



SLOVENSKI STANDARD
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**Jekleni drogovi, palice in žica za hladno nakrčevanje in hladno iztiskanje - 1. del:
Splošni tehnični dobavni pogoji**

Steel rod, bars and wire for cold heading and cold extrusion - Part 1: General technical delivery conditions

Walzdraht, Stäbe und Draht aus Kaltstauch- und Kaltfließpreßstählen - Teil 1: Allgemeine technische Lieferbedingungen

Barres, fil machine et fils en acier pour transformation à froid et extrusion à froid - Partie 1: Conditions techniques générales de livraison

Ta slovenski standard je istoveten z: prEN 10263-1

ICS:

77.140.60	Jeklene palice in drogovi	Steel bars and rods
77.140.65	Jeklene žice, jeklene vrvi in verige	Steel wire, wire ropes and link chains

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (prEN 10263-1:2014) has been prepared by Technical Committee ECISS/TC 106 “Wire rod and wires”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 10263-1:2001.

This European Standard EN 10263 is subdivided as follows:

- *Part 1: General technical delivery conditions*
- *Part 2: Technical delivery conditions for steels not intended for heat treatment after cold working*
- *Part 3: Technical delivery conditions for case hardening steels*
- *Part 4: Technical delivery conditions for steels for quenching and tempering*
- *Part 5: Technical delivery conditions for stainless steels*

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1 Scope

1.1 This Part of EN 10263 specifies the general technical delivery conditions for round rod, round bars and wire for cold heading and cold extrusion made of:

- a) non alloy steels not intended for heat treatment after cold working, as specified in prEN 10263-2:2013;
- b) non alloy and alloy steels for case hardening, as specified in prEN 10263-3:2013;
- c) non alloy and alloy steels for quenching and tempering, as specified in prEN 10263-4:2013;
- d) stainless steels, as specified in prEN 10263-5:2013.

1.2 Parts 2,3 and 4 of this EN 10263 cover products having a diameter up to and including 100 mm.

Part 5 covers products having a diameter up to and including:

- 25 mm for ferritic and austenitic-ferritic steels;
- 50 mm for austenitic steels;
- 100 mm for martensitic steels.

1.3 In special cases supplementary requirements or deviations with respect to this European Standard may be agreed between the purchaser and the supplier at the time of enquiry and order (See Annex A).

1.4 The general technical delivery conditions in EN 10021 also apply to products supplied in accordance with this European Standard

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

EN 10020:2000, *Definitions and classification of grades of steel*

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

EN 10027-1, *Designation system for steels — Part 1: Steel names*

EN 10027-2, *Designation system for steels — Part 2: Numerical system*

EN 10052, *Vocabulary of heat treatment terms for ferrous products*

EN 10060, *Hot rolled round steel bars — Dimensions and tolerances on shape and dimensions for general purposes*

EN 10079, *Definition of steel products*

EN 10204, *Metallic products — Types of inspection documents*

EN 10221:1995, *Surface quality classes for hot-rolled bars and rods — Technical delivery conditions*

EN 10247, *Micrographic examination of the non-metallic inclusion content of steels using standards pictures*

EN 10277-1:2008, *Bright steel products - Technical delivery conditions - Part 1: General*

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EN 10278, *Dimensions and tolerances of bright steel products*

EN 10308, *Non-destructive testing - Ultrasonic testing of steel bars*

EN ISO 377, *Steel and steel products — Location and preparation of samples and test pieces for mechanical testing (ISO 377)*

EN ISO 642, *Steel — Hardenability test by end quenching (Jominy test) (ISO 642)*

EN ISO 643, *Steels - Micrographic determination of the apparent grain size (ISO 643)*

EN ISO 3651-2, *Determination of resistance to intergranular corrosion of stainless steel — Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels - Corrosion test in media containing sulphuric acid (ISO 3651-2)*

EN ISO 3887, *Steels - Determination of depth of decarburization (ISO 3887)*

EN ISO 6508-1, *Metallic material — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T) (ISO 6508-1)*

EN ISO 6892-1, *Metallic materials — Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1)*

EN ISO 14284, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition (ISO 14284)*

ISO 4967:1979, *Steel — Determination of non-metallic inclusions — Microscopic method using standard diagrams*

CEN/TR 10261, *Iron and steel — Review of available methods of chemical analysis*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10020, EN 10021, EN 10052, EN 10079, EN ISO 377 and EN ISO 14284 apply.

