
International Standard



3738 / 1

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Hardmetals — Rockwell hardness test (scale A) — Part 1 : Test method

Métaux-durs — Essai de dureté Rockwell (échelle A) — Partie 1 : Méthode d'essai

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Foreword

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International Standard ISO 3738/1 was developed by Technical Committee ISO/TC 119, *Powder metallurgy*, and was circulated to the member bodies in February 1982.

It has been approved by the member bodies of the following countries :

Brazil	Ireland	Spain
Bulgaria	Italy	Sweden
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Czechoslovakia	Mexico	USA
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The member body of the following country expressed disapproval of the document on technical grounds :

United Kingdom

This International Standard cancels and replaces International Standard ISO 3738-1976 of which it constitutes a technical revision.

Hardmetals — Rockwell hardness test (scale A) — Part 1 : Test method

1 Scope and field of application

This part of ISO 3738 specifies the Rockwell hardness test (scale A) for hardmetals.

2 References

ISO/R 80, *Rockwell hardness test (B and C scales) for steel.*

ISO/R 716, *Verification of Rockwell B and C scale hardness testing machines.*

3 Principle

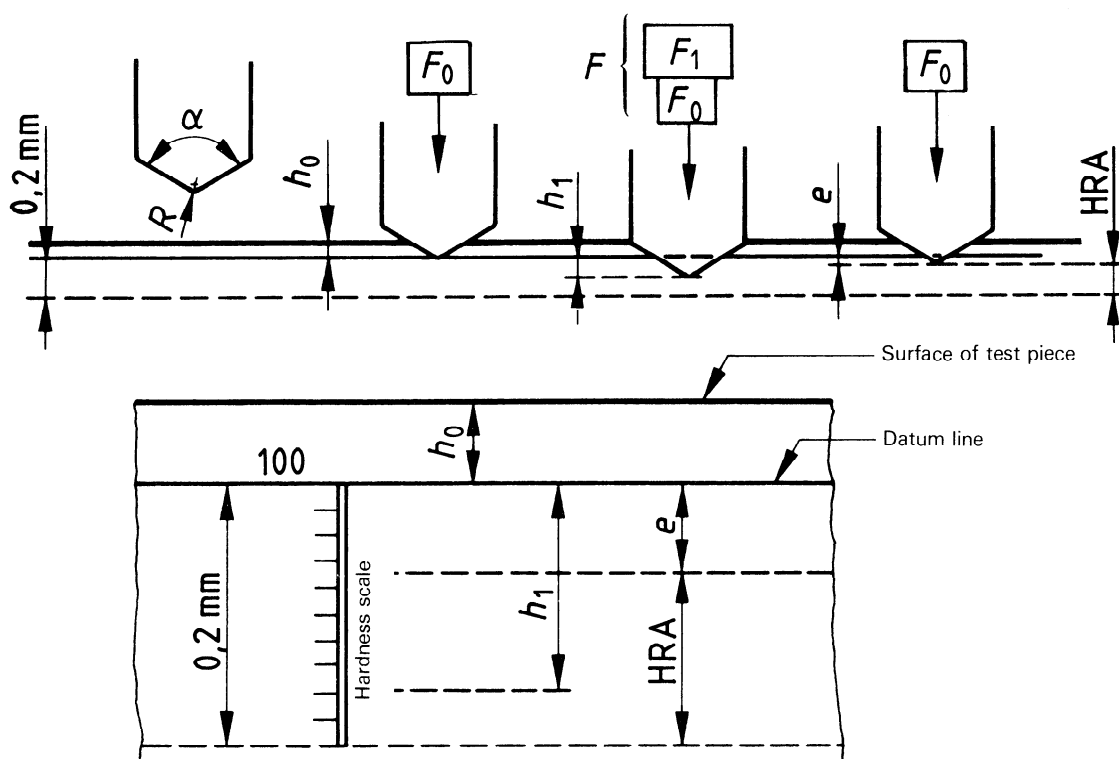
Forcing a conical diamond indenter into a test piece in two operations and measurement of the permanent increase, e , of the depth of indentation by means of a depth gauge under defined conditions.

4 Symbols, designations and values of parameters

See table 1 and the figure.

Table 1

Symbol	Designation
α	Angle of the diamond cone ($120 \pm 0,5^\circ$)
R	Radius of curvature at the tip of the cone ($0,2 \pm 0,002$ mm)
F_0	Preliminary test force ($98,07 \pm 1,96$ N)
F_1	Additional test force (490,3 N)
F	Total test force ($98,07 + 490,3 = 588,4 \pm 3,92$ N)
h_0	Depth of indentation under preliminary test force before application of the additional force
h_1	Increase in depth of indentation under additional force
e	Permanent increase in depth of indentation under preliminary force after removal of additional force, expressed in units of 0,002 mm
HRA	Rockwell hardness A = $100 - e$



Figure