

# SLOVENSKI STANDARD

## SIST EN 10264-2:2022

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Nadomešča:  
SIST EN 10264-2:2012

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**Jeklena žica in žični izdelki - Jeklena žica za vrvi - 2. del: Hladno vlečena nelegirana jeklena žica za vrvi za splošno uporabo**

Steel wire and wire products - Steel wire for ropes - Part 2: Cold drawn non alloy steel wire for ropes for general applications

Stahldraht und Drahterzeugnisse - Stahldraht für Seile - Teil 2: Kaltgezogener Draht aus unlegiertem Stahl für Seile für allgemeine Verwendungszwecke

Fils et produits tréfilés en acier - Fils pour câbles - Partie 2 : Fils écrouis à froid par tréfilage en acier non allié pour câbles d'usage général

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**Ta slovenski standard je istoveten z: EN 10264-2:2021**

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**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 10264-2:2022**

**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 10264-2**

December 2021

ICS 77.140.65

Supersedes EN 10264-2:2012

English Version

**Steel wire and wire products - Steel wire for ropes - Part 2:  
Cold drawn non alloy steel wire for ropes for general  
applications**

Fils et produits tréfilés en acier - Fils pour câbles -  
Partie 2 : Fils écrouis à froid par tréfilage en acier non  
allié pour câbles d'usage général

Stahldraht und Drahterzeugnisse - Stahldraht für Seile  
- Teil 2: Kaltgezogener Draht aus unlegiertem Stahl für  
Seile für allgemeine Verwendungszwecke

This European Standard was approved by CEN on 20 December 2020.

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<https://standards.iteh.ai/catalog/standards/sist/fee474a-87a3-4b9e-b4c4-e6ae7487e82f/sist-en-10264-2-2022>



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 10264-2:2021) has been prepared by Technical Committee CEN/TC 459 “ECISS - European Committee for Iron and Steel Standardization”<sup>1</sup>, 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 June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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

This document supersedes EN 10264-2:2012.

This document has been technically revised to incorporate the following changes:

- new tensile strength grades added in Table 1 and Table 2;
- coatings according to ASTM B997 added;
- coating requirements to salt-spray test added.

EN 10264, *Steel wire and wire products - Steel 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*

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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<sup>1</sup> Through its sub-committee SC 6 “Wire rod and wires” (secretariat: AFNOR).

**EN 10264-2:2021 (E)****1 Scope**

This part of EN 10264 defines cold drawn non alloy steel wire used for the manufacture of:

- ropes for general applications and lifts;
- ropes for applications for which there is no specific European Standard.

This part of EN 10264 does not apply to steel wire taken from manufactured ropes.

This part of EN 10264 specifies the following for cold drawn non alloy steel wire for ropes for general applications:

- dimensional tolerances;
- mechanical characteristics;
- requirements relating to the chemical composition of the steel wire;
- conditions to be satisfied by any coating.

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

**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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, *Steel wire and wire products - Steel wire for ropes - Part 1: General requirements*

EN ISO 9227, *Corrosion tests in artificial atmospheres - Salt spray tests (ISO 9227)*

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

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

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

**3 Terms and definitions**

No terms and definitions are listed in this document.

## 4 Product designation

The designation of round wire for ropes, covered by this part of EN 10264, shall be based on the nominal diameter ( $d$ ), surface appearance and tensile strength classification. The abbreviation for the surface finish condition is:

- U (uncoated) for bright wire;
- A or B for zinc or zinc alloy coating depending on coating class.

A distinction is made between a zinc and a zinc alloy coating by the addition in brackets of “Zn/Al” for the zinc alloy.

EXAMPLE 1 Wire for rope for general applications with nominal diameter  $d = 1,5$  mm, surface appearance bright (U), tensile strength grade 1 770 MPa.

**rope wire EN 10264-2 — 1,5 — U — 1 770**

EXAMPLE 2 Wire for rope for general applications with a nominal diameter  $d = 2,5$  mm, zinc coated class A, tensile strength grade 1 370 MPa.

**rope wire EN 10264-2 — 2,5 — A — 1 370**

EXAMPLE 3 Wire for rope for general applications with a nominal diameter  $d = 1,8$  mm, coated with zinc alloy, class B, tensile strength grade 1 770 MPa.

