SLOVENSKI STANDARD
SIST EN 10264-3:2012

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Nadomešča:
SIST EN 10264-3:2003

Jeklena žica in žični izdelki - Jeklena žica za vrvi - 3. del: Okrogla in oblikovana nelegirana jeklena žica za velike obremenitve

Steel wire and wire products - Steel wire for ropes - Part 3: Round and shaped non alloyed steel wire for high duty applications

Stahldraht und Drahterzeugnisse - Stahldraht für Seile - Teil 3: Runder und profilierter Draht aus unlegiertem Stahl für hohe Beanspruchungen

Fils et produits tréfilés en acier - Fils pour câbles - Partie 3: Fils ronds et profilés, en acier non aillé, pour fortes sollicitations

Ta slovenski standard je istoveten z: **EN 10264-3:2012**

ICS:

77.140.45	Nelegirana jekla	Non-alloyed steels
77.140.65	Jeklene žice, jeklene vrvi in verige	Steel wire, wire ropes and link chains

SIST EN 10264-3:2012 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 10264-3

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ICS 77.140.65

Supersedes EN 10264-3:2002

English Version

Steel wire and wire products - Steel wire for ropes - Part 3: Round and shaped non alloyed steel wire for high duty applications

Fils et produits tréfilés en acier - Fils pour câbles - Partie 3: Fils ronds et profilés, en acier non aillé, pour fortes sollicitations

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Contents

Page

Foreword

This document (EN 10264-3:2012) 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of an identical text or by endorsement, at the latest by July 2012, and conflicting national standards shall be withdrawn at the latest by July 2012.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 10264-3:2002.

This European Standard for wire for ropes is made up of the following parts:

— *Part 1: General requirements*

— *Part 2: Cold drawn non alloy steel wire for ropes for general applications*

— *Part 3: Round and shaped non alloyed steel wire for high duty applications*

— *Part 4: Stainless steel wire*

This European Standard has been technically revised to incorporate the following changes:

a) heavy duty applications have been explained in the new last sentence of the scope;

b) the purity of the zinc coating of the drawn wire has been specified according the relevant EN 1179 (see Clause 4);

c) a footnote c) has been added in Table 1 in order to precise the meaning of coated;

d) the values of the Z and H profiles have been updated in Table 2;

e) a note has been added to allow other wire diameters higher than those given in Table 3 "Dimensional tolerances on round wire diameter" subject to an agreement between supplier and user at the time of order;

f) modifications have been made on values concerning "Coated – Class A" given in Table 4 "Dimensional tolerances for shaped wire";

g) modifications have been made in Table 5 "Minimum number of reverse bends for shaped wire for static applications" concerning the values of Z profile for the height of profile upper to 5 mm;

h) a second quality of zinc coating has been added for dynamic applications (see 5.3.4);

i) three additional ranges for Nominal dimensions of round wire (from 0,50 mm to 0,80 mm) have been added (see Table 11 "Minimum mass of coating").

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.

1 Scope

This part of this European Standard specifies round and shaped non alloyed steel wire for use in the manufacture of ropes for mine hoisting, man-riding haulage, cableways for the transportation of passengers and other high duty applications. Heavy duty refers to situations where the stresses applied to the rope are either high or vary by a large amount during service.

This part of this European Standard refers to round wires and three types of shaped wire: full lock (Z), half lock (H) and trapezoidal (T).

In addition to the requirements of this part of this European Standard, the requirements of EN 10264-1 also apply.

It does not apply to steel wire taken from manufactured ropes.

This part of this European Standard specifies the following for cold drawn non alloyed steel wire for ropes for high duty applications:

— dimensional tolerances;

— mechanical characteristics;

— requirements relating to the chemical composition of the steel wire;

— conditions to be satisfied by any coating.

