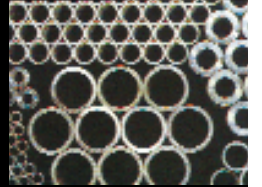


TUBING SPECIALIST



MERINOX

STAINLESS TUBES

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A summary of our business concept

The MERINOX Company faces fierce opposition in the market place. Our competitors are often very large companies. The challenges are tough.

To us it is not enough to be as good as the rest. We have to be the best. We approach this situation armed with our unique weapons: We are a private company with very committed owners. We have a dedicated staff, always ready for action. We are flexible, fleet-footed and customer oriented.

To us, every customer is an important customer. They know this. Therefore, they demand a lot from us. We love it. It makes us active and competitive.

Starting point is our commitment to quality

The MERINOX Company builds its operations on two cornerstones: Products and services of the highest quality. Combined with an optimal service level and security of supply. The only way we can win the confidence of our customers is by means of an uncompromising commitment to quality. So we sell ourselves: Our quality level must, at least, match our customer's demands. And preferably exceed them. Absolute security of supply is just as important for our success. Our goal is 100% guaranteed delivery of goods. If there is ever a risk of any delay, the whole company swings into action to avoid problems for the customer at any cost.

Naturally all our products are manufactured and supplied in accordance with and to quality assurance procedures based on ISO 9002 (BS 5750 PT 11)

All Merinox employees have signed an agreement personally guaranteeing their commitment to the MERINOX policy of making sure that the company lives up to the customer's expectations to 100%.

MARKET SEGMENTS

MERINOX customers are to be found basically in the following market segments:

- Chemical Industry
- Petrochemical Industry (Offshore)
- Hydraulic Circuits
- Process Industry
- Electric Appliances
- Industrial Furnaces
- Instrument Industry:
 - Analyser Systems
 - Measuring Instruments
 - Pyrometry
 - Manometry
 - Medical Equipment



CAPILLARY, INSTRUMENT, PRECISION AND HYDRAULIC TUBES

O.D. mm	Wall mm	I.D. mm	Inch Dimensions od x wall	+/- kg p/m*1	Work.pr. pres./ in bar*2	Qualities											
						316 L	304 L	321	316Ti	904L	6Mo	400	600	825	Hast.	Titan.	
						316/H	304/H	321H			254SMO			San.28	C276	Gr.2	
0,10	x	0,025	0,05	0,00004	1027		x										
0,20	x	0,080	0,04	0,00024	1027		x	x									
0,30	x	0,075	0,15	0,00042	642		x	x									
0,30	x	0,080	0,14	0,00044	684		x	x									
0,30	x	0,100	0,10	0,001	856		x	x	x								
0,40	x	0,100	0,20	0,001	642	x	x	x	x								
0,50	x	0,100	0,30	0,001	513		x	x	x								
0,50	x	0,150	0,20	0,001	770		x	x	x								
0,55	x	0,090	0,37	0,001	420		x										
0,60	x	0,100	0,40	0,001	428		x	x	x								
0,60	x	0,130	0,34	0,002	556		x	x	x								
0,62	x	0,150	0,32	0,002	621		x	x	x								
0,70	x	0,125	0,45	0,002	458		x		x								
0,70	x	0,150	0,40	0,002	550		x		x								
0,76	x	0,130	0,50	0,002	439		x	x	x								
0,79	x	0,102	0,59	0,002	331	x	x										
0,79	x	0,203	0,38	0,003	660	x	x										
0,80	x	0,150	0,50	0,002	481		x		x								
0,80	x	0,175	0,45	0,003	561		x										
0,80	x	0,250	0,30	0,003	802	x	x	x	x								
0,80	x	0,350	0,10	0,004	1123		x	x	x								
0,90	x	0,200	0,50	0,004	570	x	x	x	x								
1,00	x	0,100	0,80	0,002	257	x	x		x								
1,00	x	0,150	0,70	0,003	385		x										
1,00	x	0,200	0,60	0,004	513	x	x										
1,00	x	0,250	0,50	0,005	642	x	x		x								
1,00	x	0,300	0,40	0,005	770		x	x	x								
1,00	x	0,350	0,30	0,006	898		x	x	x								
1,10	x	0,200	0,70	0,005	467		x		x								
1,20	x	0,200	0,80	0,005	428	x	x										
1,20	x	0,450	0,30	0,008	963		x	x	x								
1,30	x	0,225	0,85	0,006	444		x		x								
1,30	x	0,250	0,80	0,007	494		x	x	x								
1,40	x	0,200	1,00	0,006	367	x	x	x	x								
1,50	x	0,150	1,20	0,005	257		x	x	x								
1,50	x	0,200	1,10	0,007	342		x		x								
1,50	x	0,250	1,00	0,008	428		x	x	x								
1,50	x	0,350	0,80	0,010	599		x	x	x								
1,50	x	0,400	0,70	0,011	684		x		x								
1,50	x	0,500	0,50	0,013	856	x	x		x								
1,59	x	0,200	1,19	0,007	323	x	x										
1,59	x	0,250	1,09	0,008	404	x	x	x									
1,59	x	0,310	0,97	0,010	500	x	x	x									
1,59	x	0,360	0,87	0,011	581	x	x										
1,59	x	0,410	0,77	0,012	662	x	x	x									
1,59	x	0,510	0,57	0,014	823	x	x										
1,59	x	0,710	0,17	0,016	1082	x	x										
1,60	x	0,200	1,20	0,007	321		x	x	x								
1,60	x	0,300	1,00	0,010	481		x	x	x								
1,60	x	0,500	0,60	0,014	802		x		x								
1,60	x	0,750	0,10	0,016	1203		x		x								
1,70	x	0,200	1,30	0,008	302		x	x	x								
1,80	x	0,250	1,30	0,010	356		x	x	x								
1,80	x	0,400	1,00	0,014	570		x		x								
1,90	x	0,250	1,40	0,010	338		x	x	x								
2,00	x	0,200	1,60	0,009	257	x	x	x	x								
2,00	x	0,250	1,50	0,011	321		x	x	x								
2,00	x	0,300	1,40	0,013	385		x	x									
2,00	x	0,500	1,00	0,019	642	x	x	x	x								
2,20	x	0,850	0,50	0,029	992	x	x	x									
2,20	x	0,300	1,60	0,014	350		x										
2,38	x	0,200	1,98	0,011	216	x	x										
2,38	x	0,310	1,76	0,016	334	x	x										

*1 Weight based on quality 316L, other qualities see page 16.

*2 Working pressure based on quality 316L by temperature 20 °C, other qualities see page 16.

