

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1024

ROCKWELL SUPERFICIAL HARDNESS TEST

(N AND T SCALES)

FOR STEEL

1st EDITION

March 1969

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BRIEF HISTORY

The ISO Recommendation R 1024, *Rockwell superficial hardness test (N and T scales) for steel*, 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 led, in 1967, to the adoption of a Draft ISO Recommendation.

In March 1968, this Draft ISO Recommendation (No. 1353) 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 :

Australia	Germany	South Africa, Rep. of
Austria	Hungary	Spain
Belgium	India	Sweden
Brazil	Israel	Switzerland
Canada	Italy	Thailand
Chile	Korea, Dem. P. Rep. of	Turkey
Czechoslovakia	Netherlands	U.A.R.
Denmark	New Zealand	United Kingdom
Finland	Norway	U.S.A.
France	Poland	

One Member Body opposed the approval of the Draft :

Romania

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council which decided, in March 1969, to accept it as an ISO RECOMMENDATION.

ROCKWELL SUPERFICIAL HARDNESS TEST
(N AND T SCALES)
FOR STEEL

1. PRINCIPLE OF TEST

The test consists in forcing an indenter of standard type (cone or ball) into the surface of a test piece in two operations and measuring the permanent increase e of the depth of indentation of this indenter under the conditions specified below.

The unit of measurement for e is 0.001 mm, from which a number known as the Rockwell superficial hardness is deduced.

2. SYMBOLS AND DESIGNATIONS

TABLE 1 – Test with diamond cone (Rockwell N)

Number	Symbol	Designation
1	—	Angle at the tip of the diamond cone (120°)
2	—	Radius of curvature at the tip of the cone (0.200 mm)
3	F_o	Preliminary load = 3 kgf (29.42 N)
4	F_1	Additional load = 12, 27 or 42 kgf (117.68, 264.78 or 411.88 N)
5	F	Total load = $F_o + F_1 = 3 + 12 = 15$ kgf (147.1 N), or 3 + 27 = 30 kgf (294.2 N), or 3 + 42 = 45 kgf (441.3 N)
6	—	Depth of indentation under preliminary load before application of additional load
7	—	Increase in depth of indentation under additional load
8	e	Permanent increase of depth of indentation under preliminary load after removal of additional load, this increase being expressed in units of 0.001 mm
9	HRFN*	Rockwell superficial hardness $FN = 100 - e$

* i.e. HR 15 N, HR 30 N or HR 45 N.

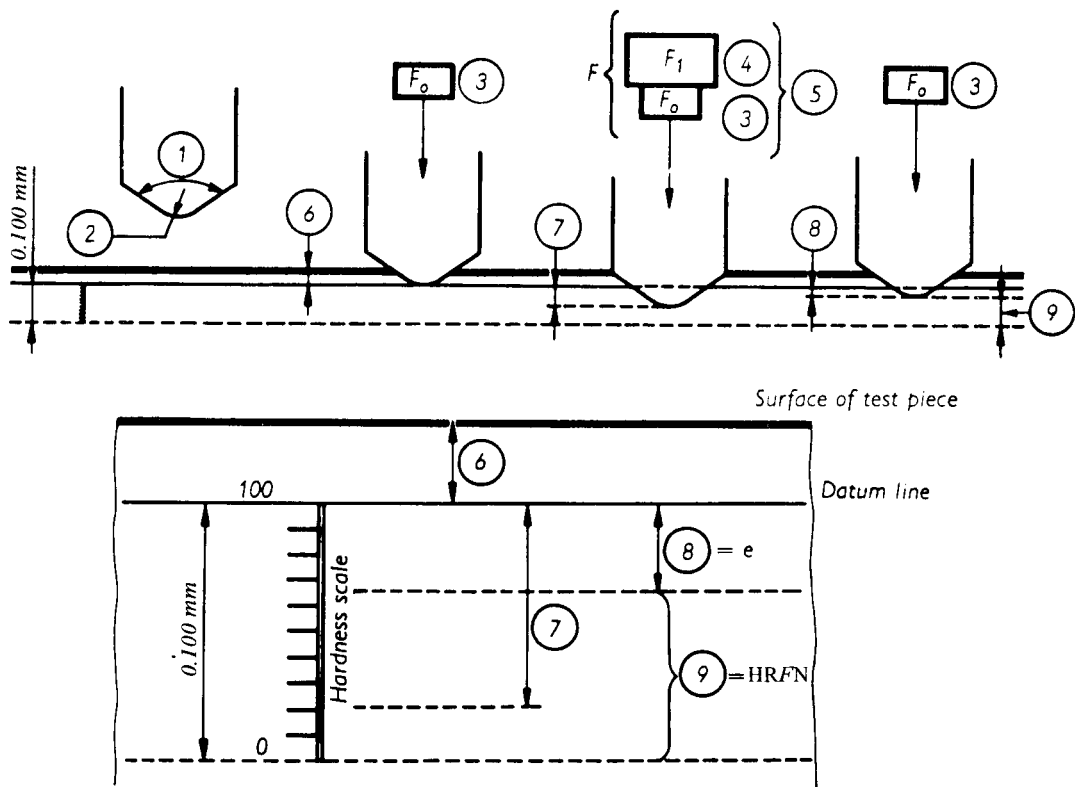


FIG. 1