



# SLOVENSKI STANDARD SIST EN ISO 3738-1:2010

01-julij-2010

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**Trdine - Preskus trdote po Rockwellu (skala A) - 1. del: Preskusne metode (ISO 3738-1:1982)**

Hardmetals - Rockwell hardness test (scale A) - Part 1: Test method (ISO 3738-1:1982)

Hartmetalle - Rockwell-Härteprüfung (Skala A) - Teil 1: Prüfverfahren (ISO 3738-1:1982)

Métaux-durs - Essai de dureté Rockwell (échelle A) - Partie 1: Méthode d'essai (ISO 3738-1:1982)

**STANDARD PREVIEW**  
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Ta slovenski standard je istoveten z: **EN ISO 3738-1:2010**

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**ICS:**

77.040.10	Mehansko preskušanje kovin	Mechanical testing of metals
77.160	Metalurgija prahov	Powder metallurgy

**SIST EN ISO 3738-1:2010**

**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 3738-1**

April 2010

ICS 77.040.10; 77.160

English Version

## Hardmetals - Rockwell hardness test (scale A) - Part 1: Test method (ISO 3738-1:1982)

Métaux-durs - Essai de dureté Rockwell (échelle A) - Partie 1: Méthode d'essai (ISO 3738-1:1982)

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

The text of ISO 3738-1:1982 has been prepared by Technical Committee ISO/TC 119 "Powder metallurgy" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 3738-1:2010.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2010, and conflicting national standards shall be withdrawn at the latest by October 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

### Endorsement notice

The text of ISO 3738-1:1982 has been approved by CEN as a EN ISO 3738-1:2010 without any modification.

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International Standard



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

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

First edition — 1982-10-15

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UDC 669.018.25 : 620.178.152.42

Ref. No. ISO 3738/1-1982 (E)

Descriptors : powder metallurgy, hardmetals, tests, mechanical tests, hardness tests, Rockwell hardness.

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

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 :  
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Brazil	Ireland	Spain
Bulgaria	Italy	Sweden
China	Korea, Rep. of	Switzerland
Czechoslovakia	Mexico	USA
Egypt, Arab Rep. of	Poland	USSR
France	Romania	
Germany, F. R.	South Africa, Rep. of	

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

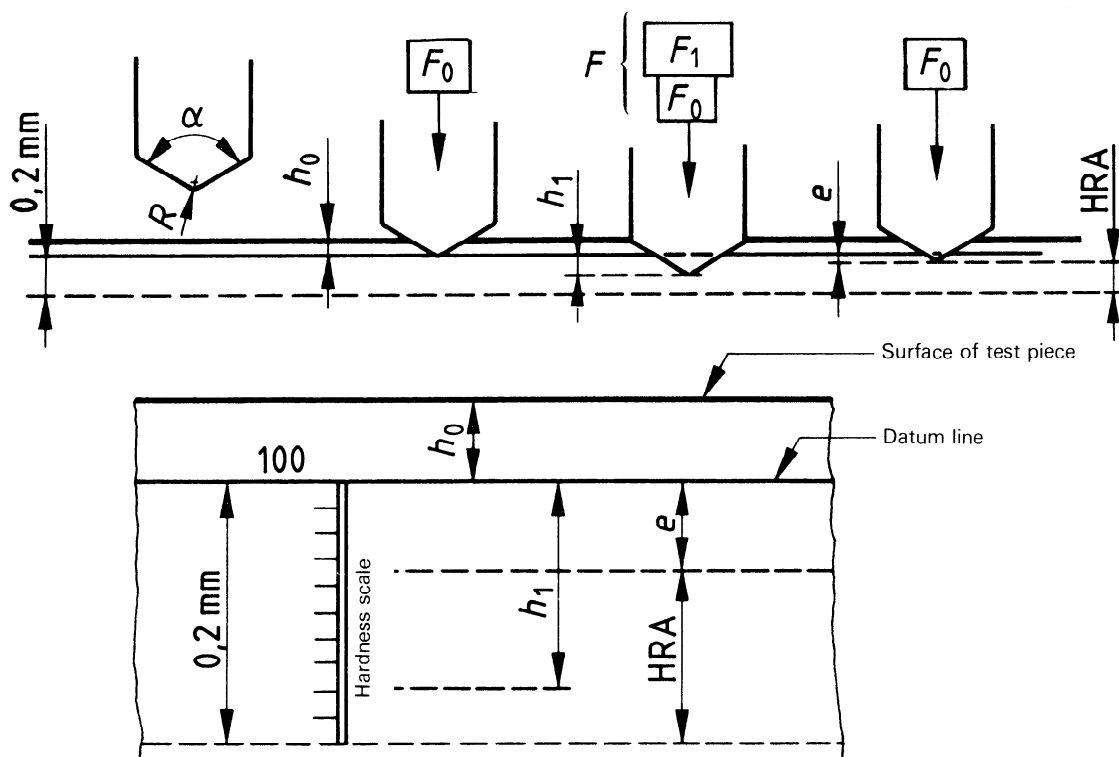
Forcing a conical diamond indenter into a test piece in two operations and measurement of the permanent increase  $e$ , of the depth of indentation by means of a depth gauge under defined conditions.

## 4 Symbols, designations and values of parameters

See table 1 and the figure.

Table 1

Symbol	Designation
$\alpha$	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