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

**Part 4:
Specific requirements for wire rod for
special applications**

Fil-machine en acier non allié destiné à la fabrication de fils —

*Partie 4: Exigences spécifiques au fil-machine pour applications
spéciales*

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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).

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).

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.

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.

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