**rope wire EN 10264-2 — 1,8 — B(Zn/Al) — 1 770**

## 5 General conditions of manufacture

The drawn wire shall be manufactured using wire rod in accordance with either EN ISO 16120-1 and EN ISO 16120-2 or EN ISO 16120-1 and EN ISO 16120-4.

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

Drawn wire may be supplied with a zinc or zinc alloy coating according to ASTM B997. Unless otherwise specified, the zinc used for the zinc coating shall have a purity of 99,95 % according to EN 1179, Z3, other zinc alloys are subject to agreement.

## 6 Characteristics of wire

### 6.1 Tensile strength grades

The values for tensile strength grades shall be as specified in Table 1.

Additional grades are possible by agreement between supplier and user at the time of order. Corresponding properties will be agreed between the parties.

**Table 1 — Tensile strength grades and ranges of nominal diameters**

| Tensile strength grade<br>MPa <sup>a</sup>                                                   | Range of nominal diameters<br>mm         |                               |
|----------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------|
|                                                                                              | Bright and coated <sup>b</sup> – Class B | Coated <sup>b</sup> – Class A |
|                                                                                              | Class B                                  | Zinc or Zn/Al<br>Class A      |
| 1 180                                                                                        | 0,20 to 1,80                             | —                             |
| 1 370                                                                                        | 0,20 to 7,00                             | 0,70 to 7,00                  |
| 1 570                                                                                        | 0,20 to 7,00                             | 0,70 to 7,00                  |
| 1 770                                                                                        | 0,20 to 6,00                             | 0,70 to 6,20                  |
| 1 960                                                                                        | 0,20 to 5,00                             | 0,70 to 4,20                  |
| 2 160                                                                                        | 0,20 to 4,00                             | —                             |
| 2 260                                                                                        | 0,20 to 3,40                             | —                             |
| 2 360                                                                                        | 0,20 to 2,70                             | —                             |
| <sup>a</sup> 1 MPa = 1 N/mm <sup>2</sup> .<br><sup>b</sup> Coated means zinc or Zn/Al alloy. |                                          |                               |

## 6.2 Requirements for wire characteristics

The requirements for wire are specified in Table 2.

If required and agreed at the time of order between the customer and the supplier, wires not mentioned in Table 1 can be introduced. Corresponding characteristics will be agreed upon by the customer and the supplier.



