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STANDARDS
INSTITUTE

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Definition and classification of grades of steel

The European Standard EN 10020:2000 has the status of a Swedish Standard. This document contains the official English version of EN 10020:2000 with a Swedish translation.

This document supersedes the Swedish standards SS-EN 10020, edition 1, SS-EN 10020/AC:1991, edition 1 and SS-EN 10020 T1, edition 1.

Swedish Standards corresponding to documents referred to in this Standard are listed in "Catalogue of Swedish Standards", issued by SIS. The Catalogue lists, with reference number and year of Swedish approval, International and European Standards approved as Swedish Standards as well as other Swedish Standards.

Definition och klassificering av ståltyper

Europastandarden EN 10020:2000 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 10020:2000 med svensk översättning.

Standarden ersätter SS-EN 10020, utgåva 1, SS-EN 10020/AC:1991, utgåva 1 och SS-EN 10020 T1, utgåva 1.

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Supersedes EN 10020:1988

English version

Definition and classification of grades of steel

Définition et classification des nuances d'acier Begriffsbestimmung für die Einteilung der Stähle

This European Standard was approved by CEN on 18 February 2000.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 BRUSSELS

Svensk version

Definition och klassificering av ståltyper

Définition et classification des
nuances d'acier

Definition and classification of
grades of steel

Begriffsbestimmung für die
Einteilung der Stähle

Denna standard är den officiella svenska versionen av EN 10020:2000. För översättningen svarar SIS.

Denna europastandard antogs av CEN den 18 februari 2000.

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CEN

European Committee for Standardization
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Foreword

This European Standard has been prepared by Technical Committee ECISS/TC 6 “Steels – Definition and classification”, the secretariat of which is held by AFNOR.

This European Standard replaces EN 10020:1988.

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 September 2000, and conflicting national standards shall be withdrawn at the latest by September 2000.

At the Co-ordination Committee (COCOR) meeting of May 31/June 1, 1995, ECISS decided to revise EN 10020:1988.

That standard used EURONORM 20:1974 as the basis for work, revising it to align EN 10020 as far as possible at that time :

- with the Harmonised System nomenclature of the World Customs Organisation (WCO) ;
- with ISO 4948-1 and ISO 4948-2 ;
- taking into account experience gained from using the EURONORM together with new developments in the steel industry.

This European standard is more closely aligned with the Harmonised System in that the same limit values have been adopted for alloy elements, together with deletion of the previous “70 % rule” for specified combinations of elements.

One main quality class in EN 10020:1988, base steels, has been deleted and merged with non alloy quality steels.

Further developments in the iron and steel industry and progress in European standardisation have also been taken into account.

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, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Förord

Denna europastandard har utarbetats av CEN/TC 6, Steels – Definition and classification. Sekretariatet hålls av AFNOR.

Denna standard ersätter EN 10020:1998.

Denna europastandard skall ges status av nationell standard, antingen genom att publicera en identisk text eller genom ikraftsättning senast september 2000, och motstridande nationella standarder skall dras in senast september 2000.

Vid kordineringskommitténs möte (COCOR) den 31 maj – 1juni 1995 beslutade ECISS att revidera EN 10020:1998.

Den standarden var baserad på EURONORM 20:1974. Reviderad med syfte att anpassa EN 10020 så långt som möjligt, vid den tiden:

- till Internationella tullunionens (WCO) Harmonised System Nomenclature (HS-nomenklaturen),
- till ISO 498-1 och ISO 498-2,
- med hänsyn tagen till erfarenhet från användning av euronormen tillsammans med utveckling inom stålindustrin.

Denna utgåva är mer anpassad till HS-nomenklaturen genom att samma gränser har satts för legeringsämnen och den tidigare 70 %-regeln för kombinationer av ämnen har strukits.

En huvudkvalitetsklass i EN 10020:1988, basstål har utgått och slagits samman med olegerade kvalitetsstål.

Ytterligare utveckling i järn- och stålindustrin och utveckling i europastandardiseringen har också tagits hänsyn till.

Enligt CEN/CENELECs interna bestämmelser anmodas följande länder att anta denna europastandard: Belgien, Danmark, Finland, Frankrike, Grekland, Irland, Island, Italien, Luxemburg, Nederländerna, Norge, Portugal, Schweiz, Spanien, Storbritannien, Sverige, Tjeckien, Tyskland och Österrike.

1 Scope

This European Standard defines the term "steel" (see clause 2) and classifies steel grades into :

- non alloy, stainless steel and other alloy steels by chemical composition (see clause 3) ;
- main quality classes (see clause 4) defined by main property or application characteristics for non alloy, stainless and other alloy steels.

2 Term and definition

For the purposes of this standard, the following term and definition apply :

2.1 steel

material which contains by mass more iron than any other single element, having a carbon content generally less than 2 % and containing other elements. A limited number of chromium steels may contain more than 2 % of carbon, but 2 % is the usual dividing line between steel and cast iron.

3 Classification by chemical composition

3.1 Applicable alloy contents

For European standards the classification given in the product standard or specification applies regardless of the steel which is actually produced, provided that the chemical composition complies with the requirements of the standard concerned.

3.1.1 Classification is based on the ladle analysis specified in the product standard or specification and is determined by the minimum value specified for each element.

3.1.2 Where for elements other than manganese a maximum value only is specified in the product standard or specification for the ladle analysis, a value of 70 % of this maximum value shall be taken for classification as set out in tables 1 and 2. For manganese see note a of table 1.

3.1.3 Where a product standard or specification is based on product analysis an equivalent ladle analysis is calculated using the permitted deviations from ladle analysis specified in the product standard or specification or corresponding European Standard or EURONORM.

3.1.4 In the absence of a product standard or specification or a precisely specified chemical composition, classification is based on the actual ladle analysis reported by the manufacturer.

3.1.5 The results of product analysis may deviate from those of the ladle analysis to an extent permitted by the appropriate product standard or specification (such deviations do not affect the classification of the steel as non alloy or alloy).

If the product analysis indicates a value, which would place the steel in a class other than intended, then its inclusion in the class originally intended shall be separately and reliably substantiated.

3.1.6 Composite or coated products are classified according to the specified chemical composition of the product, which has been coated or clad.

3.1.7 For each alloy element, the specified, calculated or actual ladle analysis value is expressed to the same number of decimal places as the corresponding limit value shown in table 1. For example in this European Standard a specified range of 0,3 % to 0,5 % corresponds to a range of 0,30 % to 0,50 %. Similarly a specified content of 2 % is taken to mean a content of 2,00 %.