
**Metallic materials — Vickers
hardness test —**

**Part 2:
Verification and calibration of testing
machines**

Matériaux métalliques — Essai de dureté Vickers —

Partie 2: Vérification et étalonnage des machines d'essai



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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This fourth edition cancels and replaces the third edition (ISO 6507-2:2005), which has been technically revised.

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

- all references of indentation diagonals, $<0,020$ mm, have been removed;
- requirements for the calibration and verification of the measuring system have been revised;
- requirements for the maximum permissible error in measuring a reference indentation have been revised;
- recommendations for inspection and monitoring of the indenter have been moved to ISO 6507-1;
- requirements have been added to the test report for reporting the hardness values of reference blocks used;
- [Annex A](#) has been revised.

A list of all parts in the ISO 6507 series can be found on the ISO website.

Metallic materials — Vickers hardness test —

Part 2: Verification and calibration of testing machines

1 Scope

This document specifies a method of verification and calibration of testing machines and diagonal measuring system for determining Vickers hardness in accordance with ISO 6507-1.

A direct method of verification and calibration is specified for the testing machine, indenter and the diagonal length measuring system. An indirect verification method using reference blocks is specified for the overall checking of the machine.

If a testing machine is also to be used for other methods of hardness testing, it shall be verified independently for each method.

This document is also applicable to portable hardness testing machines but not applicable to hardness testing machines based on different measurement principles, e.g. ultrasonic impedance method.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 376, *Metallic materials — Calibration of force-proving instruments used for the verification of uniaxial testing machines*

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

ISO 6507-3, *Metallic materials — Vickers hardness test — Part 3: Calibration of reference blocks*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 General conditions

Before a Vickers hardness testing machine is verified, the machine shall be checked to ensure that it is properly set up in accordance with the manufacturer's instructions.

Especially, it should be checked that:

- a) the plunger holding the indenter is capable of sliding in its guide without any friction or excessive side play;
- b) the indenter-holder is firmly mounted in the plunger;