BRITISH STANDARD

BS EN
10017:2004

Steel rod for drawing and/or cold rolling — Dimensions and tolerances

The European Standard EN 10017:2004 has the status of a British Standard

ICS 77.140.65

BSI
British Standards

National foreword

This British Standard is the official English language version of EN 10017:2004. It supersedes BS 4956:1973 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/71, Steel rods for wire drawing, which has the responsibility to:

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 27 October 2004

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 15 and a back cover.

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN 10017

October 2004

ICS 77.140.65

Supersedes EURONORM 17:1970

English version

Steel rod for drawing and/or cold rolling - Dimensions and tolerances

Fil machine en acier non allié destiné au tréfilage et/ou laminage à froid - Dimensions et tolérances

Walzdraht aus Stahl zum Ziehen und/oder Kaltwalzen - Maße und Grenzabmaße

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Ref. No. EN 10017:2004: E

Contents

Foreword

This document (EN 10017:2004) has been prepared by Technical Committee ECISS/TC 15 “Wire rod - Qualities, dimensions, tolerances and specific tests”, 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of an identical text or by endorsement, at the latest by April 2005, and conflicting national standards shall be withdrawn at the latest by April 2005.

This document supersedes EURONORM 17 (1970).

This document includes a Bibliography.

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1 Scope

This document specifies the dimensions, the tolerances, the nominal cross-section and the nominal mass of steel rod for drawing.

This document concerns round, square, rectangular and hexagonal rod in steel grades specified in European Standards.

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.

The requirements of this document rule when they differ from those in the standards and documents referred to below.

EN 10021, *General technical delivery requirements for steel and iron products*

EN 10079:1992, *Definition of steel products*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10079:1992 apply.

4 Information to be supplied by the purchaser

4.1 Information to be supplied by the purchaser

The following information shall be supplied by the purchaser at the time of enquiry and order, to enable the supplier to comply satisfactorily with the requirements of this document:

a) quantity to be delivered

b) product denomination (rod)

c) section (round, square, rectangular, hexagonal)

d) reference to this document

e) nominal dimensions in millimetres

f) information included in the quality product European Standard

4.2 Examples

Round rod with a diameter of 10 mm in steel C10D according EN 10016-2:

EXAMPLE 1 Round rod EN 10017 - 10 - EN 10016-2 - C10D

Rectangular rod with a width of 30 mm and thickness 5 mm in steel C3D1 according EN 10016-3:

EXAMPLE 2 Rectangular rod EN 10017 - 30 x 5 - EN 10016-3 - C3D1

Hexagonal rod with a wrench opening of 10 mm in steel C70D2 according EN 10016-4:

EXAMPLE 3 Hexagonal rod EN 10017 - 10 - EN 10016-4 - C70D2

5 Nominal sections and nominal mass

The values for sections and mass are shown in Tables 1 to 4 and are given as a guide.

They have been calculated and rounded off on the basis of nominal sizes and a density of 7,85 kg/dm$^{3.}$

For stainless steels to calculate the nominal mass, densities should be obtained from EN 10088-1.

6 Dimensions and tolerances

6.1 Round rod (Fig. 1)

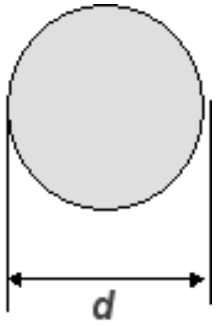

Figure 1 — Round rod

Table 1 — Dimensions, tolerances, nominal section and nominal mass

Nominal diameter ***d*** (mm)	Tolerance on diameter (mm)	Tolerance on ovality [a] (mm)	Nominal section (mm^2)	Nominal mass (kg/m)
5	± 0,3		19,63	0,154
5,5	± 0,3		23,76	0,187
6	± 0,3		28,27	0,222
6,5	± 0,3		33,18	0,26
7	± 0,3		38,48	0,302
7,5	± 0,3		44,18	0,347
8	± 0,3		50,26	0,395
8,5	± 0,3		56,74	0,445
9	± 0,3		63,62	0,499
9,5	± 0,3		70,88	0,556
10	± 0,4		78,54	0,617
10,5	± 0,4		86,59	0,68
11	± 0,4		95,03	0,746
11,5	± 0,4	80 %	103,9	0,816
12	± 0,4	of the	113,1	0,888
12,5	± 0,4	total tolerance	122,7	0,963
13	± 0,4	on the diameter	132,7	1,04
13,5	± 0,4		143,1	1,12
14	± 0,4		153,9	1,21
14,5	± 0,4		165,1	1,3
15	± 0,4		176,7	1,39
15,5	± 0,4		188,7	1,48
16	± 0,5		201,1	1,58
16,5	± 0,5		213,8	1,68
17	± 0,5		227,0	1,78
17,5	± 0,5		240,5	1,89
18	± 0,5		254,5	2,00
18,5	± 0,5		268,8	2,11
19	± 0,5		283,5	2,23
19,5	± 0,5		298,6	2,34

