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Metallic materials — Hardness test — Calibration of standardized blocks to be used for Rockwell superficial hardness testing machines (scales 15N, 30N, 45N, 15T, 30T and 45T)

*Matériaux métalliques — Essai de dureté — Étalonnage des blocs de référence
à utiliser pour les machines d'essai de dureté superficielle Rockwell (échelles 15N,
30N, 45N, 15T, 30T et 45T)*



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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 1355 was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*.

It cancels and replaces ISO Recommendation R 1355: 1970, of which it constitutes a technical revision.

Annex A forms an integral part of this International Standard.

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Metallic materials — Hardness test — Calibration of standardized blocks to be used for Rockwell superficial hardness testing machines (scales 15N, 30N, 45N, 15T, 30T and 45T)

1 Scope

This International Standard specifies a method for the calibration of standardized blocks to be used in Rockwell superficial hardness testing machines (scales 15N, 30N, 45N, 15T, 30T and 45T) for the indirect verification of these machines, as described in ISO 1079.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 468 : 1982, *Surface roughness — Parameters, their values and general rules for specifying requirements.*

ISO 1024 : 1989, *Metallic materials — Hardness test — Rockwell superficial test (scales 15N, 30N, 45N, 15T, 30T and 45T).*

ISO 1079 : 1989, *Metallic materials — Hardness test — Verification of Rockwell superficial hardness testing machines (scales 15N, 30N, 45N, 15T, 30T and 45T).*

ISO 6507-1 : 1982, *Metallic materials — Hardness test — Vickers test — Part 1: HV 5 to HV 100.*

3 Manufacture

3.1 The block shall be specially prepared and the attention of the manufacturer is drawn to the need to use a manufacturing process which will give the necessary homogeneity, stability of structure and uniformity of hardness.

3.2 Each metal block to be standardized shall be of a thickness not less than 6 mm.

3.3 The standardized blocks shall be free of magnetism. It is recommended that the manufacturer ensures that the blocks, if of steel, have been demagnetized at the end of the manufacturing process (before calibration).

3.4 The maximum deviation in flatness of the surfaces shall not exceed 0,010 mm. The bottom of the block shall not be convex.

The maximum error in parallelism shall not exceed 0,020 mm/50 mm.

3.5 The test surface shall be free from scratches which interfere with the measurement of the indentations. The surface roughness R_a shall not exceed 0,3 μm for the test surface and 0,8 μm for the bottom surface; sampling length $l = 0,80$ mm (see ISO 468).

3.6 To permit checking that no material is subsequently removed from the standardized block, its thickness at the time of standardization shall be marked on it to the nearest 0,1 mm, or an identifying mark shall be made on the test surface (see clause 8).

4 Standardizing machine

4.1 In addition to fulfilling the general requirements specified in ISO 1079 the standardizing machine shall also meet the requirements given in 4.2.

4.2 The machine shall be verified directly. Direct verification involves

- verification of the test force (see 4.2.1);
- verification of the indenter (see 4.2.2 and 4.2.3);
- verification of the measuring device (see 4.2.4).