



# SLOVENSKI STANDARD

## SIST EN 10218-2:2012

01-marec-2012

Nadomešča:

SIST EN 10218-2:1997

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### Jeklena žica in žični izdelki - Splošno - 2. del: Mere žic in tolerance

Steel wire and wire products - General - Part 2: Wire dimensions and tolerances

Stahldraht und Drahterzeugnisse - Allgemeines - Teil 2: Drahtmaße und Toleranzen

Fils et produits tréfilés en acier - Généralités - Partie 2: Dimensions et tolérances des fils  
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#### **ICS:**

77.140.65	Jeklene žice, jeklene vrvi in verige	Steel wire, wire ropes and link chains
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**SIST EN 10218-2:2012**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 10218-2**

January 2012

ICS 77.140.65

Supersedes EN 10218-2:1996

English Version

## Steel wire and wire products - General - Part 2: Wire dimensions and tolerances

Fils et produits tréfilés en acier - Généralités - Partie 2 :  
Dimensions et tolérances des fils

Stahldraht und Drahterzeugnisse - Allgemeines - Teil 2:  
Drahtmaße und Toleranzen

This European Standard was approved by CEN on 3 September 2011.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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## Foreword

This document (EN 10218-2:2012) has been prepared by Technical Committee ECISS/TC 106 “Wire rod and wires”, the secretariat of which is held by AFNOR.

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 July 2012, and conflicting national standards shall be withdrawn at the latest by July 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 10218-2:1996.

The standard will comprise the following parts:

- *Part 1: Test methods;*
- *Part 2: Wire dimensions and tolerances.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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**EN 10218-2:2012 (E)****1 Scope**

This European Standard specifies the tolerances on diameter of round wire and, where applicable, on the length of round wire cut to length, for bright steel wire, (i.e. uncoated), metallic coated steel wire and non-metallic coated steel wire.

This European Standard should not be applied where other requirements for dimensions and tolerances are specified in a particular product standard.

**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.

EN 10079:2007, *Definition of steel products*

**3 Terms and definitions**

For the purposes of this document, the following terms and definitions apply.

**3.1 wire**

product of constant full cross section along its length, obtained by cold drawing rod through a reducing die or passing under pressure between rollers and rewinding the drawn product

NOTE 1 The cross section is generally round, though sometimes oval, rectangular, square, hexagonal, octagonal or other convex section.

NOTE 2 The manufacturing processes give close control of geometric (size, surface condition) and mechanical properties. Wire may be supplied uncoated (as drawn, annealed) or coated (e.g. with zinc, copper, nickel or plastic materials).

NOTE 3 Heat treatments and/or surface treatments may be carried out during the course of manufacture to improve the properties of wire.

[EN 10079:2007]

NOTE 4 As well as being supplied in the uncoated (bright) condition, wire can also be supplied with metallic or non-metallic coatings or both. The metallic coating can be as a finished coating or as a drawn finished coating.

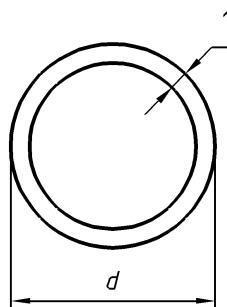
**3.2 cut length**

straightened piece of wire cut to a specified length

## 4 Wire diameter tolerance

### 4.1 Tolerance on diameter of uncoated and metallic coated round steel wire

#### 4.1.1 General



#### Key

- 1 metallic coating thickness in mm  
 d overall diameter in mm (including, where existing, the metallic coating)

Figure 1 — For Table 1

Diameter measurements shall be made at any cross-section and shall not differ from the tolerances specified in the relevant tables in this standard.

NOTE 1 Diameter tolerances may vary when cut lengths are supplied by a third party.

NOTE 2 Diameter tolerances are calculated as follows:

$$T1 = 0,035 \sqrt{d}$$

$$T2 = 0,027 \sqrt{d}$$

$$T3 = 0,021 \sqrt{d}$$

$$T4 = 0,015 \sqrt{d}$$

$$T5 = 0,010 \sqrt{d}$$

where

$d$  is the overall diameter measured in mm (including, where existing, the metallic coating)

The purchaser or the product standard shall indicate the tolerance range required from Table 1.

The overall diameter shall be within the relevant tolerance range given in Table 1; the producer will adapt processing parameters to ensure compliance with the required properties of the wire in the respective product standard, taking into account the influence of the coating thickness (if applicable).

NOTE 3 Unless otherwise specified on the order/enquiry or the product standard, tolerances class T1 would generally be used for heavy galvanised (A) wire, T2 would generally be used for other galvanised wire, and T3, T4 and T5 would generally be used for bright drawn wire in increasing order of precision required.

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## 4.1.2 Out of roundness (ovality)

The out of roundness is the difference between maximum and minimum diameter of the wire at any cross-section and shall not be more than one half of the total tolerance given in Table 1.