CAPILLARY, INSTRUMENT, PRECISION AND HYDRAULIC TUBES

O.D. mm	Wall mm	I.D. mm	Inch Dimensions od x wall	+/- kg p/m*1	Work.pr. pres./ in bar*2	Qualities															
						316 L	304 L	321	316Ti	904L	6Mo	400	600	825	Hast.	Titan.					
						316/H	304/H	321H			254SMO			San.28	C276	Gr.2					
2,38	x	0,410	1,56	3/32" x 0,016"	0,020	442	x	x	x												
2,38	x	0,510	1,36	3/32" x 0,020"	0,024	550	x	x													
2,38	x	0,710	0,96	3/32" x 0,028"	0,030	766	x	x													
2,40	x	0,400	1,60		0,020	428		x	x	x											
2,50	x	0,200	2,10		0,012	205	x	x		x											
2,50	x	0,250	2,00		0,014	257	x	x	x	x											
2,50	x	0,300	1,90		0,017	308	x	x		x											
2,50	x	0,400	1,70		0,021	411	x	x		x											
2,50	x	0,500	1,50		0,025	513	x	x	x	x											
2,60	x	0,300	2,00		0,017	296		x		x											
2,80	x	0,400	2,00		0,024	367		x		x											
3,00	x	0,200	2,60		0,014	171	x	x	x	x											
3,00	x	0,250	2,50		0,017	214	x	x	x	x											
3,00	x	0,500	2,00		0,031	428	x	x	x	x	x	x	x								x
3,00	x	0,750	1,50		0,042	642		x	x	x											
3,00	x	1,000	1,00		0,050	856	x	x	x	x			x								
3,18	x	0,200	2,78	1/8" x 0,008"	0,015	161	x		x												
3,18	x	0,250	2,68	1/8" x 0,010"	0,018	202	x	x													
3,18	x	0,310	2,56	1/8" x 0,012"	0,022	250	x														
3,18	x	0,360	2,46	1/8" x 0,014"	0,025	291	x	x													
3,18	x	0,410	2,36	1/8" x 0,016"	0,028	331	x	x	x												
3,18	x	0,510	2,16	1/8" x 0,020"	0,034	412	x	x	x											x	x
3,18	x	0,710	1,76	1/8" x 0,028"	0,044	573	x	x	x		x	x	x	x	x				x	x	x
3,18	x	0,890	1,40	1/8" x 0,035"	0,051	718	x	x	x										x	x	x
3,18	x	1,240	0,70	1/8" x 0,048"	0,060	1001	x	x	x											x	
3,20	x	0,200	2,80		0,015	160		x	x	x											
3,20	x	0,400	2,40		0,028	321	x													x	
3,25	x	1,250	0,75		0,063	987		x													
3,50	x	0,375	2,75		0,029	275		x	x												
3,50	x	0,500	2,50		0,038	367		x	x	x											
3,50	x	0,600	2,30		0,044	440		x		x											
3,97	x	0,560	2,85	5/32" x 0,022"	0,048	362	x	x													
3,97	x	0,890	2,19	5/32" x 0,035"	0,069	575	x	x													
4,00	x	0,250	3,50		0,023	160		x	x	x											
4,00	x	0,500	3,00		0,044	321	x	x	x	x			x	x					x	x	
4,00	x	0,750	2,50		0,061	481		x		x											
4,00	x	1,000	2,00		0,075	642	x	x	x	x			x	x	x				x	x	
4,00	x	1,250	1,50		0,086	802		x	x												
4,00	x	1,500	1,00		0,094	963	x	x	x	x											
4,50	x	0,250	4,00		0,027	143		x	x	x											
4,50	x	0,500	3,50		0,050	285	x	x	x	x											
4,76	x	0,250	4,26	3/16" x 0,010"	0,028	135	x		x												
4,76	x	0,510	3,74	3/16" x 0,020"	0,054	275	x	x	x												
4,76	x	0,710	3,34	3/16" x 0,028"	0,072	383	x	x													
4,76	x	0,890	2,98	3/16" x 0,035"	0,086	480	x	x	x											x	
4,76	x	1,240	2,28	3/16" x 0,048"	0,109	669	x	x													
4,76	x	1,650	1,46	3/16" x 0,065"	0,128	890	x														
5,00	x	0,150	4,70		0,018	77		x		x											
5,00	x	0,200	4,60		0,024	103	x	x	x	x											
5,00	x	0,250	4,50		0,030	128		x	x	x											x
5,00	x	0,500	4,00		0,056	257	x	x	x	x			x	x							
5,00	x	0,750	3,50		0,080	385		x	x	x											
5,00	x	1,000	3,00		0,100	513	x	x	x	x			x	x							
5,00	x	1,500	2,00		0,131	770	x	x	x												
5,30	x	0,250	4,80		0,032	121	x		x												
5,50	x	1,000	3,50		0,113	467	x	x	x	x											
6,00	x	0,15	5,70		0,022	64	x	x		x											
6,00	x	0,25	5,50		0,036	107	x	x	x	x											
6,00	x	0,40	5,20		0,056	171	x	x		x											
6,00	x	0,50	5,00		0,069	214	x	x	x	x										x	
6,00	x	0,75	4,50		0,099	321	x	x		x				x	x						
6,00	x	0,80	4,40		0,104	342	x	x		x											
6,00	x	1,00	4,00		0,125	428	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

*1 Weight based on quality 316L, other qualities see page 16.

*2 Working pressure based on quality 316L by temperature 20 °C, other qualities see page 16.

CAPILLARY, INSTRUMENT, PRECISION AND HYDRAULIC TUBES

O.D. mm	Wall mm	I.D. mm	Inch Dimensions od x wall	+/- kg p/m*1	Work.pr. pres./ in bar*2	Qualities											
						316 L	304 L	321	316Ti	904L	6Mo	400	600	825	Hast.	Titan.	
						316/H	304/H	321H			254SMO			San.28	C276	Gr.2	
6,00	x	1,50	3,00	0,169	642	x	x	x	x							x	x
6,00	x	2,00	2,00	0,200	856	x	x		x								
6,00	x	2,50	1,00	0,219	1069	x	x		x								
6,35	x	0,41	5,53	0,061	166	x											
6,35	x	0,51	5,33	0,075	206	x	x	x									
6,35	x	0,71	4,93	0,100	287	x	x	x		x	x						
6,35	x	0,89	4,57	0,122	360	x	x	x		x	x	x	x	x	x	x	x
6,35	x	1,24	3,87	0,159	501	x	x	x		x	x	x	x	x	x	x	x
6,35	x	1,65	3,05	0,194	667	x	x	x		x	x	x	x	x	x	x	x
6,35	x	2,11	2,13	0,224	853	x	x	x						x			
6,35	x	2,39	1,57	0,237	966	x											
6,35	x	2,64	1,07	0,245	1067	x											
6,50	x	0,50	5,50	0,075	197	x	x	x									
6,50	x	1,00	4,50	0,138	395	x	x					x					
7,00	x	0,50	6,00	0,081	183	x	x	x	x			x					
7,00	x	0,75	5,50	0,117	275	x	x										
7,00	x	0,80	5,40	0,124	293	x	x		x								
7,00	x	1,00	5,00	0,150	367	x	x	x	x			x	x				
7,00	x	1,20	4,60	0,174	440	x	x	x	x								
7,94	x	0,51	6,92	0,095	165	x	x	x									
7,94	x	0,71	6,52	0,129	230	x											
7,94	x	0,89	6,16	0,157	288	x										x	
7,94	x	1,24	5,46	0,208	401	x		x									
7,94	x	1,65	4,64	0,260	533	x		x									
7,94	x	2,11	3,72	0,308	682	x											
7,94	x	2,64	2,66	0,350	853	x											
8,00	x	0,25	7,50	0,049	80	x	x	x	x								
8,00	x	0,50	7,00	0,094	160	x	x	x	x			x	x			x	
8,00	x	0,75	6,50	0,136	241	x	x	x	x								
8,00	x	1,00	6,00	0,175	321	x	x	x	x	x	x	x	x	x	x	x	x
8,00	x	1,50	5,00	0,244	481	x	x	x	x			x					
8,00	x	2,00	4,00	0,300	642	x	x	x	x								
8,00	x	2,50	3,00	0,344	802	x	x	x	x								
8,00	x	3,00	2,00	0,376	963	x			x								
9,00	x	0,50	8,00	0,106	143	x	x	x	x								
9,00	x	1,00	7,00	0,200	285	x		x	x			x	x				
9,00	x	1,50	6,00	0,282	428	x	x	x	x								
9,53	x	0,51	8,51	0,115	137	x		x									
9,53	x	0,71	8,11	0,157	191	x	x	x				x					
9,53	x	0,89	7,75	0,193	240	x	x	x		x	x	x	x	x	x	x	x
9,53	x	1,24	7,05	0,257	334	x	x	x		x	x	x	x	x			
9,53	x	1,65	6,23	0,326	444	x	x	x		x	x	x			x	x	
9,53	x	2,11	5,31	0,392	568	x	x							x			
9,53	x	2,65	4,23	0,457	714	x		x									
9,53	x	3,18	3,17	0,506	856	x											
10,00	x	0,20	9,60	0,049	51	x	x		x								
10,00	x	0,25	9,50	0,061	64	x	x	x	x								
10,00	x	0,50	9,00	0,119	128	x	x	x	x			x				x	x
10,00	x	0,80	8,40	0,184	205	x	x										x
10,00	x	1,00	8,00	0,225	257	x	x	x	x	x	x	x	x	x	x	x	x
10,00	x	1,50	7,00	0,319	385	x	x	x	x	x	x	x	x	x	x	x	x
10,00	x	2,00	6,00	0,401	513	x	x	x	x			x	x				
10,00	x	2,50	5,00	0,470	642	x	x										
10,00	x	3,00	4,00	0,526	770	x			x								
10,20	x	2,00	6,20	0,411	503	x	x		x								
10,31	x	2,31	5,69	0,463	575	x											
11,00	x	0,50	10,00	0,131	117	x	x	x	x			x					
11,00	x	1,00	9,00	0,250	233	x	x	x	x								
11,00	x	1,50	8,00	0,357	350	x			x								
11,00	x	2,00	7,00	0,451	467	x			x								
11,11	x	0,71	9,69	0,185	164	x		x									
11,11	x	0,89	9,33	0,228	206	x											
11,11	x	1,24	8,63	0,306	286	x	x										

*1 Weight based on quality 316L, other qualities see page 16.

