ICS 17.220.20, 29.030 SLOVENSKÁ TECHNICKÁ NORMA Marec 2023

STN	**Magnetické materiály Časť 3: Metódy merania magnetických vlastností oceľových pásov a plechov pre elektrotechniku pomocou jednoduchej skúšky plechu**	**STN EN IEC 60404-3 34 5884**

Magnetic materials - Part 3: Methods of measurement of the magnetic properties of electrical steel strip and sheet by means of a single sheet tester

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/23

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN IEC 60404-3

December 2022

ICS 29.030; 17.220.20

English Version

Magnetic materials - Part 3: Methods of measurement of the magnetic properties of electrical steel strip and sheet by means of a single sheet tester (IEC 60404-3:2022)

Matériaux magnétiques - Partie 3: Méthodes de mesure des caractéristiques magnétiques des bandes et tôles magnétiques en acier à l'aide de l'essai sur tôle unique (IEC 60404-3:2022)

Magnetische Werkstoffe - Teil 3: Verfahren zur Bestimmung der magnetischen Eigenschaften von Elektroband und -blech mit Hilfe eines Tafelmessgerätes (IEC 60404-3:2022)

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European foreword

The text of document 68/699/CDV, future edition 3 of IEC 60404-3, prepared by IEC/TC 68 "Magnetic alloys and steels" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60404-3:2022.

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)	2023-09-13
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In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60404-8-7:2020 NOTE Harmonized as EN 10107:2022 (modified)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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NOTE 1 Where 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 60050-121	-	International Electrotechnical Vocabulary - Part 121: Electromagnetism	-	-
IEC 60050-221	-	International Electrotechnical Vocabulary. Chapter 221: Magnetic materials and components	-	-
IEC 60404-13	-	Magnetic materials - Part 13: Methods of measurement of resistivity, density and stacking factor of electrical steel strip and sheet	EN IEC 60404-13	-

IEC 60404-3

Edition 3.0 2022-11

INTERNATIONAL STANDARD

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IEC 60404-3:2022-11(en-fr)

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IEC 60404-3

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MAGNETIC MATERIALS –

Part 3: Methods of measurement of the magnetic properties of electrical steel strip and sheet by means of a single sheet tester

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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IEC 60404-3 has been prepared by IEC technical committee 68: Magnetic alloys and steels. It is an International Standard.

This third edition cancels and replaces the second edition published in 1992, Amendment 1:2002 and Amendment 2:2009. This edition constitutes a technical revision.

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

a) Annex A was revised. The method of determining the yokes’ lamination resistance was added to Annex A;
b) Annex B of the consolidated version of 2010 referred to calibration of the SST using the Epstein method. It was cancelled;
c) Annex B (new), Annex C and Annex D were revised, they are for information only;
d) Annex C was modified taking account of the new situation regarding P and R grades;
e) Annex D was amended by addition of Clause D.4 on the numerical air flux compensation.

The text of this International Standard is based on the following documents:

Draft	Report on voting
68/699/CDV	68/710/RVC

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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 document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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

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MAGNETIC MATERIALS –

Part 3: Methods of measurement of the magnetic properties of electrical steel strip and sheet by means of a single sheet tester

1 Scope

This part of IEC 60404 is applicable to grain-oriented and non-oriented electrical steel strip and sheet for measurement of AC magnetic properties at power frequencies.

The object of this document is to define the general principles and the technical details of the measurement of the magnetic properties of electrical steel strip and sheet by means of a single sheet tester (SST).

The single sheet tester is applicable to test specimens obtained from electrical steel strips and sheets of any grade. The AC magnetic characteristics are determined for sinusoidal induced voltages, for specified peak values of the magnetic polarization, for specific peak values of the magnetic field strength and for a specified frequency.

The measurements are made at an ambient temperature of (23±5)°C on test specimens which have first been demagnetized.

NOTE Throughout this document, the quantity "magnetic polarization" is used as defined in IEC 60050-221. In some standards of the IEC 60404 series, the quantity "magnetic flux density" was used.

In order to support the long-term reliability of the performance of this set up and to understand better the relationship between the Epstein method and the SST method, the informative Annexes B and C, respectively, have been included.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-121, *International Electrotechnical Vocabulary – Part 121: Electromagnetism*

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