN 11866-B (EN ISO 1127)				DIN 11866-C (ASME BPE)			
DN	A	B	S	DN	A	B	S	DN	A	B	S
2*	4,0	2,0	1,0	6	10,2	7,0	1,6	1/4"	6,35	4,57	0,89
4*	6,0	4,0	1,0	8	13,5	10,3	1,6	3/8"	9,53	7,75	0,89
6	8,0	6,0	1,0	10	17,2	14,0	1,6	1/2"	12,7	9,4	1,65
8	10,0	8,0	1,0	15	21,3	18,1	1,6	3/4"	19,05	15,75	1,65
10*	12,0	10,0	1,0	20	26,9	23,7	1,6	1"	25,4	22,1	1,65
10	13,0	10,0	1,5	25	33,7	29,7	2,0	1 1/2"	38,1	34,8	1,65
15	19,0	16,0	1,5	32	42,4	38,4	2,0	2"	50,8	47,5	1,65
20	23,0	20,0	1,5	40	48,3	44,3	2,0	2 1/2"	63,5	60,2	1,65
25	29,0	26,0	1,5	50	60,3	56,3	2,0	3"	76,2	72,9	1,65
32	35,0	32,0	1,5	65	76,1	72,1	2,0	4"	101,6	97,38	2,11
40	41,0	38,0	1,5	80	88,9	84,3	2,3	6"	152,4	146,86	2,77
50	53,0	50,0	1,5	100	114,3	109,7	2,3				
65	70,0	66,0	2,0	125	139,7	134,5	2,6				
80	85,0	81,0	2,0	150	168,3	163,1	2,6				
100	104,0	100,0	2,0	200	219,1	213,9	2,6				
125	129,0	125,0	2,0								
150	154,0	150,0	2,0								
200	204,0	200,0	2,0								

*) non-standard acc. to DIN 11866

A ... outside tube diameter

B ... outside tube diameter

S ... wall thickness

QUALITY SURFACE STANDARD

		Inner surface	Filed of application
HQ line®		Ra ≤ 0,25 - 0,4 µm	For sterile applications in biotechnology, pharmaceutical and cosmetical industry (clean media).
STERI-line®		Ra ≤ 0,5 - 0,8 µm	Hygienic applications in biotechnology, pharmaceutical, cosmetical and food industry. Application: clean media, vacuum, dry clean air
MEDI-line®		Ra ≤ 0,8 - 1,6 µm	See above mentioned, without requirements of better inner surface.

INTERNAL AND EXTERNAL SURFACE CONDITIONS

Hygienic class according to DIN 11866		Inside surface / weld	Outside surface
H1 / H1o	HE1 / HE1o	Ra < 1,60 / 3,20 µm	bright finish or pickled, alternatively mech. polished (Ra < 1,0 µm)
H2 / H2o	HE2 / HE2o	Ra < 0,80 / 1,60 µm	
H3 / H3o	HE2 / HE3o	Ra < 0,80 / 0,80 µm	
H4 / H4o	HE3 / HE4o	Ra < 0,40 / 0,40 µm	
H5 / H5o	HE4 / HE5o	Ra < 0,25 / 0,25 µm	

"o" ... mech. polished outside

"E" ... e-polished inside

ASEPTIC PROGRAM

MATERIALS

DIN / EN	1.4301	AISI 316L	1.4404	1.4435	1.4571	1.4539
Norm	EN 10217-7	ASTM A 269/270	EN 10217-7	EN 10217-7	EN 10217-7	EN 10217-7
Steel grade	X5 Cr Ni 18-10	X2CrNiMo17-12-2	X2CrNiMo17-12-2	X2CrNiMo18-14-3	X6CrNiMoTi17-12-2	X1NiCrMoCu25-20-5
C	≤ 0,07 %	≤ 0,03 %	≤ 0,03 %	≤ 0,03 %	≤ 0,05 %	≤ 0,02 %
Si	≤ 1,0 %	≤ 0,75 %	≤ 1,0 %	≤ 1,0 %	≤ 1,0 %	≤ 0,7 %
Cr	17,0 - 19,5	16,0 - 18,0	16,5 - 18,5	17,0 - 19,0	16,5 - 18,5	19,0 - 21,0
Mo	----	2,0 - 3,0	2,0 - 2,5	2,5 - 3,0	2,0 - 2,5	4,0 - 5,0
Ni	8,0 - 10,5	10,0 - 14,0	10,0 - 13,0	12,5 - 15,0	10,0 - 13,5	24,0 - 26,0
P (max)	0,045	0,045	0,045	0,045	0,045	0,030
S (max)	0,030	0,030	0,030	0,030	0,030	0,010
Mn	2,0	2,0	2,0	2,0	2,0	2,0
Others	N ≤ 0,11	N ≤ 0,10	N ≤ 0,11	N ≤ 0,11	Ti 5	N ≤ 0,15 Cu 1,2 - 2,0

SEALS / GASKETS

AVAILABLE WITH CERTIFICATE FDA (ON REQUEST)

Material / colour	Hardness	Temp. resistance	Field of application	Remarks
EPDM (black)	70-75 ± 5 Shore A	-40 °C to 150 °C	hot water, steam (up to 180 °C)	food and pharmaceutical industry
FKM/FPM (back or red peroxidic cross-linked)	70-80 ± 5 Shore A	-40 °C to 200 °C	excellent resistance against aromatic solvent, chemicals, etc., as well as at high temperatures	solvent, chemical- and food industry
FFKM (back peroxidic cross-linked)	75 ± 5 Shore A	-10 °C to 230 °C	outstanding chemical and thermic resistance	solvent, chemical- and pharmaceutical industry
FVMQ (Fluor-silicone) (red, blue or transparent peroxidic cross-linked)	70-80 ± 5 Shore A	-50 °C to 150 °C	special resistance against aromatic hydrocarbon compounds, oils, etc., and at low temperatures	food industry
VMQ (Slikon-rubber) (milky white, transparent peroxidic cross-linked)	70-80 ± 5 Shore A	-50 °C to 200 °C	extreme resistance against high and low temperatures, only statically usable, low strength	recommendable for food- and pharmaceutical industry
PTFE (white)	51-60 ± 5 Shore D	-20 °C to 230 °C	food proof, extremely high temperatures, best chemical resistance, good gliding quality	creeping, food- and pharmaceutical industry
FKM/FEP obalené (black / transparent)	90-95 ± 5 Shore A	-20 °C to 204 °C	refer to PTFE	comparable with PTFE, but not creeping

DELTA FERRIT CLASS

DF - Class	Delta ferrite content at condition of delivery
1	≤ 3,0 %
2	≤ 1,0 %
3	≤ 0,5 %