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English version

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

(ISO 1127 : 1992)

Tubes en acier inoxydable — Dimensions,
tolérances et masses linéiques conventionnelles
(ISO 1127 : 1992)

Nichtrostende Stahlrohre — Masse, Grenzabmasse
und längenbezogene Masse
(ISO 1127 : 1992)

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European Committee for Standardization
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Foreword

The text of the International Standard from Technical Committee ISO/TC 5, Ferrous metal pipes and metallic fittings, of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee ECISS/TC 29, Steel tubes and fittings for steel tubes, the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 1996, and conflicting standards shall be withdrawn at the latest by October 1996.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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

1 Scope

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

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5252:1991, *Steel tubes — Tolerance systems.*

3 Dimensions

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

4 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 values given in tables 1 and 2.

4.1 Tolerances on outside diameter

See table 1.

Table 1 — Tolerances on outside diameter

Tolerance class	Tolerance on outside diameter
D ₁	± 1,5 % with ± 0,75 mm min.
D ₂	± 1 % with ± 0,5 mm min.
D ₃	± 0,75 % with ± 0,3 mm min.
D ₄	± 0,5 % with ± 0,1 mm min.

The tolerances on outside diameter include ovality.

4.2 Tolerances on thickness

See table 2.

Table 2 — Tolerances on thickness

Tolerance class	Tolerance on thickness
T ₁	± 15 % with ± 0,6 mm min.
T ₂	± 12,5 % with ± 0,4 mm min.
T ₃	± 10 % with ± 0,2 mm min.
T ₄	± 7,5 % with ± 0,15 mm min.
T ₅	± 5 % with ± 0,1 mm min.

The tolerances on thickness include eccentricity.



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4.3 Other tolerances

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

5 Conventional masses per unit length

The conventional masses per unit length given in table 3 for austenitic stainless steel tubes are the

masses given in 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 4 for ferritic and martensitic stainless steel tubes are the masses given in ISO 4200 multiplied by a factor of 0,985. This factor assumes an average density for these tubes of 7,73 kg/dm³.

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Table 3 — Conventional masses for austenitic stainless steel tubes

Outside diameter mm		Thickness, 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	8,6	10,0	11,0	12,5	14,2		
Series		Conventional mass per unit length, kg/m																						
1	2	3																						
	6		0,125	0,144																				
	8		0,178	0,204																				
	10		0,225	0,264																				
	10,2		0,230	0,270	0,344	0,410	0,500																	
	12		0,275		0,416	0,500																		
	12,7		0,293	0,345	0,445	0,538	0,599	0,658				0,711	0,761											
	13,5		0,313	0,369	0,477	0,578	0,645					0,709												
	14		0,326		0,486	0,601																		
	16		0,378	0,445	0,577	0,701																		
	17,2		0,408		0,625	0,781	0,958					1,12												
	18		0,425		0,657	0,801																		
	19		0,451	0,535	0,687	0,851																		
	20		0,478	0,564	0,737	0,901																		
	21,3		0,509		0,789	0,968					1,22		1,45			1,74								
	22		0,528			1,00																		
	25		0,601	0,715	0,937	1,15				1,46														
	25,4			0,727	0,953	1,17				1,48														
	28,9		0,649		1,01	1,25				1,58		1,75	1,90	2,29										
	30				1,14	1,40																		
	31,9			0,920	1,21	1,49				1,90			2,29	2,78										
	32			0,925		1,50																		
	33,7		0,818	0,976	1,29	1,58	1,81	2,02				2,45				3,29								
	35			1,02		1,65																		
	38			1,11	1,46	1,81				2,30		2,79												
	40			1,17	1,54			2,44																
	42,4			1,63	2,02			2,59				3,14	3,49											4,68
		44,5				2,13		2,73																



