SLOVENSKI STANDARD
oSIST prEN 10028-1:2015

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Ploščati jekleni izdelki za tlačne posode - 1. del: Splošne zahteve

Flat products made of steels for pressure purposes - Part 1: General requirements

Flacherzeugnisse aus Druckbehälterstählen - Teil 1: Allgemeine Anforderungen

Produits plats en acier pour appareils à pression - Partie 1: Prescriptions générales

Ta slovenski standard je istoveten z: **prEN 10028-1**

ICS:

77.140.30	Jekla za uporabo pod tlakom	Steels for pressure purposes
77.140.50	Ploščati jekleni izdelki in polizdelki	Flat steel products and semi-products

oSIST prEN 10028-1:2015 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

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prEN 10028-1

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ICS 77.140.30; 77.140.50

Will supersede EN 10028-1:2007+A1:2009

English Version

Flat products made of steels for pressure purposes - Part 1: General requirements

Produits plats en acier pour appareils à pression - Partie 1: Prescriptions générales

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ECISS/TC 107.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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Foreword

This document (prEN 10028-1:2014) has been prepared by Technical Committee ECISS/TC 107 “Steel for pressure purposes”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 10028-1:2007+A1:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 97/23 EC.

For relationship with EU Directive 97/23 EC, see informative Annex ZA, which is an integral part of this document.

1 Scope

This European Standard specifies general technical delivery conditions for flat products for the construction of pressure equipment.

The general technical delivery conditions in EN 10021 also apply.

NOTE Once this European Standard is published in the EU Official Journal (OJEU) under Directive 97/23/EC, presumption of conformity to the Essential Safety Requirements (ESRs) of Directive 97/23/EC is limited to technical data of materials in this European Standard (Part 1 and the other relevant part of the series) and does not presume adequacy of the material to a specific item of equipment. Consequently, the assessment of the technical data stated in this material standard against the design requirements of this specific item of equipment to verify that the ESRs of Directive 97/23/EC are satisfied, needs to be done.

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 764-5:2002, *Pressure Equipment - Part 5: Compliance and Inspection Documentation of Materials*

EN 10020:2000, *Definition and classification of grades of steel*

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

prEN 10028-2:2014, *Flat products made of steels for pressure purposes - Part 2: Non-alloy and alloy steels with specified elevated temperature properties*

prEN 10028-3:2014, *Flat products made of steels for pressure purposes - Part 3: Weldable fine grain steels, normalized*

prEN 10028-4:2014, *Flat products made of steels for pressure purposes - Part 4: Nickel alloy steels with specified low temperature properties*

prEN 10028-5:2014, *Flat products made of steels for pressure purposes - Part 5: Weldable fine grain steels, thermomechanically rolled*

prEN 10028-6:2014, *Flat products made of steels for pressure purposes - Part 6: Weldable fine grain steels, quenched and tempered*

prEN 10028-7:2013, *Flat products made of steels for pressure purposes - Part 7: Stainless steels*

EN 10029:2010, *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 10052:1993, *Vocabulary of heat treatment terms for ferrous products*

EN 10079:2007, *Definitions of steel products*

EN 10088-1:2005, *Stainless steels - Part 1: List of stainless steels*

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

EN 10163-2:2004, *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections - Part 2: Plate and wide flats*

EN 10164:2004, *Steel products with improved deformation properties perpendicular to the surface of the product - Technical delivery conditions*

EN 10168:2004, *Steel products - Inspection documents - List of information and description*

EN 10204:2004, *Metallic products - Types of inspection documents*

EN 10307, *Non-destructive testing - Ultrasonic testing of austenitic and austenitic-ferritic stainless steels flat products of thickness equal to or greater than 6 mm (reflection method)*

EN ISO 148-1:2010, *Metallic materials - Charpy pendulum impact test - Part 1: Test method (ISO 148-1:2009)*

EN ISO 377:2013, *Steel and steel products - Location and preparation of samples and test pieces for mechanical testing (ISO 377:2013)*

EN ISO 2566-1:1999, *Steel - Conversion of elongation values - Part 1: Carbon and low alloy steels (ISO 2566-1:1984)*

EN ISO 2566-2:1999, *Steel - Conversion of elongation values - Part 2: Austenitic steels (ISO 2566-2:1984)*

EN ISO 3651-2:1998, *Determination of resistance to intergranular corrosion of stainless steels - Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels - Corrosion test in media containing sulfuric acid (ISO 3651-2:1998)*

EN ISO 6892-1:2009, *Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1:2009)*

EN ISO 6892-2:2011, *Metallic materials - Tensile testing - Part 2: Method of test at elevated temperature (ISO 6892-2:2011)*

EN ISO 9444-2:2010, *Continuously hot-rolled stainless steel - Tolerances on dimensions and form - Part 2: Wide strip and sheet/plate (ISO 9444-2:2009)*

EN ISO 9445:2010, *Continuously cold-rolled stainless steel narrow strip, wide strip, plate/sheet and cut lengths — Tolerances on dimensions and form (ISO 9445)*

EN ISO 18286:2010, *Hot-rolled stainless steel plates - Tolerances on dimensions and shape (ISO 18286:2008)*

EN ISO 14284:2002, *Steel and iron - Sampling and preparation of samples for the determination of chemical composition (ISO 14284:1996)*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10020:2000, EN 10079:2007 and EN 10052:1993 (but see 3.1 to 3.3) and the following apply.

