

Steels for quenching and tempering - Part 2: Technical delivery conditions for non alloy steels

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Technical delivery conditions for non alloy steels

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 10083-2:2006 sisaldab Euroopa standardi EN 10083-2:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 20.09.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 10083-2:2006 consists of the English text of the European standard EN 10083-2:2006.</p> <p>This document is endorsed on 20.09.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This part of EN 10083, in addition to Part 1, specifies the technical delivery requirements for: - semi-finished products, hot formed, e.g. blooms, billets, slabs (see NOTES 2 and 3 in EN 10083-1:2006, Clause 1), - bars (see NOTE 2 in EN 10083-1:2006, Clause 1), - rod, - wide flats, - hot-rolled strip and sheet/plate, - forgings</p>	<p>Scope:</p> <p>This part of EN 10083, in addition to Part 1, specifies the technical delivery requirements for: - semi-finished products, hot formed, e.g. blooms, billets, slabs (see NOTES 2 and 3 in EN 10083-1:2006, Clause 1), - bars (see NOTE 2 in EN 10083-1:2006, Clause 1), - rod, - wide flats, - hot-rolled strip and sheet/plate, - forgings</p>
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Võtmesõnad: acceptance specification, chemical composition, classification, consistency (mechanical property), dimensions

English Version

**Steels for quenching and tempering - Part 2: Technical delivery
conditions for non alloy steels**

Aciers pour trempe et revenu - Partie 2: Conditions
techniques de livraison des aciers non alliés

Vergütungsstähle - Teil 2: Technische Lieferbedingungen
für unlegierte Stähle

This European Standard was approved by CEN on 30 June 2006.

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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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN 10083-2:2006) has been prepared by Technical Committee ECISS/TC 23 “Steels for heat treatment, alloy steels and free-cutting steels - Qualities and dimensions”, 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 February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

This document supersedes EN 10083-2:1991.

Together with Part 1 and Part 3 of this standard, this Part 2 is a revision of the following European Standards:

EN 10083-1:1991 +A1:1996, *Quenched and tempered steels – Part 1: Technical delivery conditions for special steels*

EN 10083-2: 1991 +A1:1996, *Quenched and tempered steels – Part 2: Technical delivery conditions for unalloyed quality steels*

EN 10083-3:1995, *Quenched and tempered steels – Part 3: Technical delivery conditions for boron steels*

and of

EURONORM 86-70, *Flame and induction hardening steels – Quality specifications*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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

This part of EN 10083, in addition to Part 1, specifies the technical delivery requirements for:

- semi-finished products, hot formed, e.g. blooms, billets, slabs (see NOTES 2 and 3 in EN 10083-1:2006, Clause 1),
- bars (see NOTE 2 in EN 10083-1:2006, Clause 1),
- rod,
- wide flats,
- hot-rolled strip and sheet/plate,
- forgings (see NOTE 2 in EN 10083-1:2006, Clause 1),

manufactured from the direct hardening non alloy steels for quenching and tempering and the non alloy flame and induction hardening steels and supplied in one of the heat treatment conditions given for the different types of products in Table 1, lines 2 to 7, and in one of the surface conditions given in Table 2.

The steels are generally intended for the manufacture of quenched and tempered, flame or induction hardened machine parts, but can also be used in the normalized condition.

The requirements for mechanical properties given in this document are restricted to the sizes given in Table 9 and Table 10.

NOTE This document does not apply for bright steel products. For bright steel products EN 10277-1 and EN 10277-5 apply.

In special cases, variations in these technical delivery requirements or additions to them may be agreed at the time of enquiry and order (see Annex A).

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.

EN 10002-1, *Metallic materials – Tensile testing – Part 1: Method of test at ambient temperature*

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

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

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

EN 10045-1, *Metallic materials – Charpy impact test – Part 1: Test method*

EN 10083-1:2006, *Steels for quenching and tempering – Part 1: General technical delivery conditions*

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

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

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

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

CR 10261, *ECISS Information Circular 11 – Iron and steel – Review of available methods of chemical analysis*

EN 10308, *Non destructive testing – Ultrasonic testing of steel bars*

EN ISO 377, *Steel and steel products – Location and preparation of samples and test pieces for mechanical testing (ISO 377:1997)*

EN ISO 642, *Steel – Hardenability test by end quenching (Jominy test) (ISO 642:1999)*

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

EN ISO 3887, *Steels – Determination of depth of decarburization (ISO 3887:2003)*

EN ISO 6506-1, *Metallic materials – Brinell hardness test – Part 1: Test method (ISO 6506-1:2005)*

EN ISO 6508-1:2005, *Metallic materials – Rockwell hardness test – Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T) (ISO 6508-1:2005)*

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

EN ISO 18265, *Metallic materials – Conversion of hardness values (ISO 18265:2003)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10083-1:2006 apply.

4 Classification and designation

4.1 Classification

Steel grades C35, C40, C45, C55 and C60 are classified according to EN 10020 as non alloy quality steels and the other steel grades as non alloy special steels.

4.2 Designation

4.2.1 Steel names

For the steel grades covered by this document, the steel names as given in the relevant tables are allocated in accordance with EN 10027-1.

4.2.2 Steel numbers

For the steel grades covered by this document, the steel numbers as given in the relevant tables are allocated in accordance with EN 10027-2.