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BSI Standards Publication

Surface quality classes for hot-rolled bars and wire rod

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National foreword

This British Standard is the UK implementation of EN ISO 9443:2018. It is identical to ISO 9443:2018. It supersedes BS EN 10221:1996, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/105, Steels for Heat Treatment, Alloy Steels, Free-Cutting Steels and Stainless Steels.

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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English Version

Surface quality classes for hot-rolled bars and wire rod (ISO 9443:2018)

Classes de qualité de surface des barres et fils-
machine laminés à chaud (ISO 9443:2018)

Oberflächengüteklassen für warmgewalzten
Stabstahl und Walzdraht (ISO 9443:2018)

This European Standard was approved by CEN on 23 May 2018.

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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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN ISO 9443:2018) has been prepared by Technical Committee ISO/TC 17 "Steel" in collaboration with Technical Committee ECISS/TC 105 "Steels for heat treatment, alloy steels, free-cutting steels and stainless steels" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by January 2019, and conflicting national standards shall be withdrawn at the latest by January 2019.

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 10221:1995.

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 9443:2018 has been approved by CEN as EN ISO 9443:2018 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).

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 4, *Heat treatable and alloy steels*.

This second edition cancels and replaces the first edition (ISO 9443:1991), which has been technically revised.

The following changes have been made in comparison with the first edition:

- the surface quality classes 5 to 12 (12A) have been removed;
- the surface classes 1 to 4 have been kept and renamed A, B, D and E and an additional surface quality class has been introduced as surface quality class C;
- the difference between shallow and sharp discontinuities has been removed due to the impracticality to differentiate between the two;
- the admissible portion of defective material z_a and z_b has been removed and only z has been kept.

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Surface quality classes for hot-rolled bars and wire rod

1 Scope

This document specifies technical delivery requirements for the surface quality of round bars, squares, hexagons and wire rod in the hot rolled condition with nominal dimensions d_N from 5 mm to 200 mm. This document is applicable to bright products and tool steels, if agreed at the time of enquiry and order between manufacturer and purchaser.

By agreement between manufacturer and purchaser, this document can also be applied to other special profiles.

This document is particularly applicable to steels for engineering and structural applications.

This document does not include any requirements for the permissible depth of surface decarburization.

NOTE The determination of depth of surface decarburization is presented in ISO 3887.

The material standards for steel bars and wire rod can exclude the application of one or other of the surface quality classes of this document. They can also cover requirements for surface quality which deviate from this document. In these cases the requirements of the material standard prevail.

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 6929, *Steel products — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6929 and the following apply.

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

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

3.1

delivery lot

quantity of steel of the same type and the same dimension ordered with the same requirements for the surface quality and delivered at the same time, unless otherwise specified in the order or appropriate product standard

3.2

discontinuity

geometric irregularity projecting inwards

3.3

imperfection

discontinuity (3.2) with a depth smaller than or equal to the specified limiting value which may be left without repair