SLOVENSKI STANDARD

SIST EN 10025-1:2004

01-december-2004

Nadomeġļa:

SIST EN 10113-1:1997

SIST EN 10113-2:1997

SIST EN 10113-3:1997

SIST EN 10137-1:1997

Vroļe valjani izdelki iz konstrukcijskih jekelï 1. del: Sploġni tehniļni dobavni pogoji

Hot rolled products of structural steels - Part 1: General technical delivery conditions

Warmgewalzte Erzeugnisse aus Baustählen - Teil 1: Allgemeine technische Lieferbedingungen

Produits laminés a chaud en aciers de construction - Partie 1: Conditions techniques générales de livraison

Ta slovenski standard je istoveten z: **EN 10025-1:2004**

ICS:

77.140.10

77.140.50

SIST EN 10025-1:2004 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 10025-1

November 2004

ICS 77.140.10; 77.140.50

Supersedes EN 10025:1990, EN 10113-1:1993, EN 10113-2:1993, EN 10113-3:1993, EN 10137-1:1995, EN 10137-2:1995

English version

Hot rolled products of structural steels - Part 1: General technical delivery conditions

Produits laminés à chaud en aciers de construction - Partie 1: Conditions générales techniques de livraison

Warmgewalzte Erzeugnisse aus Baustählen - Teil 1: Allgemeine technische Lieferbedingungen

This European Standard was approved by CEN on 30 September 2004.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword

This document (EN 10025-1:2004) has been prepared by Technical Committee ECISS/TC 10 “Structural steels - Grades and qualities”, the secretariat of which is held by NEN.

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 May 2005, and conflicting national standards shall be withdrawn at the latest by August 2006.

This document with the Parts 2 to 6 supersedes the following documents:

EN 10025:1990 + A1:1993, *Hot rolled products of non-alloy structural steels - Technical delivery conditions.*

EN 10113-1:1993, *Hot rolled products in weldable fine grain structural steels - Part 1: General delivery conditions.*

EN 10113-2:1993, *Hot rolled products in weldable fine grain structural steels - Part 2: Delivery conditions for normalized/normalized rolled steels.*

EN 10113-3:1993, *Hot rolled products in weldable fine grain structural steels - Part 3: Delivery conditions for thermomechanical rolled steels.*

EN 10137-1:1995, *Plates and wide flats made of high yield strength structural steels in the quenched and tempered or precipitation hardened condition - Part 1: General delivery conditions.*

EN 10137-2:1995, *Plates and wide flats made of high yield strength structural steels in the quenched and tempered or precipitation hardened condition - Part 2: Delivery conditions for quenched and tempered steels.*

EN 10155:1993, *Structural steels with improved atmospheric corrosion resistance - Technical delivery conditions.*

With resolution Nr. 2/1999 ECISS/TC 10 decided to withdraw EN 10137-3:1995 "Plates and wide flats made of high yield strength structural steels in the quenched and tempered or precipitation hardened condition - Part 3: Delivery conditions for precipitation hardened steels".

The specific requirements for structural steels are given in the following Parts:

Part 2: Technical delivery conditions for non-alloy structural steels

Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels

Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels

Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance

Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition

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 the EU Construction Products Directive (89/106/EEC).

For relationship with EU Construction Products Directive (89/106/EEC), see informative Annex ZA, which is an integral part of this document.

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

1 Scope

1.1 This document specifies requirements for flat and long products (see Clause 3) of hot rolled structural steels excluding structural hollow sections and tubes. Part 1 of this document specifies the general delivery conditions.

The specific requirements for structural steels are given in the following Parts:

Part 2: Technical delivery conditions for non-alloy structural steels

Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels

Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels

Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance

Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition

The steels specified in this document are intended for use in welded, bolted and riveted structures.

1.2 This document does not apply to coated products or to steel products for general structural applications in accordance with the standards and draft standards listed in the Bibliography.

2 Normative references

The following referenced documents are indispensable for the application 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.

2.1 General standards

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

EN 10021:1993, *General technical delivery requirements for steel and iron products*.

EN 10025-2:2004, *Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels.*

EN 10025-3:2004, *Hot rolled products of structural steels - Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels.*

EN 10025-4:2004, *Hot rolled products of structural steels - Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels.*

EN 10025-5:2004, *Hot rolled products of structural steels - Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance.*

EN 10025-6:2004, *Hot rolled products of structural steels - Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition.*

EN 10027-1, *Designation systems for steels - Part 1: Steel names, principal symbols.*

EN 10027-2, *Designation systems for steels - Part 2: Numerical system.*

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

EN 10079:1992, *Definitions of steel products.*

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

EN 10168, *Steel products - Inspection documents – List of information and description.*

EN 10204, *Metallic products - Types of inspection documents.*

CR 10260, *Designation systems for steel - Additional symbols.*

EN ISO 9001, *Quality management systems – Requirements (ISO 9001:2000).*

2.2 Standards on dimensions and tolerances (see 7.7.1)

EN 10017, *Steel rod for drawing and/or cold rolling - Dimensions and tolerances.*

EN 10024, *Hot rolled taper flange I sections - Tolerances on shape and dimensions.*

EN 10029, *Hot rolled steel plates 3 mm thick or above - Tolerances on dimensions, shape and mass.*

EN 10034, *Structural steel I and H sections - Tolerances on shape and dimensions.*

EN 10048, *Hot rolled narrow steel strip - Tolerances on dimensions and shape.*

EN 10051, *Continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels - Tolerances on dimensions and shape.*

EN 10055, *Hot-rolled steel equal flange tees with radiused root and toes - Dimensions and tolerances on shape and dimensions.*

