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Metallic materials — Knoop hardness test —

Part 2: Verification and calibration of testing machines

Matériaux métalliques — Essai de dureté Knoop —

Partie 2: Vérification et étalonnage des machines 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 4545-2 was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 3, *Hardness testing*.

ISO 4545-2 cancels and replaces ISO 4546:1993, which has been technically revised.

ISO 4545 consists of the following parts, under the general title *Metallic materials — Knoop hardness test*:

— *Part 1: Test method*

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

— *Part 3: Calibration of reference blocks*

— *Part 4: Table of hardness values*

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Metallic materials — Knoop hardness test —

Part 2:
Verification and calibration of testing machines

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1 Scope

This part of ISO 4545 specifies the method of verification of testing machines for determining Knoop hardness for metallic materials in accordance with ISO 4545-1-1. It covers test forces from 0,098 07 N to 19,614 N. The method is recommended only for indentations with diagonals $\geqslant$ 0,020 mm.

It specifies a direct verification method for checking the main functions of the machine, and an indirect verification method suitable for the overall checking of the machine. The indirect verification method may be used on its own for periodic routine checking of the machine in service.

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

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 376:2004, *Metallic materials — Calibration of force-proving instuments used for the verification of uniaxial testing machines*

ISO 4545-1:2005, *Metallic materials — Knoop hardness test — Part 1xTest method*

ISO 4545-3, *Metallic materials — Knoop hardness test — Part 3: Calibration of reference blocks*

3 General conditions

Before a Knoop hardness testing machine is verified, it 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 mount holding the indenter is capable of moving freely without any friction or excess side play;

b) the indenter is firmly mounted in the mount;

c) the test force can be applied and removed without shock or vibration and in such a manner that the readings are not influenced;

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