SLOVENSKI STANDARD
SIST EN 10277-1:2000

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Svetli jekleni izdelki - Tehnični dobavni pogoji - 1. del: Splošno

Bright steel products - Technical delivery conditions - Part 1: General

Blankstahlerzeugnisse - Technische Lieferbedingungen - Teil 1: Allgemeines

Produits en acier transformés a froid - Conditions techniques de livraison - Partie 1: Généralités

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77.140.01	Železni in jekleni izdelki na splošno	Iron and steel products in general

SIST EN 10277-1:2000 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 10277-1

July 1999

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English version

Bright steel products - Technical delivery conditions - Part 1: General

Produits en acier transformés à froid - Conditions techniques de livraison - Partie 1: Généralités

Blankstahlerzeugnisse - Technische Lieferbedingungen - Teil 1: Allgemeines

This European Standard was approved by CEN on 11 June 1999.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Contents

Foreword

This European Standard has been prepared by Technical Committee ECISS/TC 23 “Steels for heat treatment, alloy steels and free-cutting steels - Qualities and dimensions”, 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 2000, and conflicting national standards shall be withdrawn at the latest by January 2000.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association. This European Standard is considered to be a supporting standard to those application and product standards which in themselves support an essential safety requirement of a New Approach Directive and which make reference to this European Standard.

This European Standard EN 10277 "Bright steel products - Technical delivery conditions" is subdivided as follows:

Part 1: General;
part 2: Steels for general engineering purposes;
part 3: Free-cutting steels;
part 4: Case hardening steels;
part 5: Steels for quenching and tempering.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

1.1 This part of EN 10277 specifies the general technical delivery conditions for bright steel bars in the drawn, turned or ground condition, in straight lengths and of the following steel types:

a) general engineering steels as specified in EN 10277-2;

b) free-cutting steels as specified in EN 10277-3;

c) case hardening steels as specified in EN 10277-4;

d) steels for quenching and tempering as specified in EN 10277-5.

It does not cover cold rolled products and cut lengths produced from strip or sheet by cutting.

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

1.3 In addition to the specifications of this European Standard, the general technical delivery requirements of EN 10021 are applicable, unless otherwise specified.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ENV 606	Bar coded transport and handling labels for steel products
EN 10002-1	Metallic materials - Tensile testing - Part 1: Method of testing (at ambient temperature), "including Addendum AC1:1990"
EN 10003-1	Metallic materials - Brinell hardness test - Part 1: Test method
EN 10020	Definition and classification of grades of steel
EN 10021	General technical delivery requirements for steel and iron products

EN 10027-1	Designation systems for steels - Part 1: Steel names, principal symbols
EN 10027-2	Designation systems for steel - 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 (includes amendment A1:1995)
EN 10277-2	Bright steel products - Technical delivery conditions - Part 2: Steels for general engineering purposes
EN 10277-3	Bright steel products - Technical delivery conditions - Part 3: Free-cutting steels
EN 10277-4	Bright steel products - Technical delivery conditions - Part 4: Case hardening steels
EN 10277-5	Bright steel products - Technical delivery conditions - Part 5: Steels for quenching and tempering
EN 10278	Dimensions and tolerances of bright steel products
EN ISO 377	Steel and steel products - Location and preparation of samples and test pieces for mechanical testing
EURONORM 103[1)]	Microscopic determination of the ferritic or austenitic grain size of steels
EURONORM 104[1)]	Determination of the depth of decarburization of non-alloy and low alloy structural steels
CR 10260	ECISS/IC 10 - Designation systems for steel - Additional symbols

1) It may be agreed at the time of ordering, until this EURONORM has been adopted as a European Standard, that either this EURONORM or a corresponding national standard should be applied.

CR 10261	ECISS/IC 11 - Iron and steel - Review of available methods of chemical analysis
ISO 286-1	ISO system of limits and fits - Part 1: Bases of tolerances, deviations and fits
ISO 14284	Steel and iron - Sampling and preparation of samples for the determination of chemical composition

3 Definitions

For the purpose of this European Standard the following definitions apply in addition to the definitions in EN ISO 377,
ISO 14284 and EN 10021.

