# SLOVENSKI STANDARD
# oSIST prEN 10025-3:2018

**01-september-2018**

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**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/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

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**Ta slovenski standard je istoveten z: prEN 10025-3**

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**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 |

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# DRAFT
# prEN 10025-3

June 2018

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/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 construction soudable à l'état normalisé/laminage normalisant

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

This draft European Standard is submitted to CEN members for second enquiry. 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (prEN 10025-3:2018) 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 second CEN Enquiry.

This document will supersede EN 10025-3:2004.

This European Standard consists of the following parts, under the general title *Hot rolled products of structural steels:*

*Part 1: General*

*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*

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For a short transition period there will be a coexistence of EN 10025-1:2004 with EN 10025-2:2018 to −6:2018, since the new EN 10025-1 has to fulfil the requirements of the CPR and will therefore be published later. For this short transition period up-to-the publication of the next edition of part 1 the following has to be taken into account for EN 10025-1:2004:

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a) all dated and undated references to EN 10025-1:2004 to −6:2004 are unchanged to this version with following exception: In 9.2.2.1 the reference must be 8.3.1 and 8.3.2 instead of 8.4.1 and 8.4.2,

b) Clauses 5, 12 and 13 of EN 10025-1:2004 are no longer relevant.

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

a) part 3 is now a stand-alone standard for technical delivery conditions including the preparation of samples and test pieces, the test methods, the marking, labelling and packaging and the drawings;

b) for construction purposes this standard and part 1 must be used together;

c) requirements for elements not definded were added to 7.2.1 and 7.2.2;

d) Option 33 was added, Option 3 was renumbered to Option 24 and Option 9 was deleted;

e) Si-content in 7.2.4 was changed;

f) 7.4.3 concerning hot-dip zinc coating was modified;

g) key to Figure A.1 was updated;

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h) Annex B was deleted;

i) references were updated and the document was editorially revised.

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# 1 Scope

This document 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.

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 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.

## 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*

EN 10025-1, *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, *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 10168, *Steel products — Inspection documents — List of information and description*

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

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

CR 10320, *Optical emission analysis of low alloy steels (routine method) — Method for determination of C, Si, S, P, Mn, Cr, Ni and Cu*

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EN ISO 9443, *Surface quality classes for hot-rolled bars and wire rod*

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)*

## 2.2 Standards on dimensions and tolerances

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 and steel wide flats 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*

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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*

EN 10363, *Continuously hot-rolled patterned steel strip and plate/sheet cut from wide strip — Tolerances on dimensions and shape*

EN 10365, *Hot rolled steel channels, I and H sections — Dimensions and masses*

## 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*

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

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

EN ISO 643, *Steels — Micrographic determination of the apparent grain size (ISO 643)*

EN ISO 6892-1:2016, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1:2016)*

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

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10079 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

**3.1**
**normalized rolled**
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.

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**3.2**
**normalizing**
heat treatment consisting of austenitizing followed by air cooling

**3.3**
**fine grain 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.

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

**4.2.2** The designation shall consist of:

— number of this document (EN 10025-3);

— steel name or the steel number; the steel name consisting of:

  — symbol S (for structural steel);

  — indication of the minimum specified yield strength for thickness ≤ 16 mm expressed in MPa;

  — delivery condition N;

  — capital letter L for the quality with specified minimum values of impact energy at temperatures not lower than −50 °C.

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EXAMPLE Normalized structural steel (S) with a specified minimum yield strength at room temperature of 355 MPa, and with a specified minimum of impact energy at −50 °C:

EN 10025-3 - S355NL
or
EN 10025-3 - 1.0546

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## 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 the order:

a) quantity to be delivered;

b) product form and the number of the standard for dimensions and tolerances (see 2.2);

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

d) steel designation (see 4.2.2);

e) additional requirements of inspection and testing and all required options (see 5.2 and Clause 13);

f) type of inspection document according to EN 10204 (see 8.1).