



SLOVENSKI STANDARD
oSIST prEN 10025-3:2012
01-julij-2014

Vroče valjani izdelki iz konstrukcijskih jekel - 3. del: Tehnični dobavni pogoji za normalizirana/normalizirana valjana variva drobnozrnata konstrukcijska jekla

Hot rolled products of structural steels - Part 3: Technical delivery conditions for normalized rolled weldable fine grain structural steels

Warmgewalzte Erzeugnisse aus Baustählen - Teil 3: Technische Lieferbedingungen für normalgeglühte/normalisierend gewalzte schweißgeeignete Feinkornbaustähle

Produits laminés à chaud en aciers de construction - Partie 3 : Conditions techniques de livraison pour les aciers de construction soudable à grains fins à l'état normalisé/laminage normalisé

Ta slovenski standard je istoveten z: prEN 10025-3

ICS:

77.140.10	Jekla za toplotno obdelavo	Heat-treatable steels
77.140.50	Ploščati jekleni izdelki in polizdelki	Flat steel products and semi-products

oSIST prEN 10025-3:2012

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

WHITE DRAFT
prEN 10025-3

May 2014

ICS 77.140.10; 77.140.50

Will supersede EN 10025-3:2004

English Version

Hot rolled products of structural steels - Part 3: Technical delivery conditions for normalized rolled weldable fine grain structural steels

Produits laminés à chaud en aciers de construction - Partie
3 : Conditions techniques de livraison pour les aciers de
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Technische Lieferbedingungen für
normalgeglühte/normalisierend gewalzte schweißgeeignete
Feinkornbaustähle

This draft European Standard is submitted to ECISS/COCOR before submission to CEN members for formal vote. It has been drawn up by the Technical Committee ECISS/TC 103.

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 10025-3:2014) has been prepared by Technical Committee ECISS/TC 103 “Structural steels other than reinforcements”, the secretariat of which is held by DIN.

This document is currently submitted to the COCOR Vote.

This document will supersede EN 10025-3:2004.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

The titles of the other parts of this document are:

Part 1: General;

Part 2: Technical delivery conditions for non-alloy 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.

prEN 10025-3:2014 (E)**1 Scope**

Part 3 of this document, in addition to Part 1, specifies technical delivery conditions for flat and long products of hot rolled weldable fine grain structural steels in the normalized/normalized rolled delivery condition in the grades and qualities given in Tables 1 to 3 (chemical composition) and Tables 4 to 6 (mechanical properties) in thickness ≤ 250 mm.

In addition to prEN 10025-1:2014 the steels specified in this document are especially intended for use in heavily loaded parts of welded structures such as, bridges, flood gates, storages tanks, water supply tanks, etc., for service at ambient and low temperatures.

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 1011-2, *Welding – Recommendations for welding of metallic materials - Part 2: Arc welding of ferritic steels*

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

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

prEN 10025-1:2014, *Hot rolled products of structural steels - Part 1: General*

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

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

EN 10079:2007, *Definition of steel products*

EN 10163-1, *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections – Part 1: General requirements*

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

EN 10163-3, *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections – Part 3: Sections*

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

EN 10204, *Metallic products – Types of inspection documents*

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

EN 10221, *Surface quality classes for hot-rolled round bars and rods - Technical delivery conditions*

EN ISO 14713-2:2009, *Guidelines and recommendations for the protection against corrosion of iron and steel structures – Zinc coating – Part 2: Hot dip galvanizing (ISO 14713-2:2009)*

CEN/TR 10347, *Guidance for forming of structural steels in processing.*

2.2 Standards on dimensions and tolerances (see 7.7.1)

EN 10017, *Non-alloy 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 and shape*

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 - Dimensions and tolerances on shape and dimensions*

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

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

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

2.3 Standards on testing

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*

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

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

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

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

prEN 10025-3:2014 (E)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 10025-1:2014 and the following apply.

3.1 normalized rolling
rolling process in which the final deformation 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 In international publications for both the normalizing rolling, as well as the thermomechanical rolling, the expression "controlled rolling" may be found. However in view of the different applicability of the products a distinction of the terms is necessary.

3.2 normalizing
heat treatment consisting of austenitizing followed by air cooling

3.3 fine grained steels
steels with fine grain structure with an equivalent index of ferritic grain size ≥ 6 .

Note 1 to entry For the determination of grain sizes see EN ISO 643.

4 Classification and designation

4.1 Classification

4.1.1 Main quality classes

The steel grade S275 specified in this document shall be classified as non-alloy quality steel and steel grade S355 shall be classified as alloy quality steel and the steel grades S420 and S460 specified in this document shall be classified as alloy special steels according to EN 10020.

4.1.2 Grades and qualities

This document specifies four steel grades S275, S355, S420 and S460.

All the steel grades may be supplied in the following qualities as specified at the time of the order:

- with specified minimum values of impact energy at temperatures not lower than -20 °C , designated as N;
- with specified minimum values of impact energy at temperatures not lower than -50 °C , designated as NL.

4.2 Designation

4.2.1 The designation shall be in accordance with prEN 10025-1.

4.2.2 The designation shall consist of:

- number of this document (prEN 10025-3);
- steel name or the steel number; the steel name consisting of:
 - symbol S (for structural steel);