
International Standard



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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 :

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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.

$D_3 : \pm 0,75 \%$ 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.

1 Scope and field of application

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

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.

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*.

3.3 Other tolerances

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

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.

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.

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

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																					
	1,0	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	
1																						
6	0,125	0,144																				
8	0,176	0,204																				
10	0,225	0,264																				
10,2	0,230	0,270	0,344	0,410																		
13,5	0,275	0,313	0,369	0,416	0,500																	
	0,313	0,369	0,477	0,576	0,645	0,789																
16	0,326	0,445	0,486	0,601																		
17,2	0,406	0,476	0,625	0,761	0,858		1,12															
	0,425	0,657	0,801																			
19	0,451	0,535	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															
	0,526	0,937	1,17	1,46																		
25	0,601	0,715	0,953	1,15	1,46																	
26,9	0,649	0,727	1,01	1,25	1,58	1,75	1,90	2,29														
		1,14	1,40	1,81	2,02																	
30		0,920	1,21	1,49	1,90																	
31,8		0,925	1,22	1,50	1,90																	
32		0,976	1,29	1,65	2,02	2,44	2,79	3,29														
33,7	0,818	1,02	1,46	1,81	2,30	2,73	3,02	3,49														
		1,11	1,54	2,02	2,59	3,14	3,61	4,17														
40		1,17	1,63	2,13	2,73	3,02	3,54	4,17														
42,4		1,87	2,22	2,75	3,34	3,96	4,61	5,11														
		1,98	2,35	2,92	3,54	4,17	4,83	5,42														
48,3	1,25	1,49	2,10	2,60	3,35	3,96	4,61	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
51		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
54		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
57		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
60,3		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
63,5		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
70		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
76,1		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
82,5		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
88,9		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
101,6		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
114,3		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
139,7		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
168,3		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
219,1		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
273		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
323,9		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
355,6		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
406,4		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
457		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
508		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
610		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
711		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
813		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
914		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														
1 016		1,25	1,87	2,46	3,15	3,85	4,54	5,22														
		2,10	2,75	3,48	4,25	4,97	5,74	6,54														

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																					
	1,0	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	
1																						
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	0,463	0,496	0,625																	
13,5	0,303	0,359	0,463	0,558	0,625																	
13,5	0,316	0,482	0,583	0,681																		
16	0,364	0,431	0,559	0,681																		
17,2	0,394	0,607	0,739	0,832																		
18	0,413	0,637	0,777																			
19	0,437	0,519	0,677	0,825																		
20	0,462	0,548	0,715	0,875																		
21,3	0,493	0,765	0,938			1,18																
21,3	0,510	0,971																				
25	0,583	0,909	1,11			1,42																
25	0,705	0,925	1,13			1,44																
26,9	0,629	0,983	1,21			1,54																
26,9	1,10	1,36																				
31,8	0,892	1,17	1,45			1,84																
32	0,897	1,46																				
33,7	0,794	0,948	1,25	1,54	1,75	1,96																
33,7	0,985	1,61																				
38	1,07	1,42	1,75			2,24																
40	1,13	1,50				2,36																
42,4		1,59	1,96	2,07		2,51																
42,4			3,04	3,39		3,04																
48,3			1,81	2,25		2,89																
48,3	1,21	1,45	1,92	2,38		3,05																
51			2,04	2,52		3,25																
57			2,16	2,67		3,64																
60,3			2,29	2,84	3,24	3,84																
63,5			2,40	2,98																		
70			2,66	3,30		4,73																
76,1			2,90	3,60	4,13	4,64																
88,9			3,39	4,23	4,84	5,45																
88,9			4,38	5,46		7,05																
101,6			5,37	6,69		8,66																
114,3			6,48	8,08		10,4																
139,7																						
168,3																						
219,1																						
273																						
323,9																						
355,6																						
406,4																						
457																						
508																						
610																						
711																						
813																						
914																						
1 016																						

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