

ILNAS

Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN 10025-6:2004+A1:2009

Hot rolled products of structural steels - Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and

Warmgewalzte Erzeugnisse aus
Baustählen - Teil 6: Technische
Lieferbedingungen für Flacherzeugnisse
aus Stählen mit höherer Streckgrenze im

Produits laminés à chaud en aciers de
construction - Partie 6: Conditions
techniques de livraison pour produits
plats en aciers à haute limite d'élasticité

05/2009



National Foreword

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ILNAS-EN 10025-6:2004+A1:2009
EUROPEAN STANDARD **EN 10025-6:2004+A1**
NORME EUROPÉENNE
EUROPÄISCHE NORM
May 2009

ICS 77.140.10; 77.140.50

Supersedes EN 10025-6:2004

English Version

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

Produits laminés à chaud en aciers de construction - Partie 6: Conditions techniques de livraison pour produits plats en aciers à haute limite d'élasticité à l'état trempé et revenu

Warmgewalzte Erzeugnisse aus Baustählen - Teil 6: Technische Lieferbedingungen für Flacherzeugnisse aus Stählen mit höherer Streckgrenze im vergüteten Zustand

This European Standard was approved by CEN on 1 April 2004 and includes Amendment 1 approved by CEN on 17 April 2009.

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Foreword

This document (EN 10025-6:2004+A1:2009) has been prepared by Technical Committee ECISS/TC 10 "Structural steels - Grades and qualities", 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of an identical text or by endorsement, at the latest by November 2009, and conflicting national standards shall be withdrawn at the latest by November 2009.

This document includes Amendment 1, approved by CEN on 2009-04-17.

This document supersedes A1 EN 10025-6:2004 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

A1 deleted text A1

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 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.

This document has been prepared under Mandate M/120 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 EN 10025-1:2004.

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

1 Scope

Part 6 of this document, in addition to part 1, specifies requirements for flat products of high yield strength alloy special steels. The grades and qualities are given in Tables 2 to 4 (chemical composition) and Tables 5 to 7 (mechanical properties) and are supplied in the quenched and tempered condition as given in 6.3.

The steels specified in this document are applicable to hot-rolled flat products with a minimum nominal thickness of 3 mm and a maximum nominal thickness ≤ 150 mm for grades S460, S500, S550, S620 and S690, a maximum nominal thickness ≤ 100 mm for grade S890 and a maximum nominal thickness ≤ 50 mm for grade S960, in steels which, after quenching and tempering, have a specified minimum yield strength of 460 MPa¹⁾ to 960 MPa¹⁾.

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.*

EN 10025-1:2004, *Hot rolled products of structural steels — Part 1: General technical delivery conditions.*

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

ⓘ deleted text ⓘ

¹⁾ 1 MPa = 1 N/mm².

2.2 Standards on dimensions and tolerances (see 7.7.1)

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

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

2.3 Standards on testing

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10025-1:2004 and the following apply.

3.1 quenching

operation which consists of cooling a ferrous product more rapidly than in still air

3.2 tempering

heat treatment applied to a ferrous product generally after quench hardening or other heat treatment to bring the properties to the required level

It consists of heating to specific temperatures ($< A_{c1}$) and soaking one or more times followed by cooling at an appropriate rate.

4 Classification and designation

4.1 Classification

4.1.1 Main quality classes

The steel grades specified in this document shall be classified as alloy special steels according to EN 10020.

4.1.2 Grades and qualities

This document specifies seven steel grades. They differ in their minimum yield strength at ambient temperature.

All the grades can be delivered in the following qualities as specified at the time of the enquiry and order:

- (no symbol) with specified minimum values of impact energy at temperatures not lower than -20 °C ;
- L with specified minimum values of impact energy at temperatures not lower than -40 °C ;