ICS 77.140.50, 77.140.70 SLOVENSKÁ TECHNICKÁ NORMA Júl 2019

STN	**Oceľové výrobky so zlepšenými deformačnými vlastnosťami kolmo na povrch výrobku Technické dodacie podmienky**	**STN EN 10164** 42 1001

Steel products with improved deformation properties perpendicular to the surface of the product - Technical delivery conditions

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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EUROPEAN STANDARD

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Supersedes EN 10164:2004

English Version

Steel products with improved deformation properties perpendicular to the surface of the product - Technical delivery conditions

Aciers de construction à caractéristiques de déformation améliorées dans le sens perpendiculaire à la surface du produit - Conditions techniques de livraison

Stahlerzeugnisse mit verbesserten Verformungseigenschaften senkrecht zur Erzeugnisoberfläche - Technische Lieferbedingungen

This European Standard was approved by CEN on 16 May 2018.

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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 10164:2018) has been prepared by Technical Committee ECISS/TC 103 “Structural steels other than reinforcements”, 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of an identical text or by endorsement, at the latest by April 2019, and conflicting national standards shall be withdrawn at the latest by April 2019.

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 10164:2004.

The main changes with respect to the previous edition are listed below:

a) Normative references added and updated;

b) Clauses 6.1 and 6.2 revised;

c) Clause 8.2.2.2.3 c) is applicable for thicknesses 20 mm < t ≤ 80 mm;

d) Figure 1 and 4 revised;

e) Clause 12 revised;

f) Standard editorial revised.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

Introduction

Flat products and sections of steel as normally manufactured have deformation properties perpendicular to the surface (through thickness) which are different from those obtained in the surface direction. This anisotropy of the properties may lead to difficulties in welded structures, for instance lamellar tearing.

It is, however, possible to improve the through thickness properties by using additional steel making procedures.

Through thickness properties are characterized in this document by specified values for reduction of area in a through thickness tensile test.

The minimum values for reduction of area in this document cannot by themselves be regarded as ensuring safety against occurrence of lamellar tearing. Indeed, the risk of lamellar tearing is also basically influenced for instance by the type of structure, weld design and welding procedure.

However, the reduction of area is a good general guide to lamellar tear resistance, i.e. the risk of lamellar tearing decreases with increased reduction of area in the through thickness tensile test.

1 Scope

This document specifies deformation properties perpendicular to the surface of the product.

This document can be applied as a supplement to all product standards for flat products and sections of fully killed steels, except stainless steels. It covers products having a nominal thickness (t) between 15 mm and 400 mm of steels with a specified minimum upper yield strength R_{eH} or proof strength $R_{p0,2} \leq 960$ MPa[1)] for which improved through thickness properties are required.

This document can be applied to other steel types if agreed at the time of the order.

This document can be applied to products with thickness between 10 mm ≤ t <15 mm if agreed at the time of the order. See option 1.

This document can be applied to products with thickness t > 400 mm if agreed at the time of the order. See option 2.

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

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

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

EN 10306:2001, *Iron and steel - Ultrasonic testing of H beams with parallel flanges and IPE beams*

1) 1 MPa = 1 N/mm^2