



National Standards Authority of Ireland

IRISH STANDARD

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ICS 77.140.10

**STEELS FOR QUENCHING AND TEMPERING -
PART 1: GENERAL TECHNICAL DELIVERY
CONDITIONS**

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Vergütungsstähle - Teil 1: Allgemeine technische Lieferbedingungen

This European Standard was approved by CEN on 7 July 2006.

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Foreword

This document (EN 10083-1:2006) 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of an identical text or by endorsement, at the latest by February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

Together with Part 2 and Part 3 of this standard, this Part 1 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 86:1970, *Steels for flame and induction hardening — Quality specifications*

The specific requirements for steels for quenching and tempering are given in the following parts:

Part 2: Technical delivery conditions for non alloy steels

Part 3: Technical delivery conditions for alloy steels

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.

EN 10083-1:2006 (E)

1 Scope

This part of EN 10083 specifies the general technical delivery requirements for

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

manufactured from the direct hardening non alloy steels for quenching and tempering (see EN 10083-2), the direct hardening alloy steels for quenching and tempering (see EN 10083-3), the non alloy flame and induction hardening steels (see EN 10083-2) and the alloy flame and induction hardening steels (see EN 10083-3), and supplied in one of the heat treatment conditions given for the different types of products in the relevant tables of EN 10083-2 and EN 10083-3 and in one of the surface conditions given in the relevant tables of EN 10083-2 and EN 10083-3.

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 (see EN 10083-2).

Where applicable, the requirements for mechanical properties given in EN 10083-2 and EN 10083-3 are restricted to the relevant tables in these documents.

NOTE 1 European Standards on similar grades are listed in Annex C.

NOTE 2 Hammer forged semi-finished products (blooms, billets, slabs etc.), seamless rolled rings and hammer forged bars are in the following covered under semi-finished products or bars and not under the term "forgings".

NOTE 3 Special agreements should be made when ordering un-worked continuously cast semi-finished products.

NOTE 4 In accordance with EN 10020, the steels covered by EN 10083-2:2006 are quality and special steels, the steels covered by EN 10083-3:2006 are special steels. The differences between quality and special steels are characterized by the following requirements, which are valid for special steels only:

- the minimum impact values in the quenched and tempered condition (for non alloy special steels in the case of mean percentages by mass of carbon < 0,50 % only);
- limiting hardenability values in the Jominy test (for non alloy steels in the case of percentages by mass of carbon > 0,30 % only);
- limited oxide inclusion content;
- lower maximum contents for phosphorus and sulphur.

NOTE 5 This European Standard 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 B).

In addition to the specifications of this European Standard, the general technical delivery conditions given in EN 10021 are applicable unless otherwise specified.

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