*2 Working pressure based on quality 316L by temperature 20 °C, other qualities see page 16.

CAPILLARY, INSTRUMENT, PRECISION AND HYDRAULIC TUBES

O.D. mm		Wall mm	I.D. mm	Inch Dimensions od x wall	+/- kg p/m*1	Work.pr. pres./ in bar*2	Qualities													
							316 L	304 L	321	316Ti	904L	6Mo	400	600	825	Hast.	Titan.			
							316/H	304/H	321H			254SMO			San.28	C276	Gr.2			
11,11	x	1,65	7,81	7/16" x 0,065"	0,391	381	x													
11,11	x	2,11	6,89	7/16" x 0,083"	0,476	487	x													
12,00	x	0,20	11,60		0,059	43		x												
12,00	x	0,25	11,50		0,074	53	x	x												
12,00	x	0,50	11,00		0,144	107	x	x	x											
12,00	x	0,75	10,50		0,211	160	x	x												x
12,00	x	1,00	10,00		0,275	214	x	x	x	x										x
12,00	x	1,50	9,00		0,394	321	x	x	x	x	x									x
12,00	x	2,00	8,00		0,501	428	x	x	x	x	x									x
12,00	x	2,50	7,00		0,595	535	x	x	x	x										
12,00	x	3,00	6,00		0,676	642	x	x												
12,00	x	4,00	4,00		0,801	856	x		x											
12,70	x	0,25	12,20	1/2" x 0,010"	0,078	51	x													
12,70	x	0,51	11,68	1/2" x 0,020"	0,156	103	x	x	x											
12,70	x	0,71	11,28	1/2" x 0,028"	0,213	143	x	x	x											
12,70	x	0,89	10,92	1/2" x 0,035"	0,263	180	x	x	x		x	x								x
12,70	x	1,24	10,22	1/2" x 0,049"	0,356	251	x	x	x		x	x	x							x
12,70	x	1,65	9,40	1/2" x 0,065"	0,457	333	x	x	x		x	x	x							x
12,70	x	2,11	8,48	1/2" x 0,083"	0,560	426	x	x			x	x								
12,70	x	2,39	7,92	1/2" x 0,094"	0,617	483	x				x	x								
12,70	x	2,64	7,42	1/2" x 0,104"	0,665	534	x													
12,70	x	3,18	6,34	1/2" x 0,125"	0,758	643	x													
13,00	x	0,25	12,50		0,080	49		x												
13,00	x	0,50	12,00		0,157	99	x	x	x	x										
13,00	x	1,00	11,00		0,300	197	x	x	x	x										
13,00	x	1,50	10,00		0,432	296	x	x												
13,00	x	2,00	9,00		0,551	395	x	x												
14,00	x	0,50	13,00		0,169	92	x	x												
14,00	x	1,00	12,00		0,326	183	x	x	x	x										
14,00	x	1,50	11,00		0,470	275	x	x	x	x										
14,00	x	2,00	10,00		0,601	367	x	x	x	x										
14,00	x	2,50	9,00		0,720	458	x	x												
14,00	x	3,00	8,00		0,826	550	x													
14,28	x	0,89	12,50	9/16" x 0,035"	0,298	160	x													
14,28	x	1,24	11,80	9/16" x 0,049"	0,405	223	x													
14,28	x	1,65	10,98	9/16" x 0,065"	0,522	297	x													
14,28	x	2,11	10,06	9/16" x 0,083"	0,643	379	x													
15,00	x	0,50	14,00		0,182	86	x													
15,00	x	1,00	13,00		0,351	171	x	x	x	x										
15,00	x	1,50	12,00		0,507	257	x	x	x	x										
15,00	x	2,00	11,00		0,651	342	x	x	x	x										
15,00	x	2,50	10,00		0,783	428	x	x	x	x										
15,00	x	3,00	9,00		0,901	513	x	x	x	x										
15,00	x	4,00	7,00		1,102	684	x													
15,00	x	5,00	5,00		1,252	856	x													
15,88	x	0,89	14,10	5/8" x 0,035"	0,334	144	x													
15,88	x	1,24	13,40	5/8" x 0,049"	0,455	200	x													
15,88	x	1,65	12,58	5/8" x 0,065"	0,588	267	x													
15,88	x	2,11	11,66	5/8" x 0,083"	0,728	341	x													
15,88	x	2,64	10,60	5/8" x 0,104"	0,875	427	x													
15,88	x	3,18	9,52	5/8" x 0,125"	1,011	514	x													
16,00	x	0,50	15,00		0,194	80	x	x	x	x										
16,00	x	1,00	14,00		0,376	160	x	x	x	x	x									
16,00	x	1,50	13,00		0,545	241	x	x	x	x										
16,00	x	2,00	12,00		0,701	321	x	x	x	x										
16,00	x	2,50	11,00		0,845	401	x	x	x	x										
16,00	x	3,00	10,00		0,977	481	x													
16,00	x	4,00	8,00		1,202	642	x													
16,00	x	5,00	6,00		1,377	802	x													
17,00	x	0,50	16,00		0,207	75		x	x	x										
17,00	x	1,00	15,00		0,401	151	x	x	x	x										
17,00	x	1,50	14,00		0,582	226		x	x	x										
18,00	x	0,50	17,00		0,219	71	x	x	x	x										

*1 Weight based on quality 316L, other qualities see page 16.

*2 Working pressure based on quality 316L by temperature 20 °C, other qualities see page 16.

CAPILLARY, INSTRUMENT, PRECISION AND HYDRAULIC TUBES

O.D. mm	Wall mm	I.D. mm	Inch Dimensions od x wall	+/- kg p/m*1	Work.pr. pres./ in bar*2	Qualities											
						316 L	304 L	321	316Ti	904L	6Mo	400	600	825	Hast.	Titan.	
						316/H	304/H	321H			254SMO			San.28	C276	Gr.2	
18,00	x	1,00	16,00	0,426	143	x	x	x	x								
18,00	x	1,50	15,00	0,620	214	x	x	x	x			x	x				x
18,00	x	2,00	14,00	0,801	285	x	x	x	x				x				
18,00	x	2,50	13,00	0,970	356	x	x		x								
18,00	x	3,00	12,00	1,127	428	x	x		x								
18,00	x	4,00	10,00	1,402	570	x			x								
18,00	x	5,00	8,00	1,628	713	x			x								
19,00	x	0,50	18,00	0,232	68	x	x		x								
19,00	x	1,50	16,00	0,657	203	x			x								
19,05	x	0,51	18,03	0,237	69	x											x
19,05	x	0,71	17,63	0,326	96	x				x	x	x				x	x
19,05	x	0,89	17,27	0,405	120	x	x	x		x	x	x	x			x	x
19,05	x	1,24	16,57	0,553	167	x	x	x		x	x	x	x			x	x
19,05	x	1,65	15,75	0,719	222	x	x	x		x	x	x	x			x	x
19,05	x	2,11	14,83	0,895	284	x	x	x		x	x						
19,05	x	2,39	14,27	0,997	322	x	x										
19,05	x	2,64	13,77	1,085	356	x											
19,05	x	3,18	12,69	1,264	428	x											
20,00	x	0,50	19,00	0,244	64	x	x		x								
20,00	x	1,00	18,00	0,476	128	x	x	x	x								
20,00	x	1,50	17,00	0,695	193	x	x	x	x								
20,00	x	2,00	16,00	0,901	257	x	x	x	x	x	x	x	x				
20,00	x	2,50	15,00	1,096	321	x	x	x	x								
20,00	x	3,00	14,00	1,277	385	x			x								
20,00	x	4,00	12,00	1,603	513	x			x								
20,00	x	5,00	10,00	1,878	642	x			x								
22,00	x	0,50	21,00	0,269	58	x	x	x	x								
22,00	x	1,00	20,00	0,526	117	x	x	x	x								
22,00	x	1,50	19,00	0,770	175	x	x	x	x								
22,00	x	2,00	18,00	1,002	233	x	x	x	x								
22,00	x	2,50	17,00	1,221	292	x	x		x								
22,00	x	3,00	16,00	1,427	350	x			x								
22,00	x	4,00	14,00	1,803	467	x			x								
22,00	x	5,00	12,00	2,128	583	x			x								
22,23	x	0,89	20,45	0,476	103	x		x									
22,23	x	1,24	19,75	0,652	143	x	x										
22,23	x	1,65	18,93	0,850	191	x	x										
22,23	x	2,11	19,01	1,063	238	x	x	x									
23,00	x	0,50	22,00	0,282	56	x	x		x								
23,00	x	1,00	21,00	0,551	112	x	x	x	x								
23,00	x	1,50	20,00	0,808	167	x	x	x	x								
24,00	x	1,00	22,00	0,576	107	x	x	x	x								
24,00	x	1,50	21,00	0,845	160	x	x	x	x								
24,00	x	2,00	20,00	1,102	214	x	x	x	x				x	x			
24,00	x	2,50	19,00	1,346	267	x	x		x								
24,00	x	3,00	18,00	1,578	321	x			x								
25,00	x	0,50	24,00	0,307	51	x			x								
25,00	x	1,00	23,00	0,601	103	x											
25,00	x	1,50	22,00	0,883	154	x											
25,00	x	2,00	21,00	1,152	205	x											
25,00	x	2,50	20,00	1,409	257	x											
25,00	x	3,00	19,00	1,653	308	x											
25,00	x	4,00	17,00	2,103	411	x											
25,00	x	5,00	15,00	2,504	513	x											
25,40	x	0,51	24,38	0,318	52	x	x	x									
25,40	x	0,71	23,98	0,439	72	x	x	x									x
25,40	x	0,89	23,62	0,546	90	x	x	x									x
25,40	x	1,24	22,92	0,750	125	x	x	x									x
25,40	x	1,65	22,10	0,981	167	x	x	x		x	x	x	x				x
25,40	x	2,11	21,18	1,231	213	x	x							x	x		x
25,40	x	2,39	20,62	1,377	242	x											
25,40	x	2,64	20,12	1,505	267	x											
25,40	x	3,18	19,04	1,769	321	x	x										