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 1179, *Zinc and zinc alloys — Primary zinc*

EN 10218-1, *Steel wire and wire products — General — Part 1: Test methods*

EN 10244-2, *Steel wire and wire products — Non-ferrous metallic coatings on steel wire — Part 2: Zinc or zinc alloy coatings*

EN 10264-1:2011, *Steel wire and wire products — Steel wire for ropes — Part 1: General requirements*

EN ISO 16120-1:2011, *Non-alloy steel wire rod for conversion to wire - Part 1: General requirements (ISO 16120-1:2011)*

EN ISO 16120-2:2011, *Non-alloy steel wire rod for conversion to wire - Part 2: Specific requirements for general-purpose wire rod (ISO 16120-2:2011)*

EN ISO 16120-4:2011, *Non-alloy steel wire rod for conversion to wire - Part 4: Specific requirements for wire rod for special applications (ISO 16120-4:2011)*

3 Designation of the product

The designation of wire for ropes manufactured in accordance with this European Standard shall be based on the nominal dimension, surface appearance and tensile strength.

The indicator of dimension for round wire is the nominal diameter; for shaped wire it is the value of the height (h), followed by a letter specifying the profile. In the case of H profiles, this indicator shall be followed by the value of the narrowing.

The surface appearance shall be indicated as defined in EN 10264-1 with U for uncoated or bright wire, with a letter indicating the class of coating (A, B, …) and in the case of zinc alloy coatings, indicating in brackets (Zn/Al).

EXAMPLE 1 2,0 mm wire for rope with thick zinc layer, class A, tensile strength grade 1 570 MPa, in accordance with EN 10264-3.

Designation: wire for rope EN 10264-3 – 2,0 - A – 1 570

EXAMPLE 2 Wire for rope, trapezoidal profile, h = 3,5 mm, class B zinc coated, tensile strength grade 1 770 MPa, in accordance with EN 10264-3.

Designation: wire for rope EN 10264-3 - T3,5 - B – 1 770

EXAMPLE 3 H shaped wire for rope h = 3,0 mm, w = 1,8 mm, coated with class A zinc alloy, tensile strength grade 1 370 MPa, in accordance with EN 10264-3.

Designation: wire for rope EN 10264-3 - H – 3,0 x 1,8 - A (Zn/Al) – 1 370

4 General conditions of manufacture

The drawn wire shall be manufactured from rod in accordance with EN ISO 16120-1 and EN ISO 16120-2 for ropes for static applications, and in accordance with EN ISO 16120-1 and EN ISO 16120-4 for ropes for dynamic applications.

The drawn wire shall show no surface defects or internal defects prejudicial to its use.

When specified, the drawn wire shall be supplied with a coating applied by a hot dipping or electrolytic method. The coatings commonly used are zinc or Zn95/Al5.

Unless otherwise specified, the zinc used for coating shall have a purity of 99,95 % according to EN 1179, Z3, other zinc alloys may be agreed at the time of enquiry and order.

NOTE If required by the purchaser, the quality of the zinc or zinc alloy used for the coating material (zinc or zinc alloy) should be certified by the manufacturer. Because of the reaction between the base material and coating material, which is inherent to the process, the composition of the coating on the wire is different to that used in the coating bath.

5 Characteristics of the wire

5.1 Tensile strength grades

The tensile strength grades are defined in Table 1.

NOTE The nominal values are the minimum tensile strength limits. The upper limits (maximum) are equal to these minimum values increased with the tolerances specified in EN 10264-1:2011, Table 1.

Table 1 — Tensile strength grade

Quality of wire [c]		Nominal tensile strength grade MPa [a]							
Round	Bright or coated Class B	—	—	—	1 570	—	1 770	1 960	2 160
	Zinc or Zn95/Al5 - Class A	—	—	—	1 570	—	1 770	—	—
Shaped	Bright or coated Class B or class D [b]	—	1 370	—	1 570	—	1 770	—	—
		1 270	1 370	1 470	1 570	1 670	1 770	—	—
	Zinc or Zn95/Al5 - Class A	—	1 370	—	1 570	—	—	—	—

NOTE Subject to agreement between the manufacturer and the purchaser, other tensile strength grades can be used.

[a] 1 MPa = 1 N/mm^2.

[b] Mass of coatings for static and dynamic applications are specified in Table 11.

[c] Coated means zinc or Zn95/Al5 alloy.

5.2 Profiles

5.2.1 Definition of shaped wire

For shaped wire, the characteristic sections of the wire are shown in Figure 1 for full lock Z, half lock H and trapezoidal T wires.