Table 2 — Requirements for mechanical characteristics of wire <sup>c</sup>

| Nominal diameter $d$ of wire | Diameter tolerances                      |                               | $R$  | Minimum number of reverse bends           |       |       |       |       |                               |      |       |       |       | Minimum number of torsions                |               |       |       |       |                               |      |      |       |       | Minimum mass of coating |       |         |         |
|------------------------------|------------------------------------------|-------------------------------|------|-------------------------------------------|-------|-------|-------|-------|-------------------------------|------|-------|-------|-------|-------------------------------------------|---------------|-------|-------|-------|-------------------------------|------|------|-------|-------|-------------------------|-------|---------|---------|
|                              | Bright and coated <sup>a</sup> – Class B | Coated <sup>a</sup> – Class A |      | Bright and coated <sup>a</sup> – Class B  |       |       |       |       | Coated <sup>a</sup> – Class A |      |       |       |       | Bright and coated <sup>a</sup> – Class B  |               |       |       |       | Coated <sup>a</sup> – Class A |      |      |       |       | g/m <sup>2</sup>        |       |         |         |
|                              |                                          |                               |      | Tensile strength grade – MPa <sup>b</sup> |       |       |       |       |                               |      |       |       |       | Tensile strength grade – MPa <sup>b</sup> |               |       |       |       |                               |      |      |       |       |                         |       |         |         |
| mm                           | mm                                       |                               | mm   | 1 180 & 1 370                             | 1 570 | 1 770 | 1 960 | 2 160 | 2260                          | 2360 | 1 370 | 1 570 | 1 770 | 1 960                                     | 1 180 & 1 370 | 1 570 | 1 770 | 1 960 | 2 160                         | 2260 | 2360 | 1 370 | 1 570 | 1 770                   | 1 960 | Class B | Class A |
| $0,20 \leq d < 0,25$         | ± 0,008                                  | —                             |      |                                           |       |       |       |       |                               |      |       |       |       |                                           |               |       |       |       |                               |      |      |       |       |                         |       | 20      |         |
| $0,25 \leq d < 0,30$         | ± 0,008                                  | —                             |      |                                           |       |       |       |       |                               |      |       |       |       |                                           |               |       |       |       |                               |      |      |       |       |                         |       | 30      |         |
| $0,30 \leq d < 0,40$         | ± 0,01                                   | ± 0,025                       |      |                                           |       |       |       |       |                               |      |       |       |       |                                           |               |       |       |       |                               |      |      |       |       |                         |       | 30      |         |
| $0,40 \leq d < 0,50$         | ± 0,01                                   | ± 0,025                       |      |                                           |       |       |       |       |                               |      |       |       |       |                                           |               |       |       |       |                               |      |      |       |       |                         |       | 40      | 85      |
| $0,50 \leq d < 0,55$         | ± 0,015                                  | ± 0,03                        | 1,75 | 16                                        | 15    | 14    | 13    | 12    | 11                            | 10   |       |       |       |                                           | 34            | 30    | 28    | 25    | 23                            | 21   | 19   |       |       |                         |       | 50      | 100     |
| $0,55 \leq d < 0,60$         | ± 0,015                                  | ± 0,03                        | 1,75 | 14                                        | 14    | 13    | 12    | 11    | 10                            | 9    |       |       |       |                                           | 34            | 30    | 28    | 25    | 23                            | 21   | 19   |       |       |                         |       | 50      | 100     |
| $0,60 \leq d < 0,65$         | ± 0,015                                  | ± 0,03                        | 1,75 | 13                                        | 12    | 11    | 10    | 9     | 8                             | 7    |       |       |       |                                           | 34            | 30    | 28    | 25    | 23                            | 21   | 19   |       |       |                         |       | 60      | 115     |
| $0,65 \leq d < 0,70$         | ± 0,015                                  | ± 0,03                        | 1,75 | 12                                        | 11    | 10    | 9     | 8     | 7                             | 6    |       |       |       |                                           | 34            | 30    | 28    | 25    | 23                            | 21   | 19   |       |       |                         |       | 60      | 115     |
| $0,70 \leq d < 0,75$         | ± 0,015                                  | ± 0,03                        | 2,5  | 19                                        | 17    | 16    | 15    | 14    | 13                            | 12   |       | 13    | 12    | 11                                        | 34            | 30    | 28    | 25    | 23                            | 21   | 19   |       | 21    | 19                      | 17    | 60      | 130     |
| $0,75 \leq d < 0,80$         | ± 0,015                                  | ± 0,03                        | 2,5  | 18                                        | 16    | 15    | 14    | 13    | 12                            | 11   |       | 12    | 11    | 10                                        | 34            | 30    | 28    | 25    | 22                            | 21   | 19   |       | 21    | 19                      | 17    | 60      | 130     |