*1 Weight based on quality 316L, other qualities see page 16.

*2 Working pressure based on quality 316L by temperature 20 °C, other qualities see page 16.

CAPILLARY, INSTRUMENT, PRECISION AND HYDRAULIC TUBES

O.D. mm	Wall mm	I.D. mm	Inch Dimensions od x wall	+/- kg p/m ^{*1}	Work.pr. pres./ in bar ^{*2}	Qualities															
						316 L	304 L	321	316Ti	904L	6Mo	400	600	825	Hast.	Titan.					
						316/H	304/H	321H			254SMO			San.28	C276	Gr.2					
25,40	x	6,35	12,70	1" x 0,250"	3,029	642	x														
26,00	x	1,00	24,00		0,626	99	x	x	x	x											
26,00	x	2,00	22,00		1,202	197	x	x	x	x											
26,00	x	3,00	20,00		1,728	296	x	x	x	x											
27,00	x	0,50	26,00		0,332	48	x			x											
27,00	x	3,50	20,00		2,060	333	x			x											
28,00	x	1,00	26,00		0,676	92	x	x		x											
28,00	x	1,50	25,00		0,995	138	x	x	x	x			x							x	
28,00	x	2,00	24,00		1,302	183	x	x	x	x				x							
28,00	x	2,50	23,00		1,596	229	x	x	x	x											
28,00	x	3,00	22,00		1,878	275	x	x		x											
28,00	x	4,00	20,00		2,404	367	x	x		x											
28,00	x	5,00	18,00		2,880	458	x			x											
28,58	x	1,65	25,28	1 1/8" x 0,065"	1,113	148	x														
28,58	x	2,11	24,36	1 1/8" x 0,083"	1,399	189	x														
29,00	x	1,50	26,00		1,033	133	x	x		x											
29,00	x	2,00	25,00		1,352	177	x	x	x	x											
30,00	x	0,50	29,00		0,369	43	x	x		x											
30,00	x	1,00	28,00		0,726	86	x	x	x	x											
30,00	x	1,50	27,00		1,070	128	x	x	x	x											
30,00	x	2,00	26,00		1,402	171	x	x	x	x											
30,00	x	2,50	25,00		1,722	214	x	x		x											
30,00	x	3,00	24,00		2,028	257	x	x		x				x			x				
30,00	x	4,00	22,00		2,604	342	x	x		x											
30,00	x	5,00	20,00		3,130	428	x			x											
30,00	x	6,00	18,00		3,606	513	x			x											
31,75	x	1,24	29,27	1 1/4" x 0,049"	0,947	100	x														
31,75	x	1,65	28,45	1 1/4" x 0,065"	1,244	133	x														x
31,75	x	2,11	27,53	1 1/4" x 0,083"	1,566	171	x			x											x
31,75	x	2,64	26,47	1 1/4" x 0,104"	1,924	213	x														
31,75	x	3,18	25,39	1 1/4" x 0,125"	2,275	257	x														
32,00	x	1,50	29,00		1,146	120	x	x		x											
32,00	x	2,00	28,00		1,502	160	x	x	x	x											
32,00	x	2,50	27,00		1,847	201	x	x		x											
32,00	x	3,00	26,00		2,178	241	x			x											
33,00	x	1,50	30,00		1,183	117	x	x		x				x							
34,00	x	1,50	31,00		1,221	113	x	x		x											
34,00	x	2,00	30,00		1,603	151	x	x		x											
34,00	x	2,50	29,00		1,972	189	x			x											
34,00	x	3,50	27,00		2,673	264	x			x											
34,00	x	4,00	26,00		3,005	302	x			x											
34,00	x	5,00	24,00		3,631	377	x			x											
34,93	x	1,65	31,63	13/8" x 0,065"	1,375	121	x														
34,93	x	2,11	30,71	13/8" x 0,083"	1,734	155	x														
35,00	x	0,50	34,00		0,432	37	x			x											
35,00	x	1,00	33,00		0,851	73	x	x	x	x											
35,00	x	1,50	32,00		1,258	110	x	x	x	x											
35,00	x	2,00	31,00		1,653	147	x	x	x	x											
35,00	x	2,50	30,00		2,035	183	x	x	x	x											
35,00	x	3,00	29,00		2,404	220	x	x		x											
35,00	x	4,00	27,00		3,105	293	x	x		x											
35,00	x	5,00	25,00		3,756	367	x			x											
36,00	x	2,00	32,00		1,703	143	x	x	x	x											
36,00	x	3,00	30,00		2,479	214	x			x											
38,00	x	1,00	36,00		0,926	68	x	x		x											
38,00	x	1,50	35,00		1,371	101	x	x	x	x											
38,00	x	2,00	34,00		1,803	135	x	x	x	x											
38,00	x	2,50	33,00		2,222	169	x	x	x	x											
38,00	x	3,00	32,00		2,629	203	x	x		x											
38,00	x	4,00	30,00		3,405	270	x			x											
38,00	x	5,00	28,00		4,132	338	x			x											
38,00	x	6,00	26,00		4,808	405	x			x											
38,10	x	1,24	35,62	1 1/2" x 0,049"	1,144	84	x	x	x												x

*1 Weight based on quality 316L, other qualities see page 16.

*2 Working pressure based on quality 316L by temperature 20 °C, other qualities see page 16.

Coiled Tubing

IN STAINLESS STEEL SEAMLESS AND WELDED EXECUTION.

According to ASTM A213 / A269 type 316/316L & 304/304L & 316Ti.
 According to DIN 17458, DIN 17457, D4 / T3 and D3 / T3, DIN 2462 / DIN 2463.
 Bright & annealed, hardness is max. 90 HRB, and /or acc. to NACE MR 01-75. Rev. 99
 Eddy current and hydrostatic tested on request.



On request

Alloy 321, 310/S, 904L, 400, 600, 825, C276, Titanium Gr.2, Duplex 31803 and Copper.

Applications

Measuring, control and monitoring systems in the chemical and petrochemical industries, shipbuilding and offshore industries and paper industries, etc.

Copper tubes

Available on coils of 30, 50 and 300 meters long, according to Sf-Cu, ASTM

B68/B75. In bright finish or with 1.00 mm black PVC cover. Sizes : 6.00 mm up to 12.00 mm and 1/4" up to 1/2".

Tube bundles

Available on request, produced from our stainless steel tubes : Pre-insulated single or assembled multiple tubing, with options for steam or electrical trace heating, providing a system for safe transmission and temperature control of gasses and liquids. Number of tubes available up to 12 core bundles.