The nominal dimensions and tolerances shall be agreed between the supplier and the purchaser at the time of ordering. The conventional characteristic values are as follows:

h height: difference between the radii of the 2 concentric boundary circles;

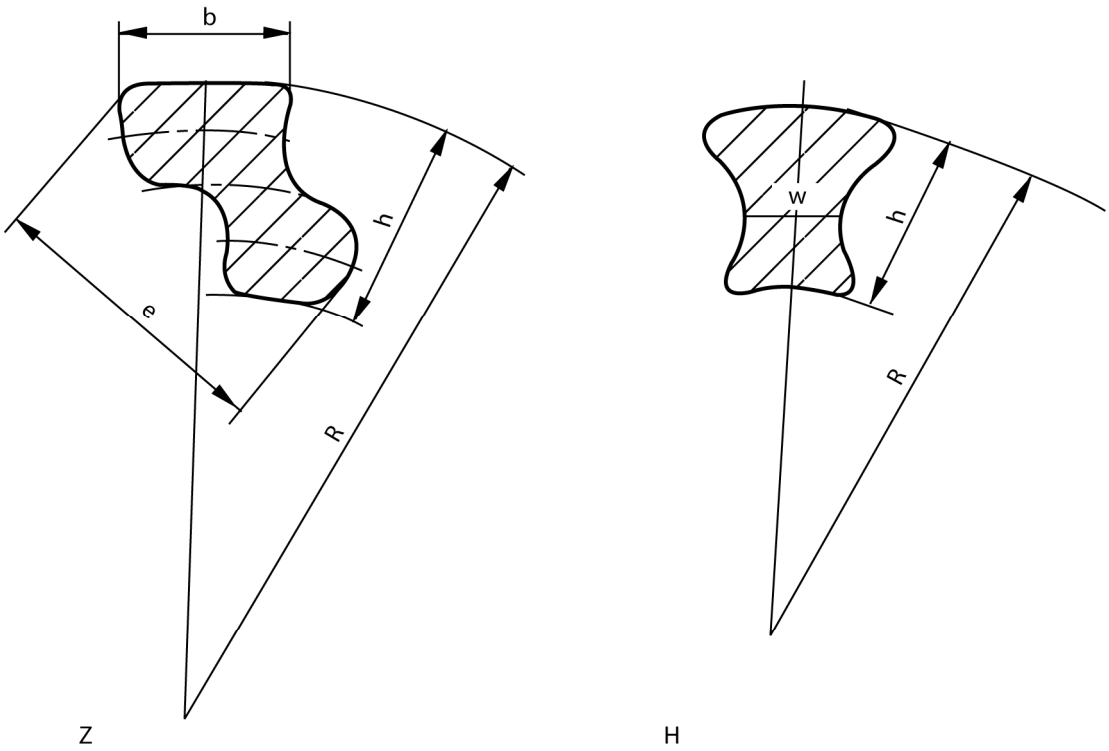
b width: maximum width of upper part perpendicular to a radial line passing through the centre of the width (as shown in Figure 1);

w minimum narrowing: smallest width of the profile;

e distance taken diagonally across the transverse section of the profile (essentially T or Z profiles).

The designation of a full lock wire is established using the letter Z and the height (h), that of a half lock wire by H followed by the height (h) and the minimum narrowing (w) ($h \times w$) and that of a trapezoidal wire by the letter T followed by the height (h).

Table 2 gives the design criteria for the shaped wire shown in Figure 1. These are the relation between the height of the shaped wires and the other major characteristic dimensions.



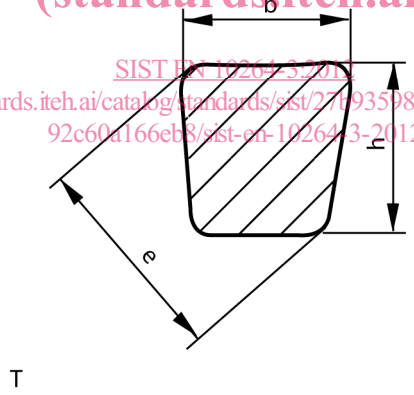


Figure 1 — Shaped wire sections

Table 2 — Design criteria for shaped wire

Ratio	Z profile	H profile	Trapezoidal profile T
$h : b$	0,9 to 1,55	-	1,0 to 1,3
$h : e$	0,55 to 0,80	-	0,75 to 0,90
$h : w$	-	0,8 to 2,3	