EN 10056-1, *Structural steel equal and unequal leg angles - Part 1: Dimensions.*

EN 10056-2, *Structural steel equal and unequal leg angles - Part 2: Tolerances on shape and dimensions.*

EN 10058, *Hot rolled flat steel bars for general purposes - Dimensions and tolerances on shape and dimensions.*

EN 10059, *Hot rolled square steel bars for general purposes - Dimensions and tolerances on shape and dimensions.*

EN 10060, *Hot rolled round steel bars for general purposes - Dimensions and tolerances on shape and dimensions.*

EN 10061, *Hot rolled hexagon steel bars for general purposes - Dimensions and tolerances on shape and dimensions.*

EN 10067, *Hot rolled bulb flats - Dimensions and tolerances on shape, dimensions and mass.*

EN 10162, *Cold rolled steel sections - Technical delivery conditions - Dimensional and cross-sectional tolerances.*

EN 10279, *Hot rolled steel channels - Tolerances on shape, dimensions and mass.*

2.3 Standards on testing

EN 10002-1:2001, *Metallic materials - Tensile testing - Part 1: Method of test at ambient temperature.*

EN 10045-1, *Metallic materials - Charpy impact test - Part 1: Test method.*

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

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

EN 10308, *Non destructive testing - Ultrasonic testing of steel bars.*

CR 10261, *ECISS Information Circular 11 - Iron and steel - Review of available methods of chemical analysis.*

EN ISO 377, *Steel and steel products - Location and preparation of samples and test pieces for mechanical testing (ISO 377:1997).*

EN ISO 643, *Steels – Micrographic determination of the apparent grain size (ISO 643:2003).*

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

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

EN ISO 17642-1, *Destructive tests on welds in metallic materials - Cold cracking tests for weldments - Arc welding processes - Part 1: General (ISO 17642-1:2004).*

EN ISO 17642-2, *Destructive tests on welds in metallic materials - Cold cracking tests for weldments - Arc welding processes - Part 2: Self-restraint tests (ISO 17642-2:2004).*

EN ISO 17642-3, *Destructive tests on welds in metallic materials - Cold cracking tests for weldments - Arc welding processes - Part 3: Externally loaded tests (ISO 17642-3:2004).*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in:

– EN 10020:2000 for classification of grades of steel;

– EN 10021:1993 for general technical delivery requirements;

– EN 10052:1993 for heat treatment terms;

– EN 10079:1992 for products forms

and EN 10025-2:2004 to EN 10025-6:2004 for other definitions apply.

4 Classification and designation

4.1 Classification

4.1.1 Main quality classes

The classification of main quality classes of steel grades in accordance with EN 10020:2000 is given in EN 10025-2 to EN 10025-6.

4.1.2 Grades and qualities

The steels for flat and long products specified in EN 10025-2 to EN 10025-6 are subdivided in grades on the basis of the minimum specified yield strength at ambient temperature.

The steel grades may be supplied in qualities which are specified in EN 10025-2 to EN 10025-6.

4.2 Designation

For the steel grades covered by this document the steel names shall be allocated in accordance with EN 10027-1 and CR 10260; the steel numbers shall be allocated in accordance with EN 10027-2.

5 Information to be supplied by the purchaser

5.1 Mandatory information

The following information shall be obtained by the manufacturer at the time of the order:

a) quantity to be delivered;

b) product form;

c) number of the relevant part of this document;

d) steel name or the steel number (see EN 10025-2 to EN 10025-6);

e) nominal dimensions and tolerances on dimensions and shape (see 7.7.1);

f) all required options (see 5.2);

g) additional requirements of inspection and testing and inspection documents as specified in EN 10025-2 to EN 10025-6.

NOTE The regulated characteristics would be declared in accordance with Annex ZA.

5.2 Options

A number of options are specified in Clause 13. In EN 10025-2 to EN 10025-6 options are specified which are specific for those parts. In the event that the purchaser does not indicate his wish to implement any of these options, the supplier shall supply in accordance with the basic specification.

6 Manufacturing process

6.1 Steel making process

The steel making process is at the discretion of the manufacturer with the exclusion of the open hearth (Siemens-Martin) process. If specified at the time of the order the steel making process of the relevant steel grade shall be reported to the purchaser.

See option 1.

6.2 Deoxidation or grain size

The method of deoxidation or the required grain size shall be as given in EN 10025-2 to EN 10025-6.

6.3 Delivery conditions

The delivery conditions shall be as given in EN 10025-2 to EN 10025-6.

7 Requirements

7.1 General

The following requirements apply when sampling, preparation of test pieces and testing specified in Clauses 8, 9 and 10 are carried out.

7.2 Chemical composition

7.2.1 The chemical composition determined by ladle analysis shall comply with the values in the relevant Table of EN 10025-2 to EN 10025-6.

7.2.2 The limits applicable for the product analysis are given in the relevant Table of EN 10025-2 to EN 10025-6.

The product analysis shall be carried out when specified at the time of the order.

See option 2.

7.2.3 For determining the carbon equivalent value the following IIW (International Institute for Welding) formula shall be used:

$$CEV = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}$$

The content of the elements in the carbon equivalent value formula shall be reported in the inspection document.

7.3 Mechanical properties

7.3.1 General

7.3.1.1 Under the inspection and testing conditions as specified in Clauses 8, 9 and 10 and in the delivery condition as specified in 6.3 the mechanical properties (tensile strength, yield strength, impact strength and elongation) shall comply with the relevant requirements of EN 10025-2 to EN 10025-6.