## EN 10264-2:2021 (E)

| Nominal diameter $d$ of wire | Diameter tolerances                      |                               | $R$  | Minimum number of reverse bends           |       |       |       |       |                               |       |       |       |       | Minimum number of torsions                |               |       |       |       |                               |       |       |       |       | Minimum mass of coating |       |         |         |
|------------------------------|------------------------------------------|-------------------------------|------|-------------------------------------------|-------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|-------------------------------------------|---------------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|-------------------------|-------|---------|---------|
|                              | Bright and coated <sup>a</sup> – Class B | Coated <sup>a</sup> – Class A |      | Bright and coated <sup>a</sup> – Class B  |       |       |       |       | Coated <sup>a</sup> – Class A |       |       |       |       | Bright and coated <sup>a</sup> – Class B  |               |       |       |       | Coated <sup>a</sup> – Class A |       |       |       |       |                         |       |         |         |
|                              |                                          |                               |      |                                           |       |       |       |       |                               |       |       |       |       |                                           |               |       |       |       |                               |       |       |       |       |                         |       |         |         |
|                              |                                          |                               |      |                                           |       |       |       |       |                               |       |       |       |       |                                           |               |       |       |       |                               |       |       |       |       |                         |       |         |         |
| mm                           | mm                                       |                               | mm   | Tensile strength grade – MPa <sup>b</sup> |       |       |       |       |                               |       |       |       |       | Tensile strength grade – MPa <sup>b</sup> |               |       |       |       |                               |       |       |       |       | g/m <sup>2</sup>        |       |         |         |
|                              |                                          |                               |      | 1 180 & 1 370                             | 1 570 | 1 770 | 1 960 | 2 160 | 2 260                         | 2 360 | 1 370 | 1 570 | 1 770 | 1 960                                     | 1 180 & 1 370 | 1 570 | 1 770 | 1 960 | 2 160                         | 2 260 | 2 360 | 1 370 | 1 570 | 1 770                   | 1 960 | Class B | Class A |
| $0,80 \leq d < 0,85$         | $\pm 0,015$                              | $\pm 0,03$                    | 2,5  | 16                                        | 14    | 13    | 12    | 11    | 10                            | 9     |       | 11    | 10    | 9                                         | 34            | 30    | 28    | 25    | 22                            | 21    | 19    |       | 21    | 19                      | 17    | 70      | 145     |
| $0,85 \leq d < 0,90$         | $\pm 0,015$                              | $\pm 0,03$                    | 2,5  | 15                                        | 13    | 12    | 11    | 10    | 9                             | 8     |       | 10    | 9     | 8                                         | 34            | 30    | 28    | 25    | 22                            | 21    | 19    |       | 21    | 19                      | 17    | 70      | 145     |
| $0,90 \leq d < 0,95$         | $\pm 0,015$                              | $\pm 0,03$                    | 2,5  | 14                                        | 12    | 11    | 10    | 9     | 8                             | 7     |       | 9     | 8     | 7                                         | 34            | 30    | 28    | 25    | 22                            | 21    | 19    |       | 21    | 19                      | 17    | 70      | 155     |
| $0,95 \leq d < 1,00$         | $\pm 0,015$                              | $\pm 0,03$                    | 2,5  | 13                                        | 11    | 10    | 9     | 8     | 7                             | 6     |       | 8     | 7     | 6                                         | 34            | 30    | 28    | 25    | 22                            | 21    | 19    |       | 21    | 19                      | 17    | 70      | 155     |
| $1,00 \leq d < 1,10$         | $\pm 0,02$                               | $\pm 0,04$                    | 3,75 | 20                                        | 18    | 17    | 16    | 14    | 13                            | 12    |       | 15    | 14    | 12                                        | 33            | 29    | 26    | 23    | 21                            | 19    | 17    |       | 20    | 18                      | 13    | 80      | 165     |
| $1,10 \leq d < 1,20$         | $\pm 0,02$                               | $\pm 0,04$                    | 3,75 | 19                                        | 17    | 16    | 15    | 13    | 12                            | 11    |       | 14    | 13    | 11                                        | 33            | 29    | 26    | 23    | 21                            | 19    | 17    |       | 20    | 18                      | 13    | 80      | 165     |
| $1,20 \leq d < 1,30$         | $\pm 0,02$                               | $\pm 0,04$                    | 3,75 | 18                                        | 16    | 15    | 14    | 12    | 11                            | 10    |       | 12    | 11    | 9                                         | 33            | 28    | 25    | 22    | 20                            | 18    | 16    |       | 18    | 15                      | 10    | 90      | 180     |
| $1,30 \leq d < 1,40$         | $\pm 0,02$                               | $\pm 0,04$                    | 3,75 | 16                                        | 14    | 13    | 12    | 10    | 9                             | 8     |       | 10    | 8     | 7                                         | 33            | 28    | 25    | 22    | 19                            | 16    | 14    |       | 18    | 15                      | 10    | 90      | 180     |
| $1,40 \leq d < 1,50$         | $\pm 0,02$                               | $\pm 0,04$                    | 3,75 | 14                                        | 12    | 11    | 10    | 9     | 8                             | 7     |       | 8     | 7     | 6                                         | 33            | 28    | 25    | 22    | 19                            | 16    | 14    |       | 18    | 15                      | 10    | 100     | 195     |
| $1,50 \leq d < 1,60$         | $\pm 0,02$                               | $\pm 0,04$                    | 5    | 16                                        | 15    | 14    | 13    | 12    | 11                            | 10    |       | 11    | 10    | 9                                         | 33            | 28    | 25    | 22    | 19                            | 16    | 14    |       | 18    | 15                      | 10    | 100     | 195     |