SLOVENSKI STANDARD
SIST EN 60404-5:2015

01-september-2015

Nadomešča:
SIST EN 60404-5:2008

Magnetni materiali - 5. del: Materiali za permanentne (trdomagnetne) magnete - Metode za meritve magnetnih lastnosti

Magnetic materials - Part 5: Permanent magnet (magnetically hard) materials - Methods of measurement of magnetic properties

Magnetische Werkstoffe - Teil 5: Dauermagnet- (hartmagnetische) Werkstoffe - Verfahren zur Messung magnetischer Eigenschaften

Matériaux magnétiques - Partie 5: Aimants permanents (magnétiques durs) - Méthodes de mesure des propriétés magnétiques

Ta slovenski standard je istoveten z: **EN 60404-5:2015**

ICS:

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities
29.030	Magnetni materiali	Magnetic materials

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English Version

Magnetic materials - Part 5: Permanent magnet (magnetically hard) materials - Methods of measurement of magnetic properties (IEC 60404-5:2015)

Matériaux magnétiques - Partie 5: Aimants permanents (magnétiques durs) - Méthodes de mesure des propriétés magnétiques (IEC 60404-5:2015)

Magnetische Werkstoffe - Teil 5: Dauermagnet-(hartmagnetische) Werkstoffe - Verfahren zur Messung magnetischer Eigenschaften (IEC 60404-5:2015)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of document 68/497/FDIS, future edition 3 of IEC 60404-5, prepared by IEC/TC 68 "Magnetic alloys and steels" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60404-5:2015.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-02-21
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-05-21

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The text of the International Standard IEC 60404-5:2015 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated :

IEC 60404-8-1	NOTE	Harmonized as EN 60404-8-1.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050	series	International electrotechnical vocabulary	-	-

IEC 60404-5

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Magnetic materials –
Part 5: Permanent magnet (magnetically hard) materials – Methods of measurement of magnetic properties

Matériaux magnétiques –
Partie 5: Aimants permanents (magnétiques durs) – Méthodes de mesure des propriétés magnétiques

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MAGNETIC MATERIALS –

Part 5: Permanent magnet (magnetically hard) materials – Methods of measurement of magnetic properties

FOREWORD

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International Standard IEC 60404-5 has been prepared by IEC technical committee 68: Magnetic alloys and steels.

This third edition cancels and replaces the second edition published in 1993 and Amendment 1:2007. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- adaption of the measurement methods and test conditions to newly introduced magnetically hard materials with coercivity values H_{cJ} higher than 2 MA/m;
- update of the temperature conditions to allow the measurement of new materials with high temperature coefficients.

The text of this standard is based on the following documents:

FDIS	Report on voting
68/497/FDIS	68/505/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60404 series, published under the general title *Magnetic materials*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The previous edition of IEC 60404-5 was issued in October 1993 and amended in 2007. Since then, new applications of NdFeB sintered magnetic materials with intrinsic coercivity, H_{cJ}, higher than 2 MA/m for hybrid electric vehicles and fully electric vehicles have appeared. Thus, IEC TC68 decided in 2011 at their meeting in Ghent to revise IEC 60404-5.

For the measurement of the coercivity relating to polarization, H_{cJ}, at values higher than 2 MA/m and the measurement of magnetic properties at elevated temperatures, the methods described in the non-normative Technical Reports IEC TR 61807 and IEC TR 62331 can be considered.

The ambient temperature previously recommended was (23 ± 5) °C. However, for permanent magnet materials such as NdFeB and hard ferrites that have large temperature coefficients, it is strongly recommended that the ambient temperature should be controlled within this range to ± 1 °C or better. It is desirable to apply this temperature recommendation for other hard magnet materials. This recommendation was already included in IEC 60404-5:1993/AMD1:2007.