Bright steel products - Technical delivery conditions

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 10277:2018 sisaldab Euroopa standardi EN 10277:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 10277:2018 consists of the English text of the European standard EN 10277:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.06.2018.	Date of Availability of the European standard is 20.06.2018.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Bright steel products - Technical delivery conditions

Produits en aciers transformés à froid - Conditions techniques de livraison

Blankstahlerzeugnisse - Technische Lieferbedinungen

This European Standard was approved by CEN on 20 February 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
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 10277:2018) has been prepared 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of an identical text or by endorsement, at the latest by December 2018 and conflicting national standards shall be withdrawn at the latest by December 2018.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 10277-1:2008 to EN 10277-5:2008.

The following changes have been made in comparison to the previous edition EN 10277-1:2008 to EN 10277-5:2008:

a) the five parts of EN 10277-1 to EN 10277-5 were merged into one part;

b) the dimensional requirements for bright steel products were added to this standard;

c) for the steels for general engineering use, the steel grades E295GC, E355GC, C10, C15, C16 and C55 were deleted and the grades C25, C30 and C50 were added;

d) for the free cutting steels, the grades 9S20, 17SMn20, 35SMn20 and 35SMnPb20 were added;

e) for the case hardening steels, the grades 16MnCrB 5, 15NiCrS4, 15NiCr13 and 17NiCrMoS6-4 were deleted, the grades C10E, C15E, C16E, 16MnCr5, 20Cr4, 20CrS4, 20MnCr5, 24CrMo4, 24CrMoS4, 16NiCr4, 16NiCrS4, 20NiCrMo2-2, 17NiCrMo6-4, 17NiCrMoS6-4 and 18CrNiMo7-6 were added;

f) for the steels for quenching and hardening, the grade 39NiCrMo3 was deleted, the grades C25E. C25R. C30E, C30R, 28Mn6, 36Mn6, 42Mn6, 34Cr4, 37Cr4, 37CrS4, 41Cr4, 25CrMo4, 34CrMo4, 34CrMoS4, 42CrMo4, 50CrMo4 36CrNiMo4 and 30CrNiMo8 were added;

g) the standard was editorially revised.

This standard is the result of the work on ISO 683-18. Since the bright stainless steel products are to be found in EN 10088-3 for European standardization, they are excluded here. In addition, this standard was adapted to include the European references and some further amendments were made.

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.

1 Scope

This document specifies the technical delivery requirements for bright steel bars in the drawn, peeled/turned or ground condition and they are intended for mechanical purposes, for example for machine parts. The bright bars 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.

This document lists the mechanical characteristics for products up to 100 mm in thickness. For larger dimensions, the manufacturer and purchaser agree on mechanical properties at the time of enquiry and order.

It does not cover cold rolled products and cut lengths produced from strip or sheet by cutting. Bright steel products of stainless steels are to be found in EN 10088-3.

In addition to this document, the general technical delivery requirements of EN 10021 are applicable.

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.

EN 10020, *Definition and classification of grades of steel*

EN 10021:2006, *General technical delivery conditions for steel products*

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 names*

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*

CEN/TR 10261, *Iron and steel - European standards for the determination of chemical composition*

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

EN ISO 377, *Steel and steel products - Location and preparation of samples and test pieces for mechanical testing (ISO 377)*

EN ISO 643, *Steels - Micrographic determination of the apparent grain size (ISO 643)*

EN ISO 683-1, *Heat-treatable steels, alloy steels and free-cutting steels - Part 1: Non-alloy steels for quenching and tempering·(ISO 683-1)*

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

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

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

EN ISO 3887, *Steels - Determination of the depth of decarburization (ISO 3887)*

EN ISO 4885, *Ferrous materials - Heat treatments - Vocabulary (ISO 4885)*

EN ISO 6506-1, *Metallic materials - Brinell hardness test - Part 1: Test method (ISO 6506-1)*

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

EN ISO 14284, *Steel and iron - Sampling and preparation of samples for the determination of chemical composition (ISO 14284)*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10020, EN 10027-1, EN 10027-2, EN 10079, EN ISO 377, EN ISO 4885, EN ISO 14284 and the following apply.

3.1
bright steel products
drawn or peeled/turned bars with smoother surface quality and better dimensional accuracy in comparison to hot-rolled bars

3.2
drawn products
products of various cross-sectional shapes obtained, after descaling, by cold drawing of hot-rolled bars or rod, 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.

3.3
peeled/turned products
round bars 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