STANDARD DIMENSIONS

available from stock

Metric Sizes		Imperial Sizes	
0.80 x 0.25 mm	8.00 x 1.00 mm	1/32" x 0.007"	3/8" x 0.048"
2.00 x 0.95 mm	10.00 x 1.00 mm	1/16" x 0.010"	3/8" x 0.065"
2.50 x 1.15 mm	10.00 x 1.50 mm	1/16" x 0.014"	1/2" x 0.035"
2.50 x 1.21 mm	12.00 x 1.00 mm	1/16" x 0.020"	1/2" x 0.048"
3.00 x 0.50 mm	12.00 x 1.50 mm	1/8" x 0.020"	1/2" x 0.065"
3.00 x 1.00 mm	12.00 x 2.00 mm	1/8" x 0.028"	3/4" x 0.035"
4.00 x 0.50 mm	14.00 x 1.00 mm	3/16" x 0.035"	3/4" x 0.048"
4.00 x 1.00 mm	15.00 x 1.00 mm	1/4" x 0.035"	3/4" x 0.065"
5.00 x 1.00 mm	16.00 x 1.00 mm	1/4" x 0.048"	1" x 0.048"
6.00 x 0.50 mm	18.00 x 1.50 mm	1/4" x 0.065"	1" x 0.065"
6.00 x 1.00 mm	20.00 x 1.50 mm	3/8" x 0.035"	1" x 0.080"

* The coil lengths are for 30 till 1.000 meters.

* The inside coil diameter is 5.00 mm and smaller between 200 and 400 mm.

* The inside coil diameter is 6.00 mm and above between 400 and 680 mm.

* On request we can connect the coils with an orbital weld, up to 10.000 mtr. long.

* All tubes are "standard industrial clean".

* Packing : as loose coil in carton boxes or on wooden drums.

Capillary tubing



Our current stock in capillary tube is available in seamless execution, in 304, 321, 316 and 316Ti, either harddrawn (hardness 260-330 HV) or annealed (hardness < 180 HV). The tolerances are according to DIN 17458/ISO 1127 D4/T3 and lengths are between 4 and 6 meters.

On request we also can supply: welded / redrawn (in same conditions)

Capillary tubing is produced by cold drawing in order to obtain:

- 1 - Smooth, bright surfaces
- 2 - Precise dimensional accuracy
- 3 - Thin wall
- 4 - A variety of mechanical properties and configurations

Tolerances:

O.D. = + 0.005" & - 0.000".

I.D. = + 0.000" & - 0.005".

Precision Cutting:

Burr free cutting to tolerances as close to +/- 0.0005".

Hardness:

- Bright annealed =
Yield strength 500 - 700 N/mm²
- Halfhard =
Yield strength 700 - 800 N/mm²
- Harddrawn =
Yield strength 800 - 900 N/mm²
- Extra hard = Yield strength >1000 N/mm²

Tube end possibilities

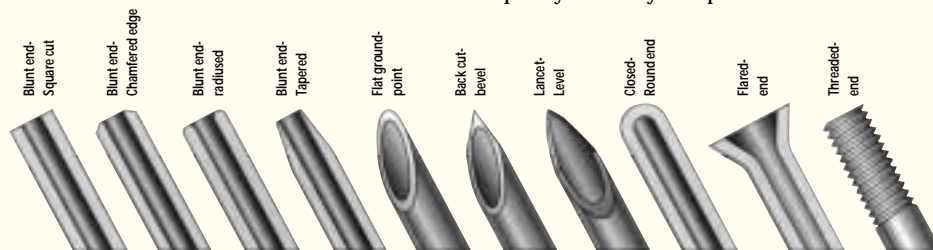
The point styles on needles and cannula can be used for a wide variety of applications such as: auto-sampling, automatic-dispensing, pressure reduction, in-vitro measurements and more.



Industrial Applications:

- Pyrometry
- Measuring
- Manometry
- Gaschromatography
- Medical Instruments
- Implants
- Hypodermic needles

Merinox has the experience and capability to supply intricate parts to exact specifications. By utilising the latest precision, high-speed equipment specially designed to cut, flare, reduce, expand, bulge, close, dimple, lance, slot, bend, coil, pierce or notch, we provide the highest quality at a very competitive cost.



Standards & tolerances

ASTM - STANDARDS

- A 213 Seamless ferritic and austenitic alloy steel boiler, superheater and heat exchanger tube.
- A 269 Seamless and welded austenitic stainless steel tubing for general service.
- A 312 Seamless and welded austenitic stainless steel pipe.
- A 511 Seamless stainless steel mechanical tubing.
- A 789 Seamless and welded ferritic-austenitic stainless steel tubing for general service. (duplex)
- B 161 Seamless nickel pipe and tube. (alloy 200, 201)
- B 163 Seamless nickel alloy condenser and heat exchanger tube. (alloy 200, 400, 600, 825)
- B 165 Seamless nickel-copper pipe and tube. (alloy 400)
- B 167 Seamless pipe and tube in nickel-chromium-iron. (alloy 600, 601)
- B 337 Seamless and welded titanium pipe and tube for general service.
- B 338 Seamless and welded titanium tube for condensers and heat exchangers.
- B 407 Seamless pipe and tube in nickel-iron-chromium. (alloy 800, 800H, 800HT)
- B 423 Seamless pipe and tube in nickel-iron-chromium-molybdenum-copper. (alloy 825)
- B 444 Seamless pipe and tube in nickel-chromium-molybdenum-columbium. (alloy 625)
- B 622 Seamless pipe and tube in nickel and nickel-cobalt. (alloy C276, C4)
- B 668 Seamless tube. (alloy 28)
- B 677 Seamless pipe and tube. (alloy 904L)

ASTM-, DIN-, ISO Tolerances

Tolerances according to ASTM A269 and A213 a.w. (Welded and seamless tube).

Outside Diam.	Tol. O.D.	Tol. wall	Tol. ovality	Tol. cut length
mm	mm	%	mm	mm
up to 12,7 mm	± 0,13 mm	± 15 %	-	+ 3,18 mm - 0 mm
12,7 mm up to 38,1 mm	± 0,13 mm	± 10 %	max, 1,65 mm	+ 3,18 mm - 0 mm
38,1 mm up to 88,9 mm	± 0,25 mm	± 10 %	max, 2,41 mm	+ 4,76 mm - 0 mm

Tolerances according to ASTM A312 (Welded and seamless st. st. pipe).

Outside diameter	Tolerance in the outside diameter
mm	mm
10,29 mm up to 48,26 mm	+ 0,40 mm- 0,79 mm
> 48,26 mm up to 114,30 mm	+ 0,79 mm- 0,79 mm
> 114,30 mm up to 219,08 mm	+ 1,59 mm- 0,79 mm
> 219,08 mm up to 457,20 mm	+ 2,38 mm- 0,79 mm

Tolerance in the wall thickness - 12,5% + tolerance not specified.

Tolerances according to EN/ISO 1127: D4/T3 and EN/ISO : D3/T3 (>20 mm).

Tolerance in the outside diameter		Tolerance in the wall thickness	
Classes	Tolerances	Classes	Tolerances
D0	± 2,0 %	T0	± 20,0 % / min. ± 1,0 mm
D1	± 1,5 % / min. ± 0,75 mm	T1	± 15,0 % / min. ± 0,6 mm
D2	± 1,0 % / min. ± 0,50 mm	T2	± 12,5 % / min. ± 0,4 mm
D3	± 0,75 % / min. ± 0,30 mm	T3	± 10,0 % / min. ± 0,2 mm
D4	± 0,5 % / min. ± 0,10 mm	T4	± 7,5 % / min. ± 0,15 mm
		T5	± 5,0 % / min. ± 0,1 mm

The ISO tolerances are printed in bold print.

Material Characteristics

STAINLESS STEEL

Stainless steel is not a specific material, it is the name given to a group of corrosion-resistant steels containing a minimum of 11% chromium, varying additions of nickel, molybdenum, titanium, niobium and other elements may also be present. The mechanical properties and behaviour in service of each type of steel depends upon its composition. Our stainless steel tubes contain nickel as well chromium, and are sometimes referred by the generic title 18/8, i.e. 18% chromium, 8% nickel, although the actual composition may vary widely from these figures. They are amongst the most highly corrosion-resistant materials available to be used for; oil industry, chemical and petrochemical industry, power plants, refineries, automotive, paper mills, construction and engineered products.

