

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 716

VERIFICATION OF ROCKWELL B AND C SCALE

HARDNESS TESTING MACHINES

1st EDITION
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BRIEF HISTORY

The ISO Recommendation R 716, *Verification of Rockwell B and C scale 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, which replaced Draft ISO Recommendation No. 522.

In March 1966, this Draft ISO Recommendation (No. 928) 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	Israel	Sweden
Austria	Italy	Switzerland
Belgium	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.
Finland	Portugal	Yugoslavia
France	Romania	
Germany	South Africa,	
Hungary	Rep. of	
India	Spain	

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 May 1968, to accept it as an ISO RECOMMENDATION.

VERIFICATION OF ROCKWELL B AND C SCALE HARDNESS TESTING MACHINES

1. SCOPE

This ISO Recommendation applies to the verification of testing machines for determining Rockwell hardness in accordance with ISO Recommendation R 80,* *Rockwell hardness test (B and C scales) for steel*.

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

- (a) verification of the load-applying mechanism (see clause 2.1),
- (b) verification of the indenter (see clause 2.2),
- (c) 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 A).

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 (masses) or by means of an elastic device or proving levers.
- 2.1.2 The preliminary load and each total 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 loads should be measured by one of the following three methods :
 - (a) balancing against standardized weights (masses) accurate to $\pm 0.1\%$;
 - (b) balancing against a load, accurate to $\pm 0.2\%$, applied by means of standardized weights (masses) with mechanical advantage;
 - (c) measuring the applied load by means of the deformation of an elastic device which has been previously calibrated to an accuracy of $\pm 0.2\%$.
- 2.1.4 Three readings should be taken for each load at each position of the plunger (see clause 2.1.2). Immediately before each reading is taken, the plunger should have been moved in the same direction as during testing.

* 2nd edition, 1968.