(Continued)

Table 1 — Dimensions, tolerances, nominal section and nominal mass

(concluded)

Nominal diameter ***d*** (mm)	Tolerance on diameter (mm)	Tolerance on ovality [a] (mm)	Nominal section (mm^2)	Nominal mass (kg/m)
20	± 0,5	80 % of the total tolerance on the diameter	314,2	2,47
21	± 0,5		346,3	2,72
22	± 0,5		380,1	2,98
23	± 0,5		415,5	3,26
24	± 0,5		452,4	3,55
25	± 0,5		490,9	3,85
26	± 0,6		530,9	4,17
27	± 0,6		572,6	4,49
28	± 0,6		615,7	4,83
29	± 0,6		660,5	5,18
30	± 0,6		706,9	5,55
31	± 0,6		754,4	5,93
32	± 0,6		803,8	6,31
33	± 0,6		854,9	6,71
34	± 0,6		907,5	7,13
35	± 0,6		961,6	7,55
36	± 0,6		1017,4	7,99
37	± 0,6		1074,7	8,44
38	± 0,6		1133,5	8,90
39	± 0,6		1194	9,38
40	± 0,8		1256	9,87
41	± 0,8		1319,6	10,36
42	± 0,8		1384,7	10,88
43	± 0,8		1451,5	11,40
44	± 0,8		1519,7	11,93
45	± 0,8		1589.6	12,49
46	± 0,8		1661,1	13,05
47	± 0,8		1734,1	13,62
48	± 0,8		1808,7	14,20
49	± 0,8		1884,8	14,80
50	± 0,8		1962,5	15,41

[a] Difference between the maximum and minimum diameter on the same cross section

6.2 Square rod (Fig. 2)

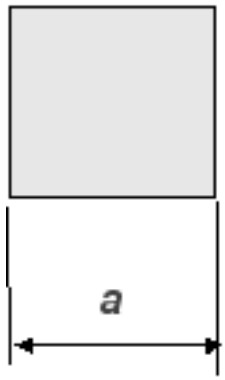

Figure 2 — Square rod

Table 1 — Dimensions, tolerances, nominal section and nominal mass

Nominal side ***a*** (mm)	Tolerance on the side (mm)	Difference between maximum side and minimum side [a] (mm)	Nominal section (mm^2)	Nominal mass (kg/m)
16	± 0,5	80 % of the total tolerance on the side	256,0	2,01
17	± 0,5		289,0	2,27
18	± 0,5		324,0	2,54
19	± 0,5		361,0	2,83
20	± 0,5		400,0	3,14
21	± 0,5		441,0	3,46
22	± 0,5		484,0	3,80
23	± 0,5		529,0	4,15
24	± 0,5		576,0	4,52
25	± 0,5		625,0	4,91
26	± 0,6		676,0	5,31
27	± 0,6		729,0	5,72
28	± 0,6		784,0	6,15
29	± 0,6		841,0	6,60
30	± 0,6		900,0	7,10
31	± 0,6		961,0	7,54
32	± 0,6		1024,0	8,04

