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BSI Standards Publication

## Non-alloy steel wire rod for conversion to wire

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Part 4: Specific requirements for wire rod for special applications (ISO 16120-4:2017)

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## National foreword

This British Standard is the UK implementation of EN ISO 16120-4:2017. It is identical to ISO 16120-4:2017. It supersedes BS EN ISO 16120-4:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/106, Wire Rod and Wire.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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### Amendments/corrigenda issued since publication

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English Version

## Non-alloy steel wire rod for conversion to wire - Part 4: Specific requirements for wire rod for special applications (ISO 16120-4:2017)

Fil-machine en acier non allié destiné à la fabrication de fils - Partie 4: Exigences spécifiques au fil-machine pour applications spéciales (ISO 16120-4:2017)

Walzdraht aus unlegiertem Stahl zum Ziehen - Teil 4: Besondere Anforderungen an Walzdraht für Sonderanwendungen (ISO 16120-4:2017)

This European Standard was approved by CEN on 20 April 2017.

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.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN ISO 16120-4:2017) has been prepared by Technical Committee ISO/TC 17 "Steel" in collaboration with 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 December 2017, and conflicting national standards shall be withdrawn at the latest by December 2017.

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 ISO 16120-4:2011.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### Endorsement notice

The text of ISO 16120-4:2017 has been approved by CEN as EN ISO 16120-4:2017 without any modification.

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 17, *Steel wire rod and wire products*.

This third edition cancels and replaces the second edition (ISO 16120-4:2011), which has been technically revised.

The main changes compared to the previous edition are:

- Terms and definitions clause added;
- revisions to the permissible variation for ultimate tensile strength of the wire rod ([Table 6](#) and [Table 7](#));
- cementite network requirement added ([5.11.2](#)).

This document is intended to be used in conjunction with ISO 16120-1.

A list of all parts in the ISO 16120 series can be found on the ISO website.

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# Non-alloy steel wire rod for conversion to wire —

## Part 4:

# Specific requirements for wire rod for special applications

## 1 Scope

This document specifies requirements for wire rod for conversion to wire for special applications. It is applicable to non-alloy steel wire rod with improved characteristics intended for drawing and/or cold rolling.

## 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.

ISO 4948-2, *Steels — Classification — Part 2: Classification of unalloyed and alloy steels according to main quality classes and main property or application characteristics*

ISO 4967, *Steel — Determination of content of non-metallic inclusions — Micrographic method using standard diagrams*

ISO 16120-1:2017, *Non-alloy steel wire rod for conversion to wire — Part 1: General requirements*

ISO 16120-2:2017, *Non-alloy steel wire rod for conversion to wire — Part 2: Specific requirements for general purpose wire rod*

## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

## 4 Designation

In the designation C##D2, “C” means non-alloy steel (see ISO/TS 4949); ## is the indicative average content of carbon; “D” signifies that it is for wire-drawing; “2” means wire rod for special applications.

If steels are ordered according to the chemical composition, ## indicates the values to be inserted by the purchaser according to the steel names as designated in [Table 1](#), first column.

The designations of comparable steel grades in national or regional standards are provided in [Annex A](#).

Steels can also be ordered according to tensile strength. The mid-point of the required ultimate tensile strength (UTS) range shall be indicated as a suffix to the grade designation, e.g. C##D2 – 1020, where the required mid-point of the UTS is 1 020 MPa. “##” means “to be left blank” since the carbon content is at the discretion of the supplying mill, and the supplying mill indicates the exact number of