

Redline version
compares Second edition to
First edition



Steel wire rod — Dimensions and tolerances

Fil machine en acier — Dimensions et tolérances

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<https://standards.iteh.ai/catalog/standards/sist/904d89da-a1a7-4275-a805-350145dc034/iso-16124-2015>



Reference number
ISO 16124:redline:2015(E)

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This is a mark-up copy and uses the following colour coding:

- Text example 1 — indicates added text (in green)
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- indicates added graphic figure
- indicates removed graphic figure
- 1.x ... — Heading numbers containg modifications are highlighted in yellow in the Table of Contents

DISCLAIMER

This Redline version provides you with a quick and easy way to compare the main changes between this edition of the standard and its previous edition. It doesn't capture all single changes such as punctuation but highlights the modifications providing customers with the most valuable information. Therefore it is important to note that this Redline version is not the official ISO standard and that the users must consult with the clean version of the standard, which is the official standard, for implementation purposes.



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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

~~International Standards are~~ The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the ~~rules given in~~ editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

~~ISO 16124 was prepared by Technical Committee~~ The committee responsible for this document is ISO/TC 17, *Steel*, Subcommittee SC 17, *Steel wire rod and wire products*.

This ~~first~~ second edition cancels and replaces the first edition (ISO ~~8457-1:1989~~ 16124:2004), which has been technically revised.

Steel wire rod — Dimensions and tolerances

1 Scope

This International Standard specifies dimensions and tolerances to the dimensions applicable to steel wire rod as defined in ISO 6929.

~~2 Normative references~~

~~The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.~~

~~ISO 6929:1987, Steel products — Definitions and classification~~

3 Dimensions and tolerances on dimensions

3.1 General

~~The dimensions and tolerances applicable to the dimensions of hot-rolled steel wire rod shall be as specified in 3.2 to 3.5.~~

The dimensions and tolerances applicable to the dimensions of hot-rolled steel wire rod shall be as specified in 2.1 to 2.4.

3.2 Round wire rod

~~The preferred nominal diameters and tolerances on diameters shall be as specified in Table 1 and Table 2 respectively. Three levels of tolerance are standardized T1, T2 and T3.~~

~~The permissible out of round for all sizes, measured as the difference between the maximum and minimum diameters at any cross section, shall be 80 % of the total tolerance specified on the diameter (see Table 2).~~

3.3 Square wire rod

~~The nominal width of side and tolerance on width of side shall be as specified in Table 3 and Table 4 respectively.~~

~~The permissible out of square for all sizes, measured as the difference of the distances between faces in the same cross section, shall be 80 % of the total tolerance specified on the width of side (see Table 4).~~

3.4 Hexagonal wire rod

~~The normal thickness, measured as the width across opposite flat faces, and tolerance on thickness shall be as specified in Table 5 and Table 6 respectively.~~

~~The permissible out of hexagon for all sizes, measured as the difference between the widths across the flats at any cross section, shall be 80 % of the total thickness tolerance (see Table 6).~~

3.5.2.1 Round wire rod

The nominal size, defined as width preferred nominal sizes b by thickness d , and tolerance on size tolerances on diameters shall be as specified in Table 71 and Table 82 respectively, respectively. Four levels of tolerance are standardized: T1, T2, T3 and T4.

The maximum permissible out-of-round for all sizes, measured as the difference between the maximum and the minimum diameter of the same cross-section, shall be 80 % of the total tolerance specified on the diameter (see Table 2).

