

norm**NEN-EN 10025-3**

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

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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

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

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 Preview

Foreword

This document (prEN 10025-3:2011) 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 CEN Enquiry.

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, and supports essential requirements of the EU Construction Products Directive (89/106/EEC). For relationship with the EU Construction Products Directive, see informative Annex ZA of prEN 10025-1:2010.

The titles of the other parts of this document are:

Part 1: General technical delivery conditions;

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.

1 Scope

Part 3 of this document, in addition to part 1, specifies requirements 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 10025-1:2010 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, *Definition and classification of grades of steel.*
- prEN 10025-1:2010, *Hot-rolled products of structural steels - Part 1: General technical delivery conditions.*
- EN 10027-1, *Designation systems for steels - Part 1: Steel names.*
- EN 10027-2, *Designation systems for steels - Part 2: Numerical system.*
- 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 10221, *Surface quality classes for hot-rolled round bars and rods - Technical delivery conditions.*
- EN ISO 14713-2, *Guidelines and recommendations for the protection against corrosion of iron and steel structures – Zinc coating – Part 2: Hot dip galvanizing (ISO 14713-2:2010).*

prEN 10025-3:2011 (E)**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, 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 - 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 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 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 643, *Steels – Micrographic determination of the apparent grain size (ISO 643:2003).*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 10025-1:2010 and the following apply.

3.1 normalizing 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 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 fine grained steels

steels with fine grain structure with an equivalent index of ferritic grain size ≥ 6 determined in accordance with 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.

NOTE For a list of corresponding former designations see Annex A, Table A.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);

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