ICS 77.140.10, 77.140.20, 77.140.45

SLOVENSKÁ TECHNICKÁ NORMA

December 2018

STN	**Tepelne spracovateľné ocele, legované ocele a automatové ocele Časť 2: Legované ocele na zušľachťovanie (kalenie a popúšťanie) (ISO 683-2: 2016)**	**STN EN ISO 683-2** 42 0931

Heat-treatable steels, alloy steels and free-cutting steels - Part 2: Alloy steels for quenching and tempering (ISO 683-2:2016)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/18

Obsahuje: EN ISO 683-2:2018, ISO 683-2:2016

Oznámením tejto normy sa ruší
STN EN 10083-3 (42 0931) z marca 2007
Spolu s STN EN ISO 683-1 ruší
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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 683-2

June 2018

ICS 77.140.10; 77.140.20; 77.140.45 Supersedes EN 10083-1:2006, EN 10083-3:2006

English Version

Heat-treatable steels, alloy steels and free-cutting steels - Part 2: Alloy steels for quenching and tempering (ISO 683-2:2016)

Aciers pour traitement thermique, aciers alliés et aciers pour décolletage - Partie 2: Aciers alliés pour trempe et revenu (ISO 683-2:2016)

Für eine Wärmebehandlung bestimmte Stähle, legierte Stähle und Automatenstähle - Teil 2: Legierte Vergütungsstähle (ISO 683-2:2016)

This European Standard was approved by CEN on 18 May 2018.

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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN ISO 683-2:2018 E

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European foreword

The text of ISO 683-2:2016 has been prepared by Technical Committee ISO/TC 17 "Steel" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 683-2:2018 by 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 December 2018, and conflicting national standards shall be withdrawn at the latest by December 2018.

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 10083-1:2006, EN 10083-3:2006.

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 683-2:2016 has been approved by CEN as EN ISO 683-2:2018 without any modification.

The European steel numbers to the steel grades are to be found in informative Annex C.

The references to following European standards are given for information:

EN 10017, *Steel rod for drawing and/or cold rolling - Dimensions and tolerances*

EN 10021, *General technical delivery conditions for steel products*

EN 10029, *Hot-rolled steel plates 3 mm thick or above - Tolerances on dimensions and shape*

EN 10048, *Hot rolled narrow steel strip - Tolerances on dimensions and shape*

EN 10051, *Continuously hot-rolled strip and plate/sheet cut from wide strip of non-alloy and alloy steels - Tolerances on dimensions and shape*

EN 10058, *Hot rolled flat steel bars for general purposes - Dimensions and tolerances on shape and dimensions*

EN 10059, *Hot rolled square steel bars for general purposes - Dimensions and tolerances on shape and dimensions*

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

EN 10061, *Hot rolled hexagon steel bars for general purposes - Dimensions and tolerances on shape and dimensions*

EN 10108, *Round steel rod for cold heading and cold extrusion - Dimensions and tolerances*

EN 10160, *Ultrasonic testing of steel flat product of thickness equal or greater than 6 mm (reflection method)*

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

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

INTERNATIONAL STANDARD

ISO 683-2

Second edition
2016-07-01

Heat-treatable steels, alloy steels and free-cutting steels —

Part 2: Alloy steels for quenching and tempering

Aciers pour traitement thermique, aciers alliés et aciers pour décolletage —

Partie 2: Aciers alliés pour trempe et revenu

Reference number
ISO 683-2:2016(E)

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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 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.

The committee responsible for this document is ISO/TC 17, *Steel*, Subcommittee SC 4, *Heat treatable and alloy steels*.

This second edition cancels and replaces the first edition (ISO 683-2:2012), of which it constitutes a minor revision.

ISO 683 consists of the following parts, under the general title *Heat-treatable steels, alloy steels and free-cutting steels*:

— *Part 1: Non-alloy steels for quenching and tempering*

— *Part 2: Alloy steels for quenching and tempering*

— *Part 3: Case-hardening steels*

— *Part 4: Free-cutting steels*

— *Part 5: Nitriding steels*

— *Part 14: Hot-rolled steels for quenched and tempered springs*

— *Part 15: Valve steels for internal combustion engines*

— *Part 17: Ball and roller bearing steels*

— *Part 18: Bright steel products*

INTERNATIONAL STANDARD **ISO 683-2:2016(E)**

Heat-treatable steels, alloy steels and free-cutting steels —

Part 2: Alloy steels for quenching and tempering

1 Scope

This part of ISO 683 specifies the technical delivery requirements for

— semi-finished products, hot formed, e.g. blooms, billets, slabs (see Note 1),

— bars (see Note 1),

— wire rod,

— finished flat products, and

— hammer or drop forgings (see Note 1)

manufactured from the direct hardening alloy steels and the alloy flame- and induction-hardening steels listed in Table 3 and supplied in one of the heat-treatment conditions given for the different types of products in Table 1 and in one of the surface conditions given in Table 2.

The steels are, in general, intended for the manufacture of quenched and tempered or austempered (see 3.2 and Note 2) and flame- or induction-hardened machine parts (see Tables 8 and 9).

The requirements for mechanical properties given in this part of ISO 683 are restricted to the sizes given in the relevant Table 8.

NOTE 1 Hammer-forged semi-finished products (blooms, billets, slabs, etc.), seamless rolled rings and hammer-forged bars are in the following covered under semi-finished products or bars and not under the term "hammer and drop forgings".

NOTE 2 For the purposes of simplification, the term "quenched and tempered" is, unless otherwise indicated, used in the following also for the austempered condition.

NOTE 3 For International Standards relating to steels complying with the requirements for the chemical composition in Table 3, however, supplied in other product forms or treatment conditions than given above or intended for special applications, and for other related International Standards, see the Bibliography.

NOTE 4 This part of ISO 683 does not apply to bright products and bars and wire rod for cold heading. For such products, see ISO 683-18 and ISO 4954.

In special cases, variations in these technical delivery requirements or additions to them can form the subject of an agreement at the time of enquiry and order (see 5.2 and Annex B).

In addition to this part of ISO 683, the general technical delivery requirements of ISO 404 are applicable.

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.

ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1: Test method*

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

ISO 643, *Steels — Micrographic determination of the apparent grain size*

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

ISO 4885:—[1)], *Ferrous products — Heat treatments — Vocabulary*

ISO 4948-1, *Steels — Classification — Part 1: Classification of steels into unalloyed and alloy steels based on chemical composition*

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/TS 4949, *Steel names based on letter symbols*

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

ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

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

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

ISO 6929, *Steel products — Vocabulary*

ISO 7788, *Steel — Surface finish of hot-rolled plates and wide flats — Delivery requirements*

ISO 9443, *Heat-treatable and alloy steels — Surface quality classes for hot-rolled round bars and wire rods — Technical delivery conditions*

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

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

1) Under preparation. Stage at the time of publication: ISO/DIS 4885:2016.