For diameters  $d$  from 0,050 mm to 25,00 mm, the tolerances on diameter shall be as follows:

Table 1 — Diameter tolerances

Dimensions in millimetres

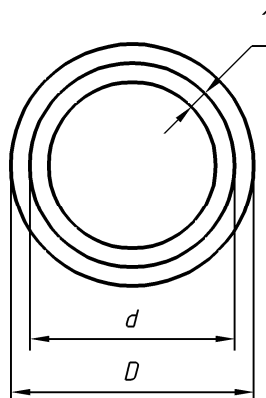
Diameter tolerance	Wire diameter range				
	mm				
	$d$				
	T1	T2	T3	T4	T5
$\pm 0,003$	–	–	–	–	$0,050 \leq d < 0,091$
$\pm 0,004$	–	–	–	$0,05 \leq d < 0,072$	$0,091 \leq d < 0,17$
$\pm 0,005$	–	–	–	$0,072 \leq d < 0,12$	$0,17 \leq d < 0,26$
$\pm 0,006$	–	–	$0,05 \leq d < 0,12$	$0,12 \leq d < 0,17$	$0,26 \leq d < 0,37$
$\pm 0,008$	–	–	$0,12 \leq d < 0,15$	$0,17 \leq d < 0,29$	$0,37 \leq d < 0,65$
$\pm 0,010$	–	–	$0,15 \leq d < 0,23$	$0,29 \leq d < 0,45$	$0,65 \leq d < 1,01$
$\pm 0,012$	–	–	$0,23 \leq d < 0,33$	$0,45 \leq d < 0,65$	$1,01 \leq d < 1,45$
$\pm 0,015$	–	$0,20 \leq d < 0,31$	$0,33 \leq d < 0,52$	$0,65 \leq d < 1,01$	$1,45 \leq d < 2,26$
$\pm 0,020$	–	$0,31 \leq d < 0,55$	$0,52 \leq d < 0,91$	$1,01 \leq d < 1,78$	$2,26 \leq d < 4,01$
$\pm 0,025$	$0,30 \leq d < 0,52$	$0,55 \leq d < 0,86$	$0,91 \leq d < 1,42$	$1,78 \leq d < 2,78$	$4,01 \leq d < 6,26$
$\pm 0,030$	$0,52 \leq d < 0,74$	$0,86 \leq d < 1,24$	$1,42 \leq d < 2,05$	$2,78 \leq d < 4,01$	$6,26 \leq d < 9,01$
$\pm 0,035$	$0,74 \leq d < 1,01$	$1,24 \leq d < 1,69$	$2,05 \leq d < 2,78$	$4,01 \leq d < 5,45$	$9,01 \leq d < 12,26$
$\pm 0,040$	$1,01 \leq d < 1,31$	$1,69 \leq d < 2,20$	$2,78 \leq d < 3,63$	$5,45 \leq d < 7,12$	$12,26 \leq d < 16,01$
$\pm 0,045$	$1,31 \leq d < 1,66$	$2,20 \leq d < 2,78$	$3,63 \leq d < 4,60$	$7,12 \leq d < 9,01$	$16,01 \leq d < 20,26$
$\pm 0,050$	$1,66 \leq d < 2,05$	$2,78 \leq d < 3,43$	$4,60 \leq d < 5,67$	$9,01 \leq d < 11,12$	$20,26 \leq d \leq 25,00$
$\pm 0,060$	$2,05 \leq d < 2,94$	$3,43 \leq d < 4,94$	$5,67 \leq d < 8,17$	$11,12 \leq d < 16,01$	–
$\pm 0,070$	$2,94 \leq d < 4,01$	$4,94 \leq d < 6,73$	$8,17 \leq d < 11,12$	$16,01 \leq d < 21,77$	–
$\pm 0,080$	$4,01 \leq d < 5,23$	$6,73 \leq d < 8,78$	$11,12 \leq d < 14,52$	$21,77 \leq d \leq 25,00$	–
$\pm 0,090$	$5,23 \leq d < 6,62$	$8,78 \leq d < 11,12$	$14,52 \leq d < 18,37$	–	–
$\pm 0,100$	$6,62 \leq d < 8,17$	$11,12 \leq d < 13,72$	$18,37 \leq d < 22,68$	–	–
$\pm 0,120$	$8,17 \leq d < 11,76$	$13,72 \leq d < 19,76$	$22,68 \leq d \leq 25,00$	–	–
$\pm 0,140$	$11,76 \leq d < 16,01$	$19,76 \leq d \leq 25,00$	–	–	–
$\pm 0,160$	$16,01 \leq d < 20,90$	–	–	–	–
$\pm 0,180$	$20,90 \leq d \leq 25,00$	–	–	–	–



## 4.2 Tolerances on diameter of organic coated wire

### 4.2.1 General

See Figure 2:



#### Key

- 1 metallic coating thickness in mm
- $d$  overall diameter in mm (including, where existing, the metallic coating)
- $D$  overall diameter in mm (including organic coating)

**Figure 2 — Sketch for Table 2**

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### 4.2.2 Extruded organic coating

Tolerances on diameter of extruded organic coated wire are given in Table 2.

The core wire can be either bright or metallic coated (usually zinc).

### 4.2.3 Sintered organic coating

The tolerances on diameter of sintered organic coated wire are given in Table 2. Generally, the core wire is metallic coated (usually zinc coated).