[a] On the same cross section

6.3 Rectangular rod (Fig. 3)

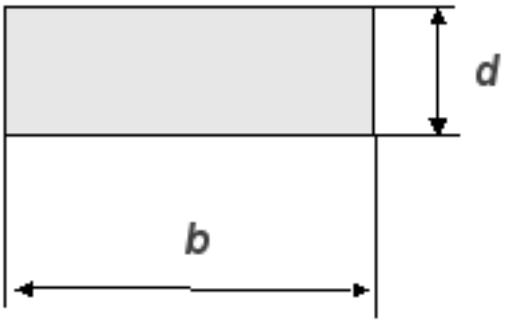

Figure 3 — Rectangular rod

Table 3 — Dimensions, tolerances, nominal section and nominal mass

b x ***d*** nominal (mm)	Tolerances on		Nominal section (mm^2)	Nominal mass (kg/m)
	b (mm)	***d*** (mm)		
16 x 11	± 0,5	± 0,4	176,0	1,38
16 x 12	± 0,5	± 0,4	192,0	1,51
17 x 11	± 0,5	± 0,4	187,0	1,47
17 x 12	± 0,5	± 0,4	204,0	1,6
18 x 10	± 0,5	± 0,4	180,0	1,41
18 x 11	± 0,5	± 0,4	198,0	1,55
18 x 12	± 0,5	± 0,4	216,0	1,70
19 x 10	± 0,5	± 0,4	190,0	1,49
19 x 11	± 0,5	± 0,4	209,0	1,64
19 x 12	± 0,5	± 0,4	228,0	1,79
19 x 13	± 0,5	± 0,4	247,0	1,94
20 x 9	± 0,5	± 0,4	180,0	1,41
20 x 10	± 0,5	± 0,4	200,0	1,57
20 x 11	± 0,5	± 0,4	220,0	1,73
20 x 12	± 0,5	± 0,4	240,0	1,88
20 x 13	± 0,5	± 0,4	260,0	2,04
20 x 14	± 0,5	± 0,4	280,0	2,20
20 x 15	± 0,5	± 0,4	300,0	2,36
20 x 16	± 0,5	± 0,4	320,0	2,51

(continued)

Table 3 — Dimensions, tolerances, nominal section and nominal mass

b x ***d*** nominal (mm)	Tolerances on		Nominal section (mm^2)	Nominal mass (kg/m)
	b (mm)	***d*** (mm)		
22 x 8	± 0,6	± 0,4	176,0	1,38
22 x 9	± 0,6	± 0,4	198,0	1,55
22 x 10	± 0,6	± 0,4	220,0	1,73
22 x 11	± 0,6	± 0,4	242,0	1,90
22 x 12	± 0,6	± 0,4	264,0	2,07
22 x 13	± 0,6	± 0,4	286,0	2,25
22 x 14	± 0,6	± 0,4	308,0	2,42
22 x 15	± 0,6	± 0,4	330,0	2,59
22 x 16	± 0,6	± 0,4	352,0	2,76
22 x 17	± 0,6	± 0,4	374,0	2,94
25 x 7	± 0,6	± 0,3	175,0	1,37
25 x 8	± 0,6	± 0,4	200,0	1,57
25 x 9	± 0,6	± 0,4	225,0	1,77
25 x 10	± 0,6	± 0,4	250,0	1,96
25 x 11	± 0,6	± 0,4	275,0	2,16
25 x 12	± 0,6	± 0,4	300,0	2,36
25 x 13	± 0,6	± 0,4	325,0	2,55
25 x 14	± 0,6	± 0,4	350,0	2,75
25 x 15	± 0,6	± 0,4	375,0	2,94
25 x 16	± 0,6	± 0,4	400,0	3,14
25 x 17	± 0,6	± 0,4	425,0	3,34
26 x 7	± 0,6	± 0,3	182,0	1,43
26 x 8	± 0,6	± 0,4	208,0	1,63
26 x 9	± 0,6	± 0,4	234,0	1,84
26 x 10	± 0,6	± 0,4	260,0	2,04
26 x 11	± 0,6	± 0,4	286,0	2,25
26 x 12	± 0,6	± 0,4	312,0	2,45
26 x 13	± 0,6	± 0,4	338,0	2,65
26 x 14	± 0,6	± 0,4	364,0	2,86
26 x 15	± 0,6	± 0,4	390,0	3,06
26 x 16	± 0,6	± 0,4	416,0	3,27
26 x 17	± 0,6	± 0,4	442,0	3,47
26 x 18	± 0,6	± 0,4	468,0	3,67
26 x 20	± 0,6	± 0,4	520,0	4,08

(continued)

Table 3 — Dimensions, tolerances, nominal section and nominal mass

(concluded)

