

International Standard



1127

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Stainless steel tubes — Dimensions, tolerances and conventional masses per unit length

Tubes en acier inoxydable — Dimensions, tolérances et masses linéiques conventionnelles

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 1127 was developed by Technical Committee ISO/TC 5, *Metal pipes and fittings*, and was circulated to the member bodies in March 1979.

It has been approved by the member bodies of the following countries:

Australia	Hungary	Romania
Austria	India	South Africa, Rep. of
Belgium	Israel	Spain
Canada	Italy	Sweden
Czechoslovakia	Japan	Switzerland
Denmark	Korea, Rep. of	United Kingdom
Finland	Mexico	USSR
France	Norway	

No member body expressed disapproval of the document.

This second edition cancels and replaces the first edition (ISO 1127-1977)

Stainless steel tubes — Dimensions, tolerances and conventional masses per unit length

0 Introduction

The outside diameters and thicknesses of the tubes have been selected from ISO 4200. If thicknesses greater than 14,2 mm are needed, they should be chosen from ISO 4200.

1 Scope and field of application

This International Standard specifies the diameters, thicknesses, tolerances and conventional masses per unit length of stainless steel tubes.

2 References

ISO 221, *Steel tubes — Wall thicknesses*.

ISO 4200, *Plain end steel tubes, welded and seamless — General tables of dimensions and conventional masses per unit length*.¹⁾

ISO 5252, *Steel tubes — Tolerance systems*.

3 Tolerances

The tolerances permitted on the outside diameter and thickness of the tubes result from the method of manufacture, the steel types and the heat treatment. The tolerances shall be selected from the following values.

3.1 Tolerances on outside diameter

- $D_1 : \pm 1,5 \%$ with a minimum of $\pm 0,75$ mm
- $D_2 : \pm 1,0 \%$ with a minimum of $\pm 0,50$ mm

- $D_3 : \pm 0,75 \%$ with a minimum of $\pm 0,30$ mm
- $D_4 : \pm 0,50 \%$ with a minimum of $\pm 0,10$ mm

The tolerances on outside diameter include ovality.

3.2 Tolerances on thickness

- $T_1 = \pm 15 \%$ with a minimum of $\pm 0,6$ mm
- $T_2 = \pm 12,5 \%$ with a minimum of $\pm 0,4$ mm
- $T_3 = \pm 10 \%$ with a minimum of $\pm 0,2$ mm
- $T_4 = \pm 7,5 \%$ with a minimum of $\pm 0,15$ mm
- $T_5 = \pm 5 \%$ with a minimum of $\pm 0,10$ mm

The tolerances on thickness include eccentricity.

3.3 Other tolerances

For tolerances on dimensions other than outside diameter and thickness, reference shall be made to ISO 5252.

4 Conventional masses per unit length

The conventional masses per unit length given in table 1 for austenitic stainless steel tubes are the masses of ISO 4200 multiplied by a factor of 1,015. This factor assumes an average density for these tubes of 7,97 kg/dm³.

The conventional masses per unit length given in table e for ferritic and martensitic stainless steel tubes are the masses of ISO 4200 multiplied by a factor of 0,985. This factor assumes an average density for these tubes of 7,73 kg/dm³.

1) At present at the stage of draft.

