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Metallic materials — Knoop hardness test —

Part 1: Test method

*Matériaux métalliques — Essai de dureté Knoop —
Partie 1: Méthode d'essai*



Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 3, *Hardness testing*.

This second edition cancels and replaces the first edition (ISO 4545-1:2005), which has been technically revised.

The main changes compared to the previous edition are as follows:

- all references have been removed of indentation diagonals <0,020 mm;
- the resolution requirements have been defined for the measuring system;
- the lower test force limit of the Knoop hardness test has been expanded to 0,009 807 N;
- the requirements for the periodic (weekly or daily) verifications of the testing machine have been defined as normative, the maximum permissible bias value has been revised, and the requirements for the maximum permissible error in measuring a reference indentation have been revised;
- the recommendations for inspection and monitoring of the indenter have been added (moved from ISO 4545-2);
- the requirements have been revised for the approach velocity of the indenter prior to contact with the sample surface;
- the timing requirements for the test force application and the duration at maximum test force are revised to indicate target time values;
- [Figure 3](#) has been added illustrating the requirements for the minimum distance between indentations; the distances have been stated with respect to the indentation centres rather than the indentation limits, but the requirements have not changed;
- the requirements have been added to the test report for reporting the test date and any hardness conversion method used;

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- [Annexes C, D](#) and [E](#) have been added concerning Knoop hardness measurement traceability, the CCM — Working group on hardness and adjustment of Köhler illumination systems, respectively.

A list of all parts in the ISO 4545 series can be found on the ISO website.