



# SLOVENSKI STANDARD SIST EN ISO 683-7:2024

01-december-2024

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**Toplotno obdelana, legirana in avtomatna jekla -7. del: Svetli izdelki iz nelegiranih in legiranih jekel (ISO 683-7:2023)**

Heat-treatable steels, alloy steels and free-cutting steels - Part 7: Bright products of non-alloy and alloy steels (ISO 683-7:2023)

Für eine Wärmebehandlung bestimmte Stähle, legierte Stähle und Automatenstähle - Teil 7: Blankstahlerzeugnisse aus unlegierten und legierten Stählen (ISO 683-7:2023)

Aciers pour traitement thermique, aciers alliés et aciers pour décolletage - Partie 7: Produits en aciers non alliés et alliés transformés à froid (ISO 683-7:2023)

**Ta slovenski standard je istoveten z: EN ISO 683-7:2024**

[SIST EN ISO 683-7:2024](https://standards.sist.si/standards/sist/683-7:2024/683-7:2024-0683-557556755600/sist-en-iso-683-7-2024)

**ICS:**

77.140.10	Jekla za toplotno obdelavo	Heat-treatable steels
77.140.20	Visokokakovostna jekla	Stainless steels

**SIST EN ISO 683-7:2024**

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EUROPEAN STANDARD

EN ISO 683-7

NORME EUROPÉENNE

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October 2024

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Supersedes EN 10277:2018

English Version

## Heat-treatable steels, alloy steels and free-cutting steels - Part 7: Bright products of non-alloy and alloy steels (ISO 683-7:2023)

Aciers pour traitement thermique, aciers alliés et  
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Stähle und Automatenstähle - Teil 7:  
Blankstahlerzeugnisse aus unlegierten und legierten  
Stählen (ISO 683-7:2023)

This European Standard was approved by CEN on 13 October 2024.

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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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>

**iTeh Standards**  
**(<https://standards.itih.ai>)**  
**Document Preview**

[SIST EN ISO 683-7:2024](https://standards.itih.ai/catalog/standards/sist/503b2efa-2996-40c3-be05-35953e9cee80/sist-en-iso-683-7-2024)

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## European foreword

The text of ISO 683-7:2023 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 683-7:2024 by Technical Committee CEN/TC 459/SC 5 "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 April 2025, and conflicting national standards shall be withdrawn at the latest by April 2025.

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 10277:2018.

The main changes compared to the previous edition EN 10277:2018 are listed below:

- this standard EN ISO 683-7 is the comparable ISO standard with nearly identical content;
- editorially revised.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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

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## Endorsement notice

The text of ISO 683-7:2023 has been approved by CEN as EN ISO 683-7:2024 without any modification.

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

The references to following European standards are given for information:

EN 10025-2, *Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10027-1, *Designation systems for steels - Part 1: Steel name*

EN 10027-2, *Designation systems for steels - Part 2: Numerical system*

EN 10079, *Definition of steel products*

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

EN 10247, *Micrographic examination of the non-metallic inclusion content of steels using standard pictures*



# INTERNATIONAL STANDARD

**ISO**  
**683-7**

First edition  
2023-11

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

### Part 7: Bright products of non-alloy and alloy steels

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

*Partie 7: Produits en aciers non alliés et alliés transformés à froid*

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# Contents

	Page
<b>Foreword</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Classification and designation</b> .....	<b>3</b>
4.1 Classification.....	3
4.2 Designation.....	3
<b>5 Information to be supplied by the purchaser</b> .....	<b>3</b>
5.1 Mandatory information.....	3
5.2 Options/Supplementary or special requirements.....	4
5.3 Ordering example.....	4
<b>6 Manufacturing process</b> .....	<b>5</b>
6.1 General.....	5
6.2 Treatment and surface condition at delivery.....	5
6.2.1 Treatment condition.....	5
6.2.2 Surface conditions.....	5
6.3 Traceability of the cast.....	5
<b>7 Requirements</b> .....	<b>5</b>
7.1 General.....	5
7.2 Chemical composition.....	5
7.3 Mechanical properties.....	6
7.4 Hardenability.....	6
7.5 Machinability.....	6
7.6 Grain size.....	7
7.7 Non-metallic inclusions.....	7
7.7.1 Microscopic inclusions.....	7
7.7.2 Macroscopic inclusions.....	7
7.8 Internal soundness.....	7
7.9 Decarburization.....	7
7.10 Shape, dimensions and tolerances.....	7
7.11 Surface quality.....	8
<b>8 Inspection</b> .....	<b>8</b>
8.1 Testing procedures and types of documents.....	8
8.2 Frequency of testing.....	9
8.3 Specific inspection and testing.....	10
8.3.1 Verification of the hardenability, hardness and mechanical properties.....	10
8.3.2 Visual and dimensional inspection.....	11
<b>9 Test methods</b> .....	<b>11</b>
9.1 Chemical analysis.....	11
9.2 Mechanical tests.....	11
9.2.1 Tensile test.....	11
9.2.2 Impact test.....	11
9.3 Hardness and hardenability tests.....	11
9.3.1 Hardness in treatment conditions +A and +FP.....	11
9.3.2 Verification of hardenability.....	12
9.4 Verification of dimensions.....	12
9.5 Retests.....	12
<b>10 Marking</b> .....	<b>12</b>
<b>Annex A (informative) Steel grades and chemical composition according to ISO 630-2, ISO 683-1, ISO 683-2, ISO 683-3 and ISO 683-4</b> .....	<b>39</b>