Outside diameter mm	Thickness, mm																				
	Conventional mass per unit length, kg/m																				
	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
48,3		1,87	2,31			2,87	3,61	4,03			5,42										
51	1,25	1,49	1,96	2,46		3,15	3,63														
54		2,10	2,60			3,35															
57		2,22	2,75			3,63	3,83														
60,3		2,35	2,92	3,34		3,76	4,17	5,11	5,63		7,06										
63,5		2,48	3,08			3,96	4,63														
70		2,74	3,40			4,87															
76,1		2,98	3,70	4,25		4,78	5,32	6,54	7,22		8,90			12,3							
82,5			4,03				6,35														
88,9			3,49	4,35	4,98	5,61	6,24	7,68	8,51		11,7				16,2						
101,6			4,98				7,17		9,77		13,5				18,8						
114,3			4,52	5,62		7,27	8,09	9,98		12,4											
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											84,7	
273			13,6			17,8	21,6	24,3	28,9												81,5
323,9						20,9	25,7		32,1	35,9											87,4
355,6						22,9	28,2		35,2	43,8											108
408,4						26,3	32,3		40,3	50,2											123
457							36,3		45,4	56,5											139
508							40,4	45,5		62,9	70,4										157
610							48,6		60,7	84,8	95,2										176
711																					187
813																					199
914																					212
1 016																					252

Table 4 — Conventional masses for ferritic and martensitic stainless steel tubes

Outside diameter mm	Thickness, mm																					
	Conventional mass per unit length, kg/m																					
	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	9,0	10,0	11,0	12,5	14,2	
Series																						
1																						
2																						
3																						
6	0,121	0,140																				
8	0,170	0,198																				
10	0,219	0,256																				
10,2	0,224	0,262	0,334	0,396																		
12	0,267		0,404	0,468																		
12,7	0,285	0,335	0,431	0,520	0,581	0,638	0,690	0,739														
13,5	0,303	0,359	0,463	0,558	0,625	0,747																
	0,316		0,492	0,593																		
16	0,364	0,431	0,558	0,681																		
17,2	0,394		0,607	0,739	0,832		1,06															
	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	1,41	1,68															
	0,510		0,971																			
25	0,563	0,683	0,908	1,11	1,42																	
25,4		0,705	0,925	1,13	1,44	1,54	1,68	1,84	2,23													
26,9	0,629		0,963	1,21	1,54	1,84	2,23	2,70														
			1,10	1,36																		
31,8		0,892	1,17	1,45	1,84	2,23	2,71	3,19														
32		0,897		1,46	1,75	1,86	2,37															
33,7	0,784	0,848	1,25	1,54	1,75	1,86	2,37	3,19														
		0,885		1,61	2,24	2,36	2,71	3,04	3,39													
38		1,07	1,42	1,75	2,24	2,36	2,71	3,04	3,39													
40		1,13	1,50	1,96	2,36	2,51	2,85	3,04	3,39	4,54												
42,4			1,58	1,96	2,07	2,65	2,94	3,04	3,39	4,54												
44,5				2,07																		



1	Outside diameter mm		Thickness, mm																				
	Series 2	3	Conventional mass per unit length, kg/m																				
			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
48,3			1,81	2,25		2,89		3,51	3,91														
	51		1,92	2,38		3,05		3,71															
		54	2,04	2,52		3,25																	
	57		2,16	2,67		3,91																	
			2,29	2,84	3,24	3,64	4,05	4,44	4,95	5,47			7,44										
	83,5		2,40	2,98		3,94		4,69															
	70		2,66	3,30		4,73																	
76,1			2,90	3,60	4,13	4,64	5,16		6,34	7,00			8,64		11,9								
		82,5	3,91					6,17															
	88,9		3,39	4,23	4,84	5,45	6,06	6,68	7,46	8,25			11,3			15,9							
			4,84				6,95		9,49				13,1			18,2							
114,3			4,38	5,46		7,95			9,68			12,0		16,5									
139,7			5,37	6,69		8,66		10,6		13,2		16,4		20,4					22,6				
168,3			6,48	8,08		10,4		12,8		16,0		19,6		27,8									
219,1			10,5			13,7		16,7	18,8	20,9				32,6		41,0							
273			13,2			17,0		21,0	23,5	26,1				40,8									
323,9						20,3		24,9		31,1	34,9	39,7		54,7									
355,6						22,3		27,4		34,2		42,6											
406,4						25,5		31,3		39,1		49,6											
457								35,3		44,0		54,8											
508								39,2	44,1		61,1		68,4										
610								47,2		58,9		82,2		92,4									
711															121								
813																157							
914																							
1 016																						193	244

Annex A
(informative)

Bibliography

- [1] ISO 4200:1991, *Plain end steel tubes, welded and seamless — General tables of dimensions and masses per unit length.*