4 Classification and Designation**4.1 Classification**

The classification of the steel grades covered by this European Standard according to EN 10020 is indicated in Clause 4.1 of Parts 2, 3, 4 and 5 of this standard for the corresponding steel grades.

4.2 Designation**4.2.1 Steel names**

For the steel grades covered by this European Standard, the steel names as given in the relevant tables of Parts 2, 3, 4 and 5 of this standard are allocated in accordance with EN 10027-1.

4.2.2 Steel numbers

For the steel grades covered by this European Standard, the steel numbers as given in the relevant tables of Parts 2, 3, 4 and 5 of this standard are allocated in accordance with EN 10027-2.

5 Information to be supplied by the purchaser

5.1 Mandatory information

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 European Standard:

- a) quantity to be delivered;
- b) product denomination (rod or bar or wire);
- c) the nominal diameter and the dimensional tolerances on dimensions and shape of the products with a reference to the relevant European Standard (see 8);
- d) length for bars and dimensions and mass for the coils;
- e) reference to this European Standard including the number of the relevant Part(s);
- f) the designation of the steel grade (see 4.2);
- g) the symbol of the required treatment condition (see 7.4 and Table 1);
- h) the symbol of the required surface condition (see 7.10 and Table 2);
- i) if applicable, indication of the symbol for hardenability requirements (see 7.7);
- j) type of inspection document in accordance with EN 10204 (see 9.1)
- k) requirements concerning packaging (see 12).

5.2 Optional information

Supplementary requirements among the following may be specified by the purchaser at the time of enquiry and order. If a supplementary requirement is not specified, all decisions regarding it shall be left to the manufacturer's discretion (see 5.1 and Table1):

- 1) special surface treatment (see 7.4.3);
- 2) any requirement for the product analysis (see 7.5.2 and A.2);
- 3) any requirement for the hardenability (+H, +HH, +HL) or any requirement for core hardening (see Tables 7 and 8 of prEN 10263-3:2013 and Tables 8 to 11 of prEN 10263-4:2013 (see 7.7);
- 4) any requirement for the verification of hardenability (see 10.2);
- 5) any requirement for the verification of the fine grain structure (see 7.8.1 and A.3);
- 6) carbide spheroidization (see 7.8.2) and any requirement for the verification of the carbide spheroidization (see A.4);
- 7) any requirement for the verification of the non-metallic inclusions in steels specified in EN 10263-3 and EN 10263-4 (see A.5);
- 8) internal soundness and any requirements for non-destructive testing (see 7.9.2 and A.6);
- 9) surface quality (see 7.10.1 to 7.10.3) and any requirements for upsetting tests (see 9.3.5 and 10.3);
- 10) removal of surface defects and imperfections (see 7.10.4);

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- 11) depth of decarburisation (see 7.11) and any requirements for testing the depth of decarburisation (see 10.4 and A.7);
- 12) corrosion resistance of stainless steel products (see 7.12) and any requirements for resistance to intergranular corrosion (see A.8);
- 13) statistical evaluation (see 7.1);
- 14) calculation of hardenability (see 10.2);
- 15) requirements on surface protection (see 13).

5.3 Example of an order

100 t round bars in accordance with Part 4 of this European Standard, with a diameter of 50 mm and length of 6 000 mm in accordance with EN 10060, made of steel grade 32CrB4 (1.7076) spheroidized and cold drawn, with a 3.1. inspection certificate in accordance with EN 10204.