Limiting chemical composition, % , Alloy:	304	304L	321	316	316L	316Ti
Cr	18-20	18-20	17-20	16-18	16-18	16.5-18
Ni	8-11	8-13	9-13	11-14	10-15	10.5-12
Mn	2.00	2.00	2.00	2.00	2.00	1.90
Si	0.75	0.75	0.75	0.75	0.75	0.75
Mo	--	--	--	2.0-3.0	2.0-3.0	2.0-2.5
C	0.080	0.035	0.080	0.080	0.035	0.060
P	0.040	0.040	0.040	0.040	0.040	--
S	0.030	0.030	0.030	0.030	0.030	--
Ti	--	--	<0.7	--	--	0.3

Typical mechanical properties (annealed)	304	304L	321	316	316L	316Ti
Tensile Strength	500-700	460-680	500-730	510-710	460-690	500-730
Yield Strength (0.2% Offset)	195	180	200	205	190	210
Elongation, %	40	40	35	40	40	35

Alloy 310S (Wst. 1.4845)

Austenitic heat resistant stainless steel with good oxidation resistance and creep strength up to about 1000 °C in air, suitable for scaling. Used for furnaces, burners, ignition systems, chemical and petrochemical industry.

Limiting chemical composition, %	Cr	Ni	Mn	Si	C	Mo	P	S
			Max.	Max.	Max.	Max.	Max.	Max.
Alloy 310S	24.0-26.0	19.0-22.0	2.00	1.00	0.080	0.750	0.045	0.030

Typical mechanical properties (annealed). Tensile strength, Mpa 500-750. Yield strength (0.2% Offset), Mpa 210. Elongation; 35% .

Alloy 904L (Wst. 1.4539)

Austenitic stainless steel intended for use under severe corrosion conditions, with a very good resistance to attacks in acidic environments, as sulphuric, phosphoric and acetic acid. Very good resistance to pitting corrosion, stress corrosion cracking and a much better resistance to crevice corrosion than steels of alloy 304L and alloy 316L. Used for chemical processing, pollution control equipment, oil and gas well piping, heat exchangers, acid production and pickling equipment.

Limiting chemical composition, %	Ni	Cr	Mo	Cu	Mn	Si	S	C	N
					Max.	Max.	Max.	Max.	Max.
Alloy 904L	23.0-28.0	19.0-23.0	4.0-5.0	1.0-2.0	2.00	1.00	0.035	0.020	0.10

Typical mechanical properties (annealed). Tensile strength, Mpa 500-700. Yield strength (0.2% Offset), Mpa 200. Elongation; 40%.

Alloy 254SMO (Wst. 1.4547)

Austenitic stainless steel, similar to alloy 904L, but with increased molybdenum and nitrogen contents, to be used in seawater, oil and gas piping systems on offshore production platforms and other aggressive chloride bearing media. With an excellent resistance to pitting, crevice corrosion and to stress-corrosion cracking.

Limiting chemical composition, %	Cr	Ni	Mo	Cu	N	Mn	Si	S	C	P
						Max.	Max.	Max.	Max.	Max.
Alloy 254SMO	20	18	6.0-6.5	0.5-1.0	0.18-0.22	1.0	1.0	0.010	0.020	0.030

Typical mechanical properties (annealed). Tensile strength, Mpa 650-850. Yield strength (0.2% Offset), Mpa 300. Elongation; 35% .

Material Characteristics

Alloy 400 (Wst. 2.4360)

A nickel-copper alloy with high strength and excellent corrosion resistance in a range of media including seawater, hydrofluoric acid, sulphuric acid and alkalis. Used for marine engineering, chemical, hydrocarbon processing equipment, and heat exchangers.

Limiting chemical composition, %	Ni	Cu	Fe	Mn	C	S	Si
	Min.		Max.	Max.	Max.	Max.	Max.
Alloy 400	63.0	28.0-34.0	2.50	2.0	0.30	0.024	0.50

Typical mechanical properties (annealed). Tensile strength, Mpa 450-600. Yield strength (0.2% Offset), Mpa 240. Elongation; 40%.

Alloy 600 (Wst. 2.4816)

A nickel-chromium alloy with good oxidation resistance at high temperatures and resistance to chloride-ion stress-corrosion cracking corrosion by high-purity water, and caustic corrosion. Used for furnace components, in chemical and food processing, in nuclear engineering, and for the sparking electrodes.

Limiting chemical composition, %	Ni	Cr	Fe	Mn	C	S	Si	Cu
	Min.			Max.	Max.	Max.	Max.	Max.
Alloy 600	72.0	14.0-17.0	6.0-10.0	0.15	1.0	0.015	0.50	0.50

Typical mechanical properties (annealed). Tensile strength, Mpa 655. Yield strength (0.2% Offset), Mpa 310. Elongation; 40%.

Alloy 825 (Wst. 2.4858) / Alloy 28 (Wst. 1.4563)

Nickel-iron-chromium alloy with additions of molybdenum and copper. It has excellent resistance to both reducing and oxidizing acids, to stress-corrosion cracking, and to localise attack such as pitting and crevice corrosion. The alloy are especially resistant to sulphuric and phosphoric acids. Used for chemical processing, pollution control equipment, oil and gas well piping, nuclear fuel reprocessing, acid production and pickling equipment.

Limiting chemical composition, %	Ni	Fe	Cr	Mo	Cu	Ti	C	Mn	S	Si	Al
		Min.					Max.	Max.	Max.	Max.	Max.
Alloy 825	38.0-46.0	22.0	19.5-23.5	2.50-3.50	1.50-3.00	0.60-1.50	0.05	1.00	0.03	0.50	0.20
Alloy 28	30.0-32.0	22.0	26.0-28.0	3.00-4.00	0.60-1.40	-	0.02	2.00	0.03	0.70	-

Typical mechanical properties Alloy 825 (annealed). Tensile strength, Mpa 690. Yield strength (0.2% Offset), Mpa 310. Elongation; 45%.

Typical mechanical properties Alloy 28 (annealed). Tensile strength, Mpa 650. Yield strength (0.2% Offset), Mpa 250. Elongation; 40%.

Alloy C276 (Wst. 2.4819)

A nickel-molybdenum-chromium alloy with an addition of tungsten having excellent corrosion resistance in a wide range of severe environments. The high molybdenum content makes the alloy especially resistant to pitting and crevice corrosion.

Used in pollution control, chemical processing, pulp and paper production, and waste treatment.

Limiting chemical composition, %	Ni	Mo	Cr	Fe	W	Co	Mn	V	P	S	Si
						Max.	Max.	Max.	Max.	Max.	Max.
Alloy C276	Remainder	15.0-17.0	14.5-16.5	3.00-4.50	3.00-4.50	2.50	1.00	0.35	0.04	0.03	0.08

Typical mechanical properties (annealed). Tensile strength, Mpa 790. Yield strength (0.2% Offset), Mpa 340. Elongation; 50%.

Titanium Grade 2 (Wst. 3.7035)

Titanium is handled much like other high-performance engineering materials, important differences between titanium and stainless steel and nickel alloys to be recognised are; lower modules of elasticity, higher melting point, lower ductility and propensity to gall.

Used in powerplants condensers and heat exchangers, chemical processing, desalination, gas systems.

Limiting chemical composition, %	Ti	Fe	O	N	C	H
				Max.	Max.	Max.
Titanium Grade 2	Remainder	0.20-0.30	0.25-0.18	0.05	0.10	0.013

Typical mechanical properties (annealed). Tensile strength, Mpa 390-540. Yield strength (0.2% Offset), Mpa 250. Elongation; 22%.

Pressure - Temperature table in Bar/ °C

STAINLESS STEEL TUBE AND PIPE ACC. TO ANSI AND DIN.

Acc. to ANSI B.31.3 ANSI 304 L

P = internal max pressure, PSI (Mpa)
 D = outside tube diameter mm.
 S = allowable stress, PSI (Mpa)
 E = Weld joint factor = 1.0
 T = min tube wall thickness, in mm,
 incl. minus tolerance of 12,5%
 Y = 0,4

$$P = \frac{2 \times S \times E \times T}{D \times 2 \times Y \times T}$$

CALCULATION VALUE

Type	304/L	316/L	321	316Ti	904L	6Mo
Qzul min.= (1% yield strength)	215	235	245	265	250	300
Type	400	600	825	C276	TiGr2	
Qzul min.= (0.2% yield strength)	240	310	310	415	275	

Acc. to DIN 2413 werkstoff nr. 1.4306

P = internal max. pressure, bar.
 Da = outside tube diameter in mm.
 Di = inside tube diameter in mm.
 Sv = min. tube wall thickness, incl.
 minus tolerance of 12.5% (T2)
 vN = weldfactor = 1.0
 Qzul = allowable stress, N/mm², based
 on 1% offset yield strength acc.
 to DIN17458 with safety factor
 of 1.5.

