

Metallic materials - Conversion of hardness values

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 18265:2004 sisaldab Euroopa standardi EN ISO 18265:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 20.02.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 18265:2004 consists of the English text of the European standard EN ISO 18265:2003.</p> <p>This document is endorsed on 20.02.2004 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 International Standard specifies the principles of the hardness values and gives general information on the use of conversion tables.</p>	<p>Scope:</p> <p>This International Standard specifies the principles of the hardness values and gives general information on the use of conversion tables.</p>
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ICS 77.040.01

Võtmesõnad:

ICS 77.040.01

English version

Metallic materials

Conversion of hardness values
(ISO 18265 : 2003)

Matériaux métalliques – Conversion
des valeurs de dureté
(ISO 18265 : 2003)

Metallische Werkstoffe – Umwertung
von Härtewerten (ISO 18265 : 2003)

This European Standard was approved by CEN on 2003-10-03.

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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CEN

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

Management Centre: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 18265 : 2003 Metallic materials – Conversion of hardness values,

which was prepared by ISO/TC 164 'Mechanical testing of metals' of the International Organization for Standardization, has been adopted by Technical Committee ECISS/TC 1 'Steels – Mechanical and physical tests', the Secretariat of which is held by AFNOR, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by May 2004 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 18265 : 2003 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

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Introduction

The hardness conversion values given in Table A.1 were obtained in interlaboratory tests by the *Verein Deutscher Eisenhüttenleute* (VDEh) (German Iron and Steel Institute) using verified and calibrated hardness testing machines. Statistically reliable information cannot be given on the uncertainty of these values because the test conditions were not reproducible, and the number of results used to calculate the mean hardness values is not known. The conversion values in Table A.1 are in accordance with the information presented in IC No. 3 (1980) and IC No. 4 (1982) of the European Coal and Steel Community, as well as in ISO 4964:1984 and ISO/TR 10108:1989.

Annexes C, D and E contain — in a revised format — the extensive results on the conversion of hardness values presented in TGL 43212/02 to 43212/04, standards published by the former East German standards body, the *Amt für Standardisierung, Meßwesen und Warenprüfung* (ASMW). The values presented in Annex B had also been determined by the ASMW, but were published in a report of the *Physikalisch-Technische Bundesanstalt* (PTB) ^[1], the German national institute for science and technology, not in a TGL standard.

The converted hardness values in the above-mentioned TGL standards were obtained in statistically reliable hardness and tensile tests. The hardness tests were performed using ASMW normal testing machines on plane-parallel, polished specimens of various materials in different heat treatment conditions. Tensile strength was tested on machines whose force measuring and extension measuring systems had been calibrated immediately before testing. The tensile test method used is equivalent to that specified in ISO 6892, and the calibration procedures conform with those specified in ISO 7500-1 and ISO 9513.

Users of this International Standard should take note of Clause 3, especially the concluding warning.

1 Scope

This International Standard specifies the principles of the conversion of hardness values and gives general information on the use of conversion tables.

The conversion tables in Annexes A to F apply to

- unalloyed and low-alloy steels and cast iron;
- steels for quenching and tempering;
- cold working steels;
- high speed steels;
- hardmetals;
- non-ferrous metals and alloys.

NOTE The conversion tables in Annexes B to E are based on empirical results which were evaluated by means of regression analysis. Such analysis was not possible in the case of the values given in Annex A because a sufficient number of results was not available.

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.

ISO 6506-1:1999, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 6507-1:1997, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 6507-2:1997, *Metallic materials — Vickers hardness test — Part 2: Verification of testing machines*

ISO 6508-1:1999, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 6508-2:1999, *Metallic materials — Rockwell hardness test — Part 2: Verification and calibration of testing machines (scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 6892:1998, *Metallic materials — Tensile testing at ambient temperature*

ISO 7500-1:—¹⁾, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 9513:1999, *Metallic materials — Calibration of extensometers used in uniaxial testing*

¹⁾ To be published. (Revision of ISO 7500-1:1999)