**ISO 683-7:2023(E)**

<b>Annex B (normative) Determination of the diameter of the equivalent ruling section for mechanical properties</b> .....	<b>45</b>
<b>Annex C (normative) Supplementary or special requirements</b> .....	<b>48</b>
<b>Annex D (normative) Methods for evaluating straightness</b> .....	<b>50</b>
<b>Annex E (informative) Designation of steels given in this document and of comparable grades covered in various designation systems</b> .....	<b>51</b>
<b>Bibliography</b> .....	<b>55</b>

**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[SIST EN ISO 683-7:2024](https://standards.iteh.ai/catalog/standards/sist/503b2efa-2996-40c3-be05-35953e9cee80/sist-en-iso-683-7-2024)

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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](http://www.iso.org/directives)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

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

For an explanation of 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 [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 4, *Heat treatable and alloy steels*.

This first edition of ISO 683-7, together with ISO 16143-4, cancels and replaces ISO 683-18:2014, which has been technically revised.

The main changes are as follows:

- ISO 683-18 was split into ISO 683-7 for non-alloy and alloy steels and into ISO 16143-4 for stainless steels;
- definition for out-of-round was modified with two new definitions on ovality and out-of-shape;
- editorial revision.

A list of all parts in the ISO 683 series can be found on the ISO website.

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](http://www.iso.org/members.html).



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

## Part 7: Bright products of non-alloy and alloy steels

### 1 Scope

This document specifies the technical delivery requirements for bright steel products in the drawn, peeled/turned or additional ground condition and they are intended for mechanical purposes, for example for machine parts. The bright steel products are subdivided into the following steel types:

- a) non-alloy general engineering steels;
- b) non-alloy free-cutting steels;
- c) non-alloy and alloy case-hardening steels;
- d) non-alloy and alloy steels for quenching and tempering.

Bright products of stainless steels are not part of this document, they are covered by ISO 16143-4.

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

ISO 286-2, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 2: Tables of standard tolerance classes and limit deviations for holes and shafts*

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

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

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

ISO 630-2, *Structural steels — Part 2: Technical delivery conditions for structural steels for general purposes*

ISO 683-1, *Heat-treatable steels, alloy steels and free-cutting steels — Part 1: Non-alloy steels for quenching and tempering*

ISO 683-2, *Heat-treatable steels, alloy steels and free-cutting steels — Part 2: Alloy steels for quenching and tempering*

ISO 683-3, *Heat-treatable steels, alloy steels and free-cutting steels — Part 3: Case-hardening steels*

ISO 683-4, *Heat-treatable steels, alloy steels and free-cutting steels — Part 4: Free-cutting steels*

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

ISO 4885, *Ferrous materials — Heat treatments — Vocabulary*

## ISO 683-7:2023(E)

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

ISO 6929, *Steel products — Vocabulary*

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

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

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 377, ISO 4885, ISO 4948-1, ISO 4948-2, ISO 6929, ISO 14284 and the following 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  
bright product**  
drawn or peeled/turned product with smoother surface quality and better dimensional accuracy in comparison to hot-rolled product

**3.2  
drawn product**  
product of various cross-sectional shapes obtained, after descaling, by cold drawing of hot-rolled product, on a drawing bench (cold formation without removing material)

Note 1 to entry: This operation gives the product special features with respect to shape, dimensional accuracy and surface finish. In addition, the process causes cold working of the product, which can be eliminated by subsequent heat treatment. Products in lengths are delivered straightened, products of small cross-section may also be supplied in coils.

**3.3  
peeled/turned product**  
round bar produced by peeling or turning where the product can be further processed by straightening and polishing

Note 1 to entry: This operation gives the bar special features with respect to shape, dimensional accuracy and surface finish. The removal of metal is carried out in such a way that the bright product is generally free from rolling defects and surface decarburization.

**3.4  
product in the ground condition**  
ground product  
drawn or peeled/turned round bar given an improved surface quality and dimensional accuracy by grinding or by grinding and polishing