SLOVENSKI STANDARD
oSIST prEN 10277:2017

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Svetli jekleni izdelki - Tehnični dobavni pogoji

Bright steel products - Technical delivery conditions

Blankstahlerzeugnisse - Technische Lieferbedinungen

Produits en acier transformés à froid - Conditions techniques de livraison

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English Version

Bright steel products - Technical delivery conditions

Produits en acier transformés à froid - Conditions techniques de livraison

Blankstahlerzeugnisse - Technische Lieferbedinungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ECISS/TC 105.

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

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European foreword

This document (prEN 10277:2017) 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 document is currently submitted to the CEN Enquiry.

This document will supersede EN 10277-1:2008, EN 10277-2:2008, EN 10277-3:2008, EN 10277-4:2008 and EN 10277-5:2008.

This standard is the result of the work on ISO 683-1. Since the bright stainless steel products are to be found in EN 10088-3 they are excluded here. In addition, there are adaptions to the European references (see Clause 2).

1 Scope

This European Standard specifies the technical delivery requirements for bright steel bars in the drawn or peeled/turned 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.

Bright steel products of stainless steels are to be found in EN 10088-3.

In addition to this standard, the general technical delivery requirements of EN 10021 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.

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 10052, *Vocabulary of heat treatment terms for ferrous products*

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·*

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

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

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

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

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 10052, EN 10079, EN ISO 377, 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 with 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 deformation without removing material)

Note 1 to entry: This operation gives the product special features with respect to shape, dimensional accuracy and surface finish. Products in lengths are delivered straightened, products of small cross-section may also be supplied in coils.

3.3
peeled/turned products
steel bars of circular cross-section having the same features of drawn products concerning shape, dimensional accuracy and bright surface finish but without work hardening

Note 1 to entry: They are produced by peeling on a peeling machine usually followed by straightening and by polishing. The removal of metal by peeling is carried out in such a way that the bright product is generally free from surface defects and decarburization coming from the hot-rolling process.

3.4
ground products
drawn or peeled/turned round bars given an improved surface quality and dimensional accuracy by grinding or by grinding and polishing

3.5
thickness
nominal dimension of the product

Note 1 to entry: That means:

a) the diameter in the case of rounds;

b) the lateral length in the case of squares;

c) the width over flats in the case of hexagons;

d) the shorter lateral length in the case of flats (rectangular bars) and wide-flats.

For special sections, 'thickness' has to be defined at the time of enquiry and order.

3.6
out-of round
difference between the smallest and largest dimension measured across the pairs of opposing points at a common cross-section

3.7
ruling section
section for which the specified mechanical properties shall apply

Note 1 to entry: Independent of the actual shape and dimensions of the cross-section of the product, the size of its ruling section is always given by a diameter. This corresponds to the diameter of an “equivalent round bar”. That is a round bar which will show the same cooling rate as the actual ruling section of the product concerned at its position for taking the test pieces, when being cooled from austenitizing temperature.

4 Classification and designation

4.1 Classification

The classification of the relevant steel grades is allocated in accordance with EN 10020. The general engineering and the free cutting steels are quality steels. The steels for case hardening, for quenching and tempering and the stainless steels are special steels.

4.2 Designation

For the steel grades covered by this document, the steel names and numbers given in the relevant tables are allocated in accordance with EN 10027-1 and EN 10027-2.

5 Information to be supplied by the purchaser

5.1 Mandatory information

The manufacturer shall obtain the following information from the purchaser at the time of enquiry and order:

a) quantity (mass, number of bars) to be delivered;

b) shape of the product (e.g. round, hexagon, square, flat);

c) the dimensions and tolerances of the product, see 7.7 and Tables 2 and 11 to 13;

d) reference to this European Standard, i.e. EN 10277;