100 t – round bars – EN 10060 50 mm x 6000 mm

Steel grade EN 10263-4 - 32CrB4+AC+C

Inspection document EN 10204 3.1

6 Production Process

Unless otherwise agreed at the time of enquiry and order, the production process is left to the discretion of the manufacturer.

7 Requirements**7.1 General**

Suppliers are responsible, using the means they think fit, for inspecting their product in accordance with various quality criteria specified. In view of the practical difficulties in inspecting a coil of wire rod along its entire length, it cannot be proved that no value greater than the specified limits is to be found in the coil as a whole. Statistical evaluation of performances applicable to all coils may be agreed between the purchaser and the manufacturer at the time of ordering.

7.2 Quality management system

If agreed between the supplier and purchaser at the time of enquiry and order, the wire rod supplied shall be produced under a mutually acceptable quality system.

7.3 Form of delivery

The delivery shall consist of one cast or a fraction thereof. Each product shall be traceable to the cast analysis, see clause 11.

7.4 Delivery condition**7.4.1 Basic delivery condition**

Rod, bars and wire shall be supplied in one of the delivery conditions, that has been agreed at the time of ordering, as indicated in Table 1 of prEN 10263-2:2013 and Tables 1 and 2 of prEN 10263-3:2013 to prEN 10263-5:2013.

7.4.2 Summary of combinations of delivery conditions, product forms and corresponding requirements

A summary of customary delivery conditions and product forms and of the corresponding requirements concerning chemical composition, mechanical properties and, where applicable, hardenability is given in Table 1 of prEN 10263-2:2013 and Tables 1 and 2 of prEN 10263-3:2013 to prEN 10263-5:2013.

7.4.3 Surface treatment

Any surface treatment that can facilitate subsequent cold heading and cold extrusion or partially delay any formation of rust shall be subject of an agreement at the time of ordering.

The above treatment can include, e.g., descaling, treatment with lime and-or phosphate.

7.5 Chemical composition

7.5.1 Cast analysis

7.5.1.1 The chemical composition of steel on cast analysis shall be in conformity with the values specified in Table 2 of prEN 10263-2:2013, in Table 3 of prEN 10263-3:2013, in Tables 3 and 4 of prEN 10263-4:2013 and in Table 3 of prEN 10263-5:2013, as appropriate to the steel grade concerned.

7.5.1.2 In cases where steels for case hardening or for quenching and tempering are ordered in accordance with Tables 8 and 9 of prEN 10263-3:2013 and in Tables 9 to 12 of prEN 10263-4:2013, which involves conformity with hardenability requirements according to the Jominy or core hardening tests, such hardenability requirements shall be considered as the governing criterion for acceptance.

In such cases a deviation of the cast analysis with respect to the values indicated in Table 3 of prEN 10263-3:2013 and in Tables 3 and 4 of prEN 10263-4:2013 is admissible, taking into account the prescriptions given in footnote b) of those tables. In any case however, the deviations in the product analysis in relation to the specified limits of cast analysis shall not exceed the values indicated in Table 4 of prEN 10263-3:2013 and in Table 5 of prEN 10263-4:2013.

7.5.2 Product analysis

The purchaser can specify at the time of enquiry and order that the chemical composition on product analysis be verified. In this case reference should be made to A.2.

The permissible deviations in the product analysis in relation to the specified limits of cast analysis (see 7.5.1) are indicated in Table 3 of prEN 10263-2:2013, in Table 4 of prEN 10263-3:2013, in Table 5 of prEN 10263-4:2013 and in Table 4 of prEN 10263-5:2013.

7.6 Mechanical properties

The mechanical properties of products covered by this European Standard shall meet the prescriptions stated in Clause 6.3 of prEN 10263-2:2013 to prEN 10263-5:2013.

7.7 Hardenability requirements

7.7.1 General

Products cannot be ordered and supplied according to both end quench test hardenability requirements and core hardening requirements