1) = temperature below 120 °C

$$P = \frac{20Qzul \times vN \times Sv}{Da}$$

2) = temperature above 120 °C

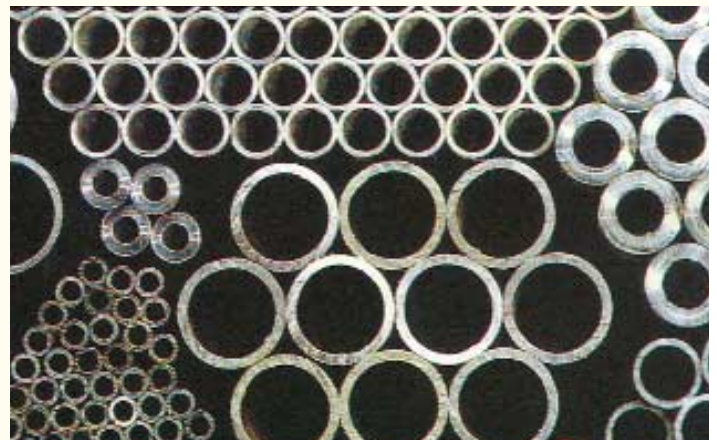
$$P = \frac{20Qzul \times vN \times Sv}{Di + vN \times Sv}$$

CALCULATION FOR THE WEIGHT OF TUBES

D = diameter
 T = wall thickness

Conversion factor for
 stainless steel = 0.02504

$$\text{Weight} = (D - T) \times T \times 0.02504$$



For other alloys :

Divide the result by 8 (specific weight of stainless steel) and multiply by the
 specific weight of the requested alloy. (see page 19)

Special Alloys

THE FOLLOWING QUALITIES ARE AVAILABLE ON REQUEST:

Type 304H, 309S, 321H, 316H, 316LN, 310H, 317/L, 347, 347H, 6 Mo, 254SMO, Sanicro 28, Super Duplex 1.4362 / S32304 / SAF 2304, Super Duplex 1.4410 / S32750 / SAF 2507, Duplex 1.4462 / S31803 / SAF 2205, Uranus B6, 410, 430, Alloy 33, -75, -718 and X750. Alloy 200, 201, K500, 601, 625, 800, 800H, 800HT, 925, C4, C22, B2, Titanium grade 1 up to 5. Zirconium 704, Tungum, Copper B68, CuNi 70/30, CuNi 90/10, Aluminium 99.5, ALMg3.



Extra services

Standard packing

In bundles with protective foil wrapping. In wooden crates / cases. For smaller tubes on shelf. Fittings in carton boxes.

Cutting to lengths

Cutting from 3.00 mm o.d. up to 406 mm. High volume tube cutting.

Polishing

We polish over a range of sizes from 6.00 mm o.d. up to 406 mm o.d, although sizes bigger than 168 mm are hand polished; not mechanical. Polishing standards are gritt 180, 240, 320, 400 and mirror. On the inside we polish from 6.00 mm up to 168 mm. Other facilities are honing and electro polishing, which we can supply till 0.2µ smoothness.

Cleaning

For normal degrease standard and also for the much higher standard of "Oxygen clean" treatment, where air, gas, powder or other substances of high purity require non-contaminated surface finish.

Re-annealing from 6.00 mm up to 323 mm.

Special cleaning will be applied by customers request!

Extra testing

All chemical and mechanical testing. Hardness according to : Rockwell, Brinell, Vickers and NACE MR 01-75. X-Ray and Ultra sonic testing. Witnessing by independent authorities as Lloyd's Register of Shipping, Det Norske Veritas, TÜV, Bureau Veritas, Rina, Germanischer Lloyd and Stoomwezen, or any other certifying authority

Available on request:



Seamless & welded pipe

Execution: Annealed and pickled, in random lengths of approximately 6 meters. According to ASTM A312, A530, ANSI B36.10, ANSI B.36.19

- Grades :304/L, 316/L, 321, 316Ti, 310/S, Nickel Alloy's & Titanium.

Sizes :1/8" n.b. up to, 24" n.b., Sch 10S, 40S, 80S, 160, XXS.

Welded tubing

Execution: Bright annealed and pickled, in random lengths of approximate 6 meters. According to ASTM A 249, A 269 and DIN 17440, 17457. Tolerances according to ANSI B.39.19. and DIN 2463, 2465.

- Round in DIN & ISO Dimensions, Hygienic Tube.

- Square & Rectangular Tube.

- Grades :304/L, 316/L, 321, 316Ti, 310/S, Nickel Alloys & Titanium.

Sizes : 1.00 mm o.d., up to 608 mm o.d.

Flanges

- According to ASTM A 182 / ANSI B.16.5

- Grades : 316/L, 304/L, 321, 310/S, and nickel alloys.

- Types : blind, slip on, welding neck, lap joint, socket weld, screwed, orifice, and long welding neck.

- Ratings : 150 LBS, 300 LBS, 600 LBS, 900 LBS, 1500 LBS, 2500 LBS. Schedules 10S, 40S, 80S, 160, XXS.

Sizes:

1/2" - 24"

- According to DIN 2527, DIN 2576, DIN 2633/2635, DIN 2642, DIN 2566.

- Grades : 316/L, 304/L, 321, 316Ti, 310/S, Aluminium

- Types : blind, slip on, welding neck, lap joint, threaded.

- Ratings : PN 10, PN 16, PN 40, PN 64, PN 100.

Sizes:

NW 10 - 400

Seamless and welded fittings

- According to ASTM A 403, ANSI B.16.9/16.25, MSS - SP 43, and DIN 2605, 2616, 2615, DIN 28011.

- Elbows 90 / 45 Degrees L.R. / S.R. , Equal-/ Reducing Tees,

- Concentric / Eccentric Reducers, Caps, Stub Ends, Collars.

- Grades : 316/L, 304/L, 321, 316Ti, 310/S & Nickel Alloys.

Sizes:

1/2" - 24"

Sch 10S, 40S, 80S

160, XXS

Screwed, socketweld and outlet fittings

- According to ASTM A 182, ANSI B.16.11./ ANSI B.2.1.

- Male & female ends with NPT, BSP, BSPT threads.

- Grades : 316/L, 304/L, 321, 316Ti, 310/S & Nickel Alloys.

- Ratings : 150 LBS, 3000 LBS, and 6000 LBS.

Sizes:

1/8" - 4"

Single ferrule compression fittings

- According to DIN 2353, with BSP & NPT thread.

- Grades : only 316Ti, 316/L.

- Working pressure: up to 630 bar.

Sizes:

4.00 - 42 mm

Twin ferrule compression fittings

- According to ASTM A 182

- Grades : only 316/L, nickel alloys and titanium.

- Working pressure: up to 828 bar.

Sizes:

1/16" - 2"

