
Steel wire rod for bridge cable wire

Fil machine en acier pour câbles de ponts

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Published in Switzerland

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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 document 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).

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Steel wire rod for bridge cable wire

1 Scope

This document specifies requirements for wire rod for bridge cable wire, which is widely used in parallel wire cables or semi-parallel wire cables for suspension bridges, stay bridges or other structures involving the use of parallel wires.

ISO 16120-4 provides additional wire rod materials and their technical and qualitative requirements for their possible application as bridge cable wire.

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

ISO 404:2013, *Steel and steel products — General technical delivery requirements*

ISO 3887, *Steels — Determination of the depth of decarburization*

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

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

ISO 10474, *Steel and steel products — Inspection documents*

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

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

ISO 16120-4:2017, *Non-alloy steel wire rod for conversion to wire — Part 4: Specific requirements for wire rod for special applications*

ISO 16124:2015, *Steel wire rod — Dimensions and tolerances*

ISO 16574, *Determination of percentage of resolvable pearlite in high carbon steel wire rod*

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1
out-of-roundness

difference between the maximum and minimum diameter measured at the same cross-section of wire rod

3.2
batch

wire rods with the same dimension and grade produced from the same heat and the same process in one continuous production operation

4 Designation

In the designation ##DB-#, ##is the indicative average content of carbon; “D” signifies that it is for wire-drawing; “B” means wire rod for bridge cable wire; “#” signifies serial number of steel grades with the same carbon content.

Example Grade 82DB-3

- 82 denotes the mid-point of the 0,80/0,85 % carbon range;
- D denotes that the grade is for wire drawing;
- B denotes that the end product is bridge wire;
- 3 denotes serial number of steel grades with the same carbon content.

5 Ordering information

The following information shall be supplied by the purchaser at the time of enquiry and order:

- a) quantity to be delivered;
- b) nominal dimensions;
- c) a reference to this document, i.e. ISO 6819:2023;
- d) steel grade, including any permitted additions/variations;
- e) delivery condition;
- f) special requirements, if any.

6 Production process

Steelmaking shall be conducted by basic oxygen furnace or electric-arc furnace and ladle refining. Unless otherwise agreed at the time of order, the steelmaking method is left to the discretion of the supplier.

7 Requirements

7.1 General

The general requirements shall be in as specified in ISO 16120-1.