INTERNATIONAL STANDARD 3326

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

Hardmetals — Determination of (the magnetization) coercivity

Métaux durs — Détermination de la coercitivité (d'aimantation)

First edition — 1975-02-15

UDC 669-492.8 : 620.179.14

Ref. No. ISO 3326-1975 (E)

Descriptors : sintered products, hardmetals, tests, magnetic tests, magnetic properties, coercive force.

FOREWORD

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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 3326 was drawn up by Technical Committee ISO/TC 119, *Powder metallurgical materials and products,* and circulated to the Member Bodies in December 1973.

It has been approved by the Member Bodies of the following countries :

Austria	Ireland	Thailand
Bulgaria	Italy	Turkey
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Chile	Romania	U.S.A.
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Finland	Spain	Yugoslavia
France	Sweden	

The Member Body of the following country expressed disapproval of the document on technical grounds :

Japan

Printed in Switzerland

Hardmetals — Determination of (the magnetization) coercivity

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method of determining (the magnetization) coercivity of hardmetals containing not less than 3 % of a ferromagnetic binder by mass.

2 REFERENCE

ISO . . ., *Hardmetals — Sampling and preparation of test pieces.* [1)]

3 PRINCIPLE

Magnetization of a test piece in a d.c. magnetic field up to the state of technical saturation; determination of the coercivity H_{cM} of reverse direction which is necessary for complete demagnetization of the test piece ($M = 0$).

4 SYMBOLS AND DESIGNATIONS

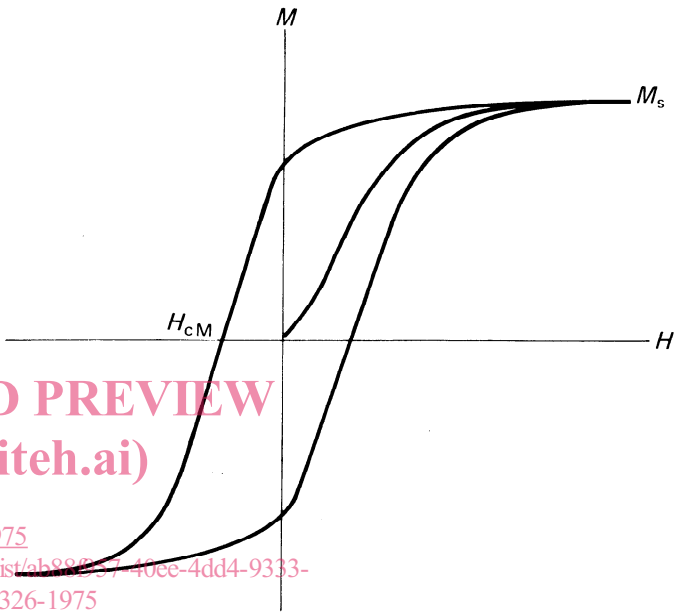
Coercivity H_{cM}, in amperes per metre, as applied is the value of the reversed magnetic field required to reduce the intensity of magnetization in the test piece to zero. (See figure.)

5 APPARATUS

Apparatus capable of the d.c. magnetization of the test piece up to the state of technical saturation in the d.c. magnetic field and providing its demagnetization.

The apparatus shall have an accuracy of 0,2 kA/m for coercivity values up to 20 kA/m and 1 % for values over 20 kA/m.

Symbol	Designation	Unit
H	Magnetic field strength	kA/m
M	Magnetization of the test piece	kA/m
M_s	Magnetization at the technical saturation	kA/m
H_{cM}	(Magnetization) coercivity	kA/m



FIGURE

In order to reach technical saturation, the value of the magnetic field strength shall be 200 to 400 kA/m depending on the type of apparatus used.

6 SAMPLING

Sampling shall be carried out in accordance with ISO . . .

7 PROCEDURE

7.1 Place the test piece in a d.c. magnetic field with its longest dimension in the direction of the field and magnetize it up to technical saturation.

7.2 Demagnetize the test piece in the d.c. magnetic field of reverse direction. The speed of demagnetization must be sufficiently low to give the accuracy specified in clause 5.

7.3 Determine the coercivity H_{cM} necessary for demagnetization of the test piece.

1) In preparation.

8 EXPRESSION OF RESULTS

The result of the determination of coercivity H_{cM} shall be rounded to the nearest 0,1 kA/m.

9 TEST REPORT

The test report shall include the following information :

a) reference to this International Standard;

b) all details necessary for identification of the test sample;

c) the result obtained;

d) all operations not specified by this International Standard, or regarded as optional;

e) details of any occurrence which may have affected the result.