

ILNAS

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

ILNAS-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

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

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

11/2004



National Foreword

This European Standard EN 10025-6:2004 was adopted as Luxembourgish Standard ILNAS-EN 10025-6:2004.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

<https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

THIS PUBLICATION IS COPYRIGHT PROTECTED

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

EUROPEAN STANDARD ^{ILNAS-EN 10025-6:2004} **EN 10025-6**
NORME EUROPÉENNE
EUROPÄISCHE NORM

November 2004

ICS 77.140.10; 77.140.50

Supersedes EN 10137-2:1995

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
des 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.

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.....	4
1 Scope	5
2 Normative references	5
2.1 General standards	5
2.2 Standards on dimensions and tolerances (see 7.7.1).....	6
2.3 Standards on testing	6
3 Terms and definitions	6
4 Classification and designation.....	6
4.1 Classification.....	6
4.1.1 Main quality classes	6
4.1.2 Grades and qualities	6
4.2 Designation	7
5 Information to be supplied by the purchaser	7
5.1 Mandatory information	7
5.2 Options	7
6 Manufacturing process	8
6.1 Steel making process.....	8
6.2 Deoxidation or grain size	8
6.3 Delivery conditions.....	8
7 Requirements	8
7.1 General.....	8
7.2 Chemical composition	8
7.3 Mechanical properties.....	9
7.3.1 General.....	9
7.3.2 Impact properties.....	9
7.3.3 Improved deformation properties perpendicular to the surface	9
7.4 Technological properties	9
7.4.1 Weldability	9
7.4.2 Formability.....	10
7.4.3 Suitability for hot-dip zinc-coating.....	10
7.5 Surface properties	11
7.6 Internal soundness	11
7.7 Tolerances on dimensions and shape, mass	11
8 Inspection	11
8.1 General.....	11
8.2 Type of inspection and inspection document	11
8.3 Frequency of testing	11
8.3.1 Sampling.....	11
8.3.2 Test units	12
8.3.3 Verification of chemical composition.....	12
8.4 Tests to be carried out for specific inspection.....	12
9 Preparation of samples and test pieces.....	12
9.1 Selection and preparation of samples for chemical analysis	12
9.2 Location and orientation of samples and test pieces for mechanical tests.....	13
9.2.1 General.....	13
9.2.2 Preparation of samples	13
9.2.3 Preparation of test pieces	13

9.2.4	Impact test pieces	13
9.3	Identification of samples and test pieces	13
10	Test methods	13
10.1	Chemical analysis	13
10.2	Mechanical tests	13
10.3	Ultrasonic testing	13
10.4	Retests	14
11	Marking, labelling, packaging	14
12	Complaints	14
13	Options (see 5.2).....	14
Annex A (informative) List of corresponding former designations		21
Annex B (informative) List of national standards which correspond with ECSC IC 2 referenced		22
Annex C (informative) Minimum recommended inside bend radii for flanging.....		23
Bibliography.....		24

Foreword

This document (EN 10025-6:2004) 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 May 2005.

This document supersedes, together with EN 10025-1:2004, EN 10137-1:1995, *Plates and wide flats made of high yield strength structural steels in the quenched and tempered or precipitation hardened conditions – Part 1: General delivery conditions* and EN 10137-2:1995, *Plates and wide flats made of high yield strength structural steels in the quenched and tempered or precipitation hardened conditions - Part 2: Delivery conditions for quenched and tempered steels*.

According to resolution ECISS/TC 10 Nr 2/1999 EN 10137-3:1995, *Plates and wide flats made of high yield strength structural steels in the quenched and tempered or precipitation hardened conditions - Part 3: Delivery conditions for precipitation hardened steels* is withdrawn because the steels from this document are hardly produced at this moment.

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

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

¹⁾ 1 MPa = 1 N/mm².