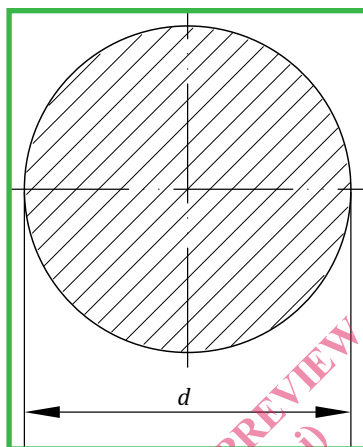


Table 1 Preferred diameter, nominal section, and nominal mass of round wire rod

Preferred diameter, d	Cross-sectional area, $S_{a,b}$	Mass per unit length ^{a,c}
mm	mm ²	kg/m
5	19,63	0,154
5,5	23,76	0,187
6	28,27	0,222
6,5	33,18	0,260
7	38,48	0,302
7,5	44,18	0,347
8	50,26	0,395
8,5	56,74	0,445
9	63,62	0,499
9,5	70,88	0,556
10	78,54	0,617
10,5	86,59	0,680
11	95,03	0,746
11,5	103,9	0,816
12	113,1	0,888
12,5	122,7	0,963
13	132,7	1,04
13,5	143,1	1,12
14	153,9	1,21
a	For information only.	
b	$S = 0,785 4 d^2$.	
c	Mass/m = 0,007 85 S.	

Preferred diameter, d	Cross-sectional area, $S_{a,b}$	Mass per unit length ^{a,c}
mm	mm ²	kg/m
14,5	165,1	1,30
15	176,7	1,39
15,5	188,7	1,48
16	201,1	1,58
16,5	213,8	1,68
17	227,0	1,78
17,5	240,5	1,89
18	254,5	2,00
18,5	268,8	2,11
19	283,5	2,23
19,5	298,6	2,34
20	314,2	2,47
21	346,3	2,72
22	380,1	2,98
23	415,5	3,26
24	452,4	3,55
25	490,9	3,85
26	530,9	4,17
27	572,6	4,49
28	615,7	4,83
29	660,5	5,18
30	706,9	5,55
31	754,8	5,92
32	804,2	6,31
33	855,3	6,71
34	907,9	7,13
35	962,1	7,55
36	1 017,9	7,99
37	1 075,2	8,44
38	1 134,1	8,90
39	1 194,6	9,38
40	1 256,6	9,86
41	1 320,3	10,36
42	1 385,4	10,88
43	1 452,2	11,40
44	1 520,5	11,94
45	1 590,4	12,48
46	1 661,9	13,05
a	For information only.	
b	$S = 0,785 4 d^2$.	
c	Mass/m = 0,007 85 S.	

Preferred diameter, d	Cross-sectional area, $S_{a,b}$	Mass per unit length ^{a,c}
mm	mm ²	kg/m
47	1 734,9	13,62
48	1 809,6	14,21
49	1 885,7	14,80
50	1 963,5	15,41
a	For information only.	
b	$S = 0,7854 d^2$.	
c	Mass/m = 0,007 85 S.	

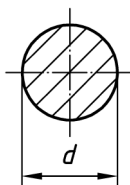


Table 1 — Preferred diameter, nominal section, and nominal mass of round wire rod

Preferred diameter, d mm	Cross-sectional area ^a mm ²	Mass per unit length ^a kg/m
5	19,63	0,154
5,5	23,76	0,187
6	28,27	0,222
6,5	33,18	0,260
7	38,48	0,302
7,5	44,18	0,347
8	50,26	0,395
8,5	56,74	0,445
9	63,62	0,499
9,5	70,88	0,556
10	78,54	0,617
10,5	86,59	0,680
11	95,03	0,746
11,5	103,9	0,816
12	113,1	0,888
12,5	122,7	0,963
13	132,7	1,04
13,5	143,1	1,12
14	153,9	1,21
14,5	165,1	1,30
15	176,7	1,39
15,5	188,7	1,48
16	201,1	1,58
a	For information only.	
NOTE 1 Cross-sectional area: $S = 0,7854d^2$		
NOTE 2 Mass/m = 0,00785S.		