COMPARATIVE TABLE OF SEAMLESS INSTRUMENT TUBES

Brand name	DIN	DIN / Euronorm	AISI	UNS	Weight KG	Rm N/mm ²	Rp0.2 N/mm ²	A %	C max	Si max	Mn max	Cr	Mo	P max	Fe	Cu	Ni	S max	Al	N	Ti	Others
304	1.4301	X 5 Cr Ni 18-10	304	S30400	8,00	500-700	195	40	0,080	0,75	2,00	18,0-20,0	--	0,040	--	--	8,0-11,0	max	--	--	--	--
304L	1.4306	X 2 Cr Ni 19-11	304L	S30403	8,00	460-680	180	40	0,035	0,75	2,00	18,0-20,0	--	0,040	--	--	8,0-13,0	0,030	--	--	--	--
316	1.4401	X 5 Cr Ni Mo 17-12,2	316	S31600	8,00	510-710	205	40	0,080	0,75	2,00	16,0-18,0	2,0-3,0	0,040	--	--	11,0-14,0	0,030	--	--	--	--
316L	1.4404	X 2 Cr Ni Mo 17-13,2	316L	S31603	8,00	490-690	190	40	0,035	0,75	2,00	16,0-18,0	2,0-3,0	0,040	--	--	10,0-15,0	0,030	--	--	--	--
316LN	1.4429	X 2 Cr Ni Mo N 17-13,3	316LN	S31653	8,00	580-800	295	35	0,035	0,75	2,00	16,0-18,0	2,0-3,0	0,040	--	--	10,0-15,0	0,030	0,10-0,16	--	--	--
316L (Mo+)	1.4435	X 2 Cr Ni Mo 18-14,3	316	S31603	8,00	490-690	190	40	0,035	0,75	2,00	16,0-18,0	2,5-3,0	0,040	--	--	10,0-15,0	0,030	--	--	--	--
316 (Mo+)	1.4436	X 5 Cr Ni Mo 17-13,3	316	S31600	8,00	490-690	190	40	0,080	0,75	2,00	16,0-18,0	2,5-3,0	0,040	--	--	11,0-14,0	0,030	--	--	--	--
317L	1.4438	X 2 Cr Ni Mo N 18-15,4	317L	S31703	8,00	580-800	235	45	0,030	1,00	2,00	17,5-19,5	3,0-4,0	0,045	--	--	13,0-16,0	0,030	<0,11	--	--	--
Duplex	1.4462	X 2 Cr Ni Mo N 22,5 3	318LN	S31803	8,00	640-880	450	22	0,030	1,00	2,00	21,0-23,0	2,5-3,5	--	--	--	4,5-6,5	--	0,08-0,20	--	--	--
Sanicro 28*	1.4563	X 1 Ni Cr Mo Cu 31-27 4	928	N088028	8,10	500-550	220	30	0,0200	0,70	2,00	26,0-28,0	3,0-4,0	--	--	0,6-1,4	30-32,0	0,030	0,04-0,15	--	--	--
Uranus B6*	1.4539	X 2 Ni Cr Mo Cu 25-20 5	904L	N08904	8,00	500-700	200	40	0,020	1,00	2,00	19,0-23,0	4,0-5,0	0,045	--	1,0-2,0	23,0-28,0	0,035	<0,10	--	--	--
321	1.4541	X 6 Cr Ni Ti 18-10	321	S32100	8,00	500-730	200	35	0,080	0,75	2,00	17,0-20,0	--	0,040	--	--	9,0-13,0	0,030	--	<0,7	--	--
254 SMO*	1.4547	X 2 Ni Cr Mo Cu N20 18 6	6Mo	S31254	8,00	650-850	300	35	0,020	1,00	1,00	20,0	6,0-6,5	0,030	--	0,5-1,0	18	0,010	0,18-0,22	--	--	--
316Ti	1.4571	X 6 Cr Ni Mo Ti 17-12 2	316Ti	S31635	8,00	500-730	210	35	0,060	0,80	1,90	16,5-18,0	2,0-2,5	--	--	--	10,5-12,0	--	--	0,3	--	--
310S	1.4845	X 12 Cr Ni 25-21	310S	S31008	8,00	500-750	210	35	0,080	1,00	2,00	24,0-26,0	<0,75	0,045	--	--	19,0-22,0	0,030	--	--	--	--
Incoloy 800*	1.4876	X 10 Ni Cr AlTi 33-20	800	N08800	8,00	520-690	220	30	0,100	1,00	1,50	19,0-23,0	--	--	>39,5	<0,75	30,0-35,0	0,015	0,15-0,60	--	0,15-0,60	--
316 (C+)	1.4919	X 5 Cr Ni Ti 17-12 2	316H	S31609	8,00	460	180	40	0,04-0,10	0,75	2,00	16,0-18,0	2,0-3,0	0,040	--	--	11,0-14,0	0,030	--	--	--	--
321 (C+)	1.4941	X 6 Cr Ni Ti 18-10	321H	S32109	8,00	460	180	35	0,04-0,10	0,75	2,00	17,0-20,0	--	0,040	--	--	9,0-13,0	0,030	--	--	<0,6	--
304 (C+)	1.4948	X 5 Cr Ni 18-10	304H	S30409	8,00	450	160	40	0,04-0,10	0,75	2,00	18,0-20,0	--	0,040	--	--	8,0-11,0	0,030	--	--	--	--
Incoloy 800HT*	1.4959	X 8 Ni Cr AlTi 32-21	800HT	N08811	7,95	450-660	240	30	0,06-0,10	1,00	1,50	19,0-23,0	--	--	>39,5	<0,75	30,0-35,0	0,015	0,15-0,60	--	0,15-0,60	--
Nickel 200*	2.4066	Ni 99,2	200	N02200	8,89	370-570	140	40	0,150	0,35	0,35	--	--	--	0,40	0,25	99,2	0,010	--	--	--	--
Nickel 201*	2.4068	LC-Ni 99	201	N02201	8,89	340-540	100	40	0,020	--	0,25	--	--	--	0,40	0,25	99,0	--	--	--	--	--
Monel 400*	2.4360	Ni Cu 30 Fe	400	N04400	8,83	450-600	240	40	0,300	0,50	1,25	--	--	--	>2,5	28,0-34,0	63,0	0,024	--	--	--	W/V/Co
Hastelloy C22*	2.4602	Ni Cr Mo	C22	N06022	8,70	700	310	25	0,010	0,08	--	22,0	13,0	--	--	--	57,0	--	--	--	--	--
Hastelloy C4*	2.4610	Ni Mo 16 Cr 16 Ti	C4	N06455	8,64	700	305	40	0,008	--	--	15,0-17,0	15,0-17,0	--	--	--	66,0-69,0	--	--	0,2-0,4	--	--
Inconel 600*	2.4816	Ni Cr 15 Fe	600	N06600	8,42	655	310	40	1,000	0,50	0,15	14,0-17,0	--	--	6,0-10,0	<0,50	>72,0	0,015	--	--	--	--
Hastelloy C276*	2.4819	Ni Mo 16 Cr 15W	C276	N10276	8,89	790	340	50	0,010	0,08	1,00	14,5-16,5	15,0-17,0	0,040	3,0-4,5	--	rest	0,030	--	--	--	W/Co/V
Inconel 601*	2.4851	Ni Cr 23 Fe	601	N06601	8,11	600	260	30	0,100	0,50	1,00	21,0-25,0	--	--	rest	<1,00	58,0-63,0	0,015	1,0-1,7	--	--	--
Inconel 625*	2.4856	Ni Cr 22 Mo 9 Nb	625	N06625	8,44	830	410	30	0,100	0,50	0,50	20,0-23,0	8,0-10,0	0,015	<5,0	--	<58,0	0,015	<0,40	--	<0,40	Nb/Co
Incoloy 825*	2.4858	Ni Cr 21 Mo	825	N08825	8,14	690	310	45	0,050	0,50	1,0	19,5-23,5	2,5-3,5	--	>22,0	1,5-3,0	38,0-46,0	0,030	<0,20	--	0,60-1,20	--
Titanium Gr 2	3.7035	Ti 2	Gr 2	R50400	4,51	390-540	250	22	0,100	--	--	--	--	--	0,2-0,3	--	--	--	--	<0,05	99,4	H/O
Copper F22	2.0090	SF - Cu	122	C12200	8,80	220	60	55	--	--	--	--	--	0,050	--	99,9	--	--	--	--	--	--
CuNiFe 90/10	2.0873	CuNi 10Fe 1Mn		C70600	8,90	300	180	20	0,050	--	0,5-1,0	--	--	--	1,0-2,0	remainder	9,0-11,0	0,050	--	--	--	Zn<0,5/Pb<0,03
CuNiFe 70/30	2.0837	CuNi 30Fe 1Mn	--	C71581	8,90	350	300	25	0,050	--	0,5-1,5	--	--	--	0,4-1,0	remainder	30,0-32,0	0,050	--	--	--	Zn<0,5/Pb<0,03
Zirconium 702	--	Zr 99,2	523	R60702	5,80	413	241	25	0,200	--	--	0,16	--	--	<0,20	--	--	--	--	<0,025	--	Zr>99,2/Hf<4,5

*1 These are trademarks of Haynes Int., Krupp-VDM, Inco Alloys, Sandvik, Avesta. Merinox B.V. cannot be responsible for eventual mistakes or misprints.

SEAMLESS TUBING

Diameter:
from 0,1 mm up to 100 mm o.d.

GRADES

Stainless steel:

316, 316L, 316H, 304, 304L, 304H, 321, 321H, 310/S, 316Ti, 904L

Nickel alloys:

400, 600, 825/ Sanicro 28, C276.

and Titanium:

Grade 2

◆
INSTRUMENTATION

◆
HYDRAULIC SYSTEMS

◆
PRECISION APPLICATIONS

◆
CAPILLARY PURPOSES
◆



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Website: www.merinox.nl

SEAMLESS TUBING

Diameter:
from 0,1 mm up to 100 mm o.d.

GRADES

Stainless steel:

316, 316L, 316H, 304, 304L, 304H, 321, 321H, 310/S, 316Ti, 904L

Nickel alloys:

400, 600, 825/ Sanicro 28, C276.

and Titanium:

Grade 2

◆
INSTRUMENTATION

◆
HYDRAULIC SYSTEMS

◆
PRECISION APPLICATIONS

◆
CAPILLARY PURPOSES
◆



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