3.1 Non-alloy and alloy steel; base, quality and special steel

See the definitions in EN 10020.

3.2 Steel products

Steel products are defined according to their shape and dimensions in EN 10079. In particular the following definitions are reproduced.

3.2.1 Drawn products (6.5.1, EN 10079:1992)

Products of various cross section shapes obtained, after descaling, by drawing of hot rolled bars or rod on a draw bench (cold deformation without removing material). This operation gives the product special features with respect to shape, dimensional accuracy (ISO 286 class IT11 or better) 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 regardless of size.

3.2.2 Turned products (6.5.2, EN 10079:1992)

Round bars produced by turning on a lathe followed by straightening and polishing. 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.

NOTE: For technical reasons some bars ordered as hot rolled products may be delivered roughly turned, nevertheless such products are treated as hot rolled products and not bright products.

3.2.3 Ground products (6.5.3, EN 10079:1992)

Drawn or turned round bars given an improved surface quality and dimensional accuracy by grinding or grinding and polishing.

3.3 Heat treatment terms

Terms used in the heat treatment of steel are defined in EN 10052.

3.4 Ruling section for heat treatment

The ruling section for heat treatment of a product is the section for which the mechanical properties have been specified (see Annex A).

Whatever the actual shape and dimensions of the cross section of the product the size of its ruling section is expressed as a diameter. This corresponds to the diameter of an "equivalent round bar" which, at the position of its cross section specified for taking test pieces for mechanical tests, will, when being cooled from the austenitising temperature, show the same cooling rate as the actual ruling section of the product concerned at its position for taking test pieces.

NOTE: The term "ruling section" should not be confused with the term "equivalent diameter" as defined in EN 10052.

4 Classification and designation

4.1 Classification

The classification of the relevant steel grades according to EN 10020 is indicated EN in 10277-2 to EN 10277-5.

4.2 Designation

4.2.1 Steel names

For the steel grades covered by this European Standard, the steel names as given in the relevant tables of EN 10277-2 to
EN 10277-5 are assigned in accordance with EN 10027-1 and CR 10260.

4.2.2 Steel numbers

For the steel grades covered by this European Standard, the steel numbers as given in the relevant tables of EN 10277-2 to EN 10277-5 are allocated in accordance with EN 10027-2.

5 Information to be supplied by the purchaser

5.1 Mandatory information

The following information shall be supplied by the purchaser at the time of enquiry and order:

a) the quantity (mass, number of bars) to be delivered, e.g. 2t;

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

c) the number of the dimensional standard (EN 10278);

d) the dimensions and tolerances on dimensions and shape, e.g. 20 mm diameter, tolerance h9, stock length 6000 mm;

e) reference to this European Standard including the number of the part (e. g. EN 10277-3);

f) steel name or steel number, e.g. 38SMn28 (1.0760) (see 4.2);

g) the delivery condition, e.g. +C (see 6.3);

h) the class of surface quality, e.g. class 3 (see 7.7.2 and table 1);

EXAMPLE:

2t rounds EN 10278 - 20 h9 x stock 6000
EN 10277-3-38SMn28+C - class 3

or

2t rounds EN 10278 - 20 h9 x stock 6000
EN 10277-3-1.0760+C - class 3

5.2 Supplementary information

The following supplementary information may be supplied by the purchaser and as agreed with the manufacturer:

a) reference testing for products used in the quenched and tempered condition (see B.1);

b) fine grain steel and method of measurement (see 7.4 and B.2);

c) testing for non-metallic inclusions (see 7.5 and B.3);

d) depth of decarburization (see 7.6 and B.4);

e) temporary corrosion protection (see B.5);

f) non-destructive testing (see 7.8 and B.6);

g) product analysis (see 7.1.2 and B.7);

h) special marking (see clause 9 and B.8);

i) hardenability requirements for grades of EN 10277-4 and EN 10277-5 (see 7.1.1.2 and 7.3 of EN 10277-4 and EN 10277-5;

j) if required, the type of inspection document in accordance with EN 10204 (see 8.1).