Table 1 — Conventional masses for austenitic stainless steel tubes

Outside diameter, mm; series			Conventional masses per unit length, kg/m, for thicknesses, mm																						
1	2	3	1.0	1.2	1.6	2.0	2.3	2.6	2.9	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1	8.0	8.8	10.0	11.0	12.5	14.2		
	6		0.125	0.144																					
	8		0.176	0.204																					
	10		0.225	0.264																					
10.2	12		0.230	0.270	0.344	0.410																			
			0.275	0.416	0.500																				
13.5			0.313	0.369	0.477	0.576	0.645		0.769																
		14	0.326	0.496	0.601																				
	16		0.376	0.577	0.701																				
17.2			0.406	0.625	0.761	0.858				1.12															
		18	0.425	0.657	0.801																				
	19		0.451	0.697	0.851																				
	20		0.476	0.564	0.737	0.901																			
21.3			0.509	0.789	0.966			1.22		1.45		1.74													
		22	0.526		1.00	1.15																			
	25		0.601	0.715	0.937	1.15	1.46																		
		25.4		0.727	0.953	1.17	1.48																		
26.9			0.649		1.01	1.25	1.58	1.75	1.90			2.29													
	31.8			0.920	1.21	1.49	1.90																		
	32			0.925	1.50					2.29		2.78													
33.7			0.818	0.976	1.29	1.58	1.81	2.02		2.45			3.29												
		35		1.02	1.65			2.30		2.79															
	38			1.11	1.46	1.81																			
	40			1.17	1.54			2.44		3.14				4.68											
42.4					1.63	2.02	2.13	2.59		3.14	3.49														
		44.5				2.13		2.73	3.02																
48.3	51		1.25	1.49	1.87	2.31		2.97		3.61	4.03			5.42											
		54		2.10	2.60	3.35		3.15		3.83															
	57			2.22	2.75			3.35																	
60.3				2.35	2.92	3.34	3.76	4.17		4.58	5.11	5.63			7.66										
	63.5			2.48	3.08		3.96			4.83															
	70			2.74	3.40		4.98		4.87		6.54	7.22		8.90			12.3								
76.1				2.98	3.70	4.25	4.78	5.32																	
		82.5		3.49	4.35	4.98	5.61	6.24		7.68	8.51							16.2							
88.9					4.98			7.17			9.77							18.8							
	101.6									9.98			12.4												
114.3				4.52	5.62		7.27	8.09											23.2						
139.7				5.53	6.89		8.92			11.0		13.6		16.8						32.5					
168.3				6.68	8.32		10.8			13.2		16.4		20.4							43.3				
219.1					10.9		14.1			17.3	19.4	21.5													
273					13.6		17.6			21.6	24.3	26.9													
323.9							20.9			25.7	32.1	35.9													
355.6							22.9			28.2	35.2	43.8													
406.4							26.3			32.3	40.3	50.2													
457										36.3	45.4	56.5													
508										40.4	45.5	62.9													
610										48.6	60.7	84.8													
711																									
813																		161							
914																			199						
1 016																							252		

Table 2 — Conventional masses for ferritic and martensitic stainless steel tubes

Outside diameter, mm; series			Conventional masses per unit length, kg/m, for thicknesses, mm																						
1	2	3	1.0	1.2	1.6	2.0	2.3	2.6	2.9	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1	8.0	8.8	10.0	11.0	12.5	14.2		
	6		0.121	0.140																					
	8		0.170	0.198																					
	10		0.219	0.256																					
10.2			0.224	0.262	0.334	0.398																			
	12		0.267	0.404	0.486	0.486																			
13.5			0.303	0.359	0.463	0.558	0.625		0.747																
	14		0.316	0.482	0.583	0.583																			
	16		0.364	0.431	0.559	0.681				1.08															
17.2			0.394	0.607	0.739	0.832																			
	18		0.413	0.637	0.777	0.777																			
	19		0.437	0.519	0.677	0.825																			
20			0.462	0.548	0.715	0.875																			
	22		0.493		0.765	0.938	1.18			1.41		1.68													
21.3			0.510		0.909	1.11	1.42																		
	25		0.583	0.693	0.909	1.11	1.44																		
	25.4		0.705	0.925	1.13	1.44	1.54			1.84		2.23													
26.9			0.629	0.705	0.983	1.21	1.54			1.84		2.23	3.19												
	30			1.10	1.36	1.46	1.75	1.96		2.37		2.70													
31.8				0.892	1.17	1.45	1.61	2.24		2.71															
32				0.897		1.46	1.75	2.36		3.04															
	35		0.794	0.948	1.25	1.54	1.75	2.36		3.51															
				0.985	1.25	1.61	1.75	2.51		3.71															
	38			1.07	1.42	1.75	1.96	2.65		3.04															
40				1.13	1.50	1.59	2.07	2.65		3.39															
42.4														4.54											
	44.5													5.26											
48.3			1.21	1.45	1.81	2.25	2.38	2.89		3.51															
	51				1.92	2.38	2.52	3.05		3.71															
	54				2.04	2.52	3.25	3.81																	
	57			2.16	2.67	3.24	3.64	4.05		4.44		5.47													
60.3				2.29	2.84	3.24	3.64	4.05		4.44															
	63.5			2.40	2.98	3.24	3.64	4.05		4.44															
70				2.66	3.30	3.24	3.64	4.05		4.44															
				2.90	3.60	4.13	4.64	5.16		5.47															
76.1				3.91	4.84	4.84	5.45	5.95		6.17															
88.9				4.38	5.46	5.46	6.06	6.56		6.66															
	101.6			5.37	6.69	6.69	7.05	7.85		7.85															
114.3				6.48	8.08	8.08	8.66	9.95		9.95															
139.7																									
168.3																									
219.1																									
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