b x ***d*** nominal (mm)	Tolerances on		Nominal section (mm^2)	Nominal mass (kg/m)
	b (mm)	***d*** (mm)		
28 x 6,5	± 0,6	± 0,3	182,0	1,43
28 x 7	± 0,6	± 0,3	196,0	1,54
28 x 8	± 0,6	± 0,4	224,0	1,76
28 x 9	± 0,6	± 0,4	252,0	1,98
29 x 10	± 0,6	± 0,4	280,0	2,20
28 x 11	± 0,6	± 0,4	308,0	2,42
28 x 12	± 0,6	± 0,4	336,0	2,64
28 x 13	± 0,6	± 0,4	364,0	2,86
28 x 14	± 0,6	± 0,4	392,0	3,08
28 x 15	± 0,6	± 0,4	420,0	3,30
30 x 6	± 0,6	± 0,3	180,0	1,41
30 x 6,5	± 1,6	± 0,3	195,0	1,53
30 x 7	± 0,6	± 0,3	210,0	1,65
30 x 8	± 0,6	± 0,4	240,0	1,88
30 x 9	± 0,6	± 0,4	270,0	2,12
30 x 10	± 0,6	± 0,4	300,0	2,36
30 x 11	± 0,6	± 0,4	330,0	2,59
30 x 12	± 0,6	± 0,4	360,0	2,83
30 x 13	± 0,6	± 0,4	390,0	3,06
30 x 14	± 0,6	± 0,4	420,0	3,30
30 x 15	± 0,6	± 0,4	450,0	3,53
30 x 16	± 0,6	± 0,4	480,0	3,77
30 x 17	± 0,6	± 0,4	510,0	4,00
30 x 18	± 0,6	± 0,4	540,0	4,24
30 x 20	± 0,6	± 0,4	600,0	4,71

6.4 Hexagonal Rod (Fig. 4)

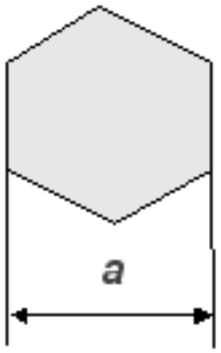

Figure 4 — Hexagonal rod

Table 4 — Dimensions, tolerances, nominal section and nominal mass

Nominal wrench opening ***a*** (mm)	Tolerance on wrench opening (mm)	Difference between maximum and minimum wrench opening [a] (mm)	Nominal section (mm^2)	Nominal mass (kg/m)
8	± 0,4		55,43	0,435
9	± 0,4		70,15	0,551
10	± 0,4		86,60	0,680
11	± 0,4		104,8	0,823
12	± 0,4		124,7	0,979
13	± 0,4		146,4	1,15
14	± 0,4	80 %	169,7	1,33
15	± 0,4	of the	194,9	1,53
16	± 0,5	total tolerance	221,7	1,74
17	± 0,5	on the	250,3	1,96
18	± 0,5	wrench opening	280,6	2,20
19	± 0,5		312,6	2,45
20	± 0,5		346,4	2,72
22	± 0,5		419,2	3,29
23	± 0,5		458,1	3,60
24	± 0,5		498,8	3,92
25	± 0,5		541,3	4,25

(continued)

Table 4 — Dimensions, tolerances, nominal section and nominal mass

(Concluded)

Nominal wrench opening ***a*** (mm)	Tolerance on wrench opening (mm)	Difference between maximum and minimum wrench opening [a] (mm)	Nominal section (mm^2)	Nominal mass (kg/m)
26	± 0,6	80 % of the total tolerance on the wrench opening	585,4	4,60
27	± 0,6		631,3	4,96
28	± 0,6		679,0	5,33
29	± 0,6		728,3	5,71
30	± 0,6		779,4	6,12
31	± 0,6		831,9	6,53
32	± 0,6		886,8	6,96
33	± 0,8		943,1	7,40
34	± 0,8		1001,1	7,86
35	± 0,8		1060,9	8,33
36	± 0,8		1122,4	8,81
37	± 0,8		1185,6	9,31
38	± 0,8		1250,5	9,82
39	± 0,8		1317.2	10,34
40	± 0,8		1385,6	10,88

[a] On the same cross section.

7 Mass of coils and checks on dimensional tolerances

7.1 Mass and tolerance on mass of individual coils may be agreed between manufacturer and purchaser.

In any delivery it is permitted that a maximum of 5% of the coils may be supplied with a mass less than the specified minimum mass.

7.2 Tolerances are checked on a cross section of a specimen, which is a length of rod taken from the test unit. The number of specimens to be taken from the test unit should be agreed at the time of the order. It should also be agreed the number of specimens to be taken from the test unit when complementary tests will be made.

In the event of a dispute the dimensions of the rod shall be measured at a distance from the ends of the coil greater than those included in Table 5.

Table 5 — Distance from the ends

Diameter (or diameter of the equivalent section) of the rod (mm)			Distance from the ends of the coil (m)
5	to	6,5	≥ 5
7	to	12,5	≥ 4
13	to	17,5	≥ 3
18	to	22	≥ 2
23	to	27	≥ 1,5
28	to	50	≥ 1

8 Claims

For claims and their outcome see EN 10021.

Bibliography

[1] EN 10088-1, *Stainless steels - Part 1: List of stainless steel*

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