Preferred diameter, <i>d</i> mm	Cross-sectional area ^a mm ²	Mass per unit length ^a kg/m
16,5	213,8	1,68
17	227,0	1,78
17,5	240,5	1,89
18	254,5	2,00
18,5	268,8	2,11
19	283,5	2,23
19,5	298,6	2,34
20	314,2	2,47
21	346,4	2,72
22	380,1	2,98
23	415,5	3,26
24	452,4	3,55
25	490,9	3,85
26	530,9	4,17
27	572,6	4,49
28	615,8	4,83
29	660,5	5,18
30	706,9	5,55
31	754,8	5,92
32	804,2	6,31
33	855,3	6,71
34	907,9	7,13
35	962,1	7,55
36	1 018	7,99
37	1 075	8,44
38	1 134	8,90
39	1 195	9,38
40	1 257	9,86
41	1 320	10,4
42	1 385	10,9
43	1 452	11,4
44	1 521	11,9
45	1 590	12,5
46	1 662	13,0
47	1 735	13,6
48	1 810	14,2
49	1 886	14,8
50	1 964	15,4
51	2 043	16,0

^a For information only.

NOTE 1 Cross-sectional area: $S = 0,7854d^2$

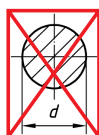
NOTE 2 Mass/m = 0,00785S.

Preferred diameter, d mm	Cross-sectional area ^a mm ²	Mass per unit length ^a kg/m
52	2 124	16,7
53	2 206	17,3
54	2 290	18,0
55	2 376	18,7
56	2 463	19,3
57	2 552	20,0
58	2 642	20,7
59	2 734	21,5
60	2 827	22,2

^a For information only.

NOTE 1 Cross-sectional area: $S = 0,7854d^2$

NOTE 2 Mass/m = 0,00785S.



~~Table 2 — Tolerances on nominal diameter and out-of-round of round wire rod~~

Nominal diameter, d mm	Tolerances ^a mm			Out-of-round (\leq)mm		
	T1 ^a	T2	T3	T1	T2	T3
$5,00 \leq d \leq 10,00$	$\pm 0,30$	$\pm 0,25$	$\pm 0,15$	0,48	0,40	0,24
$10,00 < d \leq 15,00$	$\pm 0,40$	$\pm 0,30$	$\pm 0,20$	0,64	0,48	0,32
$15,00 < d \leq 25,00$	$\pm 0,50$	$\pm 0,35$	$\pm 0,25$	0,80	0,56	0,40
$25,00 < d \leq 40,00$	$\pm 0,60$	$\pm 0,40$	$\pm 0,30$	0,96	0,64	0,48
$40,00 < d \leq 50,00$	$\pm 0,80$	$\pm 0,50$	—	1,28	0,80	—

^a For the size range $5,00 \text{ mm} \leq d \leq 10,00 \text{ mm}$, larger values for the tolerance may be agreed upon between the parties.

Table 2 — Tolerances on diameter of round wire rod and out-of-round of round wire rod

Diameter, d mm	Tolerance ^b mm				Out-of-round (\leq)mm			
	T1 ^a	T2	T3	T4	T1	T2	T3	T4
$5,00 \leq d \leq 10,00$	$\pm 0,30$	$\pm 0,25$	$\pm 0,20$	$\pm 0,15$	0,48	0,40	0,32	0,24
$10,00 < d \leq 15,00$	$\pm 0,40$	$\pm 0,30$	$\pm 0,25$	$\pm 0,20$	0,64	0,48	0,40	0,32
$15,00 < d \leq 25,00$	$\pm 0,50$	$\pm 0,35$	$\pm 0,30$	$\pm 0,25$	0,80	0,56	0,48	0,40
$25,00 < d \leq 40,00$	$\pm 0,60$	$\pm 0,40$	$\pm 0,35$	$\pm 0,30$	0,96	0,64	0,56	0,48
$40,00 < d \leq 50,00$	$\pm 0,80$	$\pm 0,50$	$\pm 0,40$	-	1,28	0,80	0,64	-
$50,00 < d \leq 60,00$	$\pm 1,00$	$\pm 0,60$	-	-	1,60	0,96	-	-

^a For the size range $5,00 \text{ mm} < d \leq 10,00 \text{ mm}$, larger values for the tolerance may be agreed upon between the parties.

^b For other strict class tolerances, tolerance may be agreed upon between the parties.