

# ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

## ISO RECOMMENDATION R 156

### VERIFICATION OF BRINELL HARDNESS TESTING MACHINES

2nd EDITION

November 1967

This second edition supersedes the first edition.

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## BRIEF HISTORY

The ISO Recommendation R 156, *Calibration of Brinell 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 1953 and led, in 1958, to the adoption of a Draft ISO Recommendation.

In January 1959, this Draft ISO Recommendation (No. 275) was circulated to all the ISO Member Bodies for enquiry. It was approved by 26 Member Bodies. Two Member Bodies opposed the approval of the Draft: Australia and New Zealand.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council which decided, in April 1960, to accept it as an ISO RECOMMENDATION.

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## BRIEF HISTORY CONCERNING THE 2nd EDITION

Working Group ISO/TC 17/WG 1 was entrusted, in 1961, by the Technical Committee ISO/TC 17, *Steel*, with the preparation of the Draft Revision of ISO Recommendation R 156-1960. This work led, in 1965, to the adoption of a Draft Revision.

The new title, *Verification of Brinell Hardness Testing Machines*, supersedes the title of the first edition, *Calibration of Brinell Hardness Testing Machines*; some amendments were made to the text.

In February 1966, this Draft Revision (No. 925) 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              | Romania        |
| Australia      | India                | Spain          |
| Austria        | Israel               | Sweden         |
| Belgium        | Italy                | Switzerland    |
| Brazil         | Japan                | Turkey         |
| Canada         | Korea, Rep. of       | U.A.R.         |
| Chile          | Netherlands          | United Kingdom |
| Czechoslovakia | New Zealand          | U.S.A.         |
| Denmark        | Norway               | U.S.S.R.       |
| France         | Poland               | Yugoslavia     |
| Germany        | Rep. of South Africa |                |

No Member Body opposed the approval of the Draft.

The Draft Revision of ISO Recommendation R 156-1960 was then submitted to the ISO Council which decided, in November 1967, to accept it.

The present edition (2nd edition) embodies this revision.

## VERIFICATION OF BRINELL HARDNESS TESTING MACHINES

### 1. SCOPE

This ISO Recommendation applies to the verification of testing machines for determining Brinell hardness in accordance with ISO Recommendation R 79, \* *Brinell Hardness Test for Steel*.

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

It describes the indirect method, which is suitable for machines in service, and the direct method, which is suitable for the initial verification of new machines by the manufacturer and for the verification of rebuilt machines.

### 2. DIRECT VERIFICATION

Direct verification involves

- (1) verification of the load-applying mechanism (see clause 2.1),
- (2) verification of the steel balls (see clause 2.2) and
- (3) verification of the measuring device (see clause 2.3).

Before verification is carried out, certain details of the testing machine should be checked (see Annex).

#### 2.1 Verification of the load-applying mechanism

- 2.1.1 The verification of the load-applying mechanism at the required loads should be carried out either by means of standardized weights or by means of an elastic proving device or proving levers.
- 2.1.2 Each test load should be measured and, wherever possible, this should be done at not less than three positions of the plunger throughout its range of movement.
- 2.1.3 The test load should be measured by one of the following three methods:
  - (a) balancing against standardized weights accurate to  $\pm 0.1\%$ , or

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\* 2nd edition, at present Draft ISO Recommendation No. 924.