3.1
normalizing
heat treatment consisting of austenizing followed by air cooling

3.2

normalizing rolling
rolling process in which the final deformation process is carried out in a certain temperature range leading to a material condition equivalent to that obtained after normalizing so that the specified values of the mechanical properties are retained even after normalizing

Note 1 to entry: The symbol for this delivery condition and for the normalized condition is N.

Note 2 to entry: Definition is deviating from EN 10052:1993.

3.3
thermomechanical rolling
[as defined in EN 10052:1993 for thermomechanical treatment]

Note to entry: Thermomechanical rolling (symbol M) may include processes of increased cooling rates with or without tempering including self-tempering but excluding definitively direct quenching and tempering.

3.4
quenching and tempering
[as defined in EN 10052:1993]

Note to entry: Quenching and tempering (symbol QT) also includes direct quenching plus tempering.

3.5
purchaser
person or organization that orders products in accordance with this European Standard

Note 1 to entry: The purchaser is not necessarily, but may be, a manufacturer of pressure equipment in accordance with the EU Directive listed in Annex ZA

Note 2 to entry: Where a purchaser has responsibilities under this EU Directive, this European Standard will provide a presumption of conformity with the essential requirements of the Directive so identified in Annex ZA.

4 Dimensions and tolerances on dimensions

The nominal dimensions and tolerances on dimensions for the products shall be agreed at the time of enquiry and order with reference to the dimensional standards listed in Table 1.

Table 1 - Product form and valid standards for tolerances on dimensions and shape

		Standard for tolerances on dimensions and shape							
		EN 10029	EN 10048	EN 10051	ISO 9444-1	EN ISO 9444-2	EN ISO 9445-1	EN ISO 9445-2	EN ISO 18286
Product form	Hot rolled plates 3 mm thick or above	X							
	Hot rolled narrow steel strip		X						
	Continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels			X					
	Continuously hot-rolled stainless steel - Narrow strip and cut lengths		X		X				
	Continuously hot-rolled stainless steel - Wide strip and sheet/plate					X			
	Continuously cold-rolled stainless steel - Narrow strip and cut lengths						X		
	Continuously cold-rolled stainless steel - Wide strip and plate/sheet							X	
	Hot-rolled stainless steel plates								X

NOTE 1 Unless otherwise agreed at the time of enquiry and order, class B as specified in EN 10029 shall apply to the tolerance on thickness of plates.

NOTE 2 EN ISO 9445-2 contains options providing wider dimensional choice.

5 Calculation of mass

A density of 7,85 kg/dm³ shall be used as the basis for the calculation of the nominal mass from the nominal dimensions of all steels of prEN 10028-2:2014 to prEN 10028-6:2014. Calculations for density of stainless steels shall be based on density values given in EN 10088-1:2005, Annex A.

6 Classification and designation

6.1 Classification

6.1.1 The classification of the steel grades in accordance with EN 10020 is given in the specific parts of EN 10028.

6.1.2 Steels covered in prEN 10028-7:2013 are additionally classified according to their structure into

— ferritic steels;

— martensitic steels;

— austenitic steels;

— austenitic-ferritic steels.

NOTE For more details see EN 10088-1.

6.2 Designation

The steel grades specified in the individual parts of EN 10028 are designated with steel names and steel numbers. The steel names have been allocated in accordance with EN 10027-1. The corresponding steel numbers have been allocated in accordance with EN 10027-2.

7 Information to be supplied by the purchaser

7.1 Mandatory information

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

a) quantity required;

b) type of flat product;

c) European Standard specifying the tolerances on dimensions, shape and mass (see Clause 4) and, if the relevant European Standard permits the purchaser certain options, e.g. regarding edge finishing or tolerance classes, specific information on these aspects;

d) nominal dimensions of the product;

e) number of the relevant part of this European Standard;

f) steel name or number;

g) delivery condition, if it differs from the usual condition specified in prEN 10028-2:2014, prEN 10028-3:2014, prEN 10028-4:2014, prEN 10028-5:2014 or prEN 10028-6:2014; for stainless steels – the process route selected from the relevant table of prEN 10028-7:2013;

h) inspection document to be issued (see 9.1.1).