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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION
R 640

CALIBRATION OF STANDARDIZED BLOCKS TO BE USED FOR VICKERS HARDNESS TESTING MACHINES

1st EDITION
November 1967

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BRIEF HISTORY

The ISO Recommendation R 640, *Calibration of Standardized Blocks to be Used for Vickers Hardness Testing Machines*, was drawn up by Technical Committee ISO/TC 17, *Steel*, the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question by the Technical Committee began in 1961 and led, in 1965, to the adoption of a Draft ISO Recommendation.

In February 1966, this Draft ISO Recommendation (No. 923) which superseded Draft ISO Recommendation No. 524, was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies:

Argentina	Hungary	Republic of South Africa
Australia	India	Romania
Austria	Israel	Spain
Belgium	Italy	Sweden
Canada	Japan	Turkey
Chile	Korea, Rep. of	U.A.R.
Czechoslovakia	Mexico	United Kingdom
Denmark	Netherlands	U.S.A.
Finland	New Zealand	U.S.S.R.
France	Norway	Yugoslavia
Germany	Poland	

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in November 1967, to accept it as an ISO RECOMMENDATION.

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ISO Recommendation R 640 November 1967

CALIBRATION OF STANDARDIZED BLOCKS TO BE USED FOR VICKERS HARDNESS TESTING MACHINES

1. SCOPE

This ISO Recommendation applies to the calibration of standardized blocks for the indirect verification of hardness testing machines as described in ISO Recommendation R 146,* *Verification of Vickers Hardness Testing Machines*. It does not necessarily apply to the calibration of test blocks which are used in the routine checking of the testing machine by the user, but it is not intended to preclude the use of blocks calibrated in accordance with this ISO Recommendation for the routine checking of a machine.**

2. MANUFACTURE

2.1 Each metal block to be standardized should be of a thickness not less than 6 mm (1/4 in).

2.2 The block should be especially 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 surface hardness. It is recommended that the fineness and regularity of grain and the uniformity of the metallurgical structure be verified by microscopical examination. A microscopical examination may also be made by the standardizing authority.

2.3 The standardized blocks should not be magnetized. It is recommended that the manufacturer should ensure that the blocks, if of steel, have been demagnetized.

2.4 The upper and lower surfaces of the standardized block should be flat within 0.005 mm and the parallelism of the block should be such that the thickness does not vary by more than 0.010 mm per 50 mm.

2.5 The lower surface of the standardized block should have a fine ground finish.

2.6 The test surface (upper surface) should be highly polished and its surface roughness should not exceed 0.0001 mm (centre line average). It should also be free from scratches which interfere with the measurement of the indentations.

2.7 To permit checking that no material is subsequently removed from the standardized block, its thickness at the time of standardization should be marked on it to the nearest 0.01 mm (0.0004 in), or an official mark should be made on the test surface (see section 13).

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* 2nd edition, at present Draft ISO Recommendation No. 922.

** Test blocks that are used in routine checking of the testing machine may be calibrated, using the load duration specified in clause 4.2 of ISO Recommendation R 81 (2nd edition - 1967), *Vickers Hardness Test for Steel (Load 5 to 100 kgf)*.

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