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CONSOLIDATED VERSION

Magnetic materials -
Part 8-8: Specifications for individual materials - Thin electrical steel strip and sheet for use at medium frequencies

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC 60404-8-8 edition 2.1 contains the second edition (2017-09) [documents 68/546/CDV and 68/562/RVC] and its amendment 1 (2026-06) [documents 68/795/CDV and 68/803/RVC].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 60404-8-8 has been prepared by IEC technical committee 68: Magnetic alloys and steels.

This second edition cancels and replaces the first edition published in 1991.

This edition constitutes a technical revision.

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

– extension of the range of electrical steels to include the improved grades.

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

CDV	Report on voting
68/546/CDV	68/562/RVC

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

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

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

The committee has decided that the contents of this document and its amendment 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– withdrawn, or

– revised.

1 Scope

This part of IEC 60404 defines the grades of thin non-oriented electrical steel strip and sheet in nominal thicknesses of 0,05 mm, 0,10 mm, 0,15 mm, 0,20 mm, 0,25 mm, 0,30 mm and 0,35 mm and of thin grain-oriented electrical steel strip and sheet in nominal thicknesses of 0,05 mm, 0,10 mm, 0,15 mm and 0,18 mm. In particular, it gives general requirements, magnetic properties, geometric characteristics and tolerances, technological characteristics, as well as inspection procedures.

NOTE For thin non-oriented electrical steel strip and sheet, other nominal thicknesses (i.e. 0,12 mm, 0,18 mm, 0,23 mm and 0,27 mm) can be agreed between the manufacturer and the purchaser.

This document applies to electrical steel strip and sheet supplied in the finally annealed condition in coils or sheets and intended for the construction of magnetic circuits predominantly used at frequencies in the range from 100 Hz to 10 kHz.

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* (available at http://www.electropedia.org/)

IEC 60050-221, *International Electrotechnical Vocabulary – Chapter 221: Magnetic materials and components* (available at http://www.electropedia.org/)

IEC 60404-2, *Magnetic materials – Part 2: Methods of measurement of the magnetic properties of electrical steel sheet and strip by means of an Epstein frame*

IEC 60404-9, *Magnetic materials – Part 9: Methods of determination of the geometrical characteristics of magnetic steel sheet and strip*

IEC 60404-10, *Magnetic materials – Part 10: Methods of measurement of magnetic properties of magnetic steel sheet and strip at medium frequencies*

IEC 60404-13, *Magnetic materials – Part 13: Methods of measurement of resistivity, density and stacking factor of electrical steel strip and sheet*

ISO 404, *Steel and steel products – General technical delivery requirements*

ISO 7799, *Metallic materials – Sheet and strip 3 mm thick or less – Reverse bend test*

ISO 10474, *Steel and steel products – Inspection documents*

Bibliography

[1] IEC 60404-1-1, *Magnetic materials – Part 1-1: Classification – Surface insulations of electrical steel sheet, strip and laminations*

[2] IEC 60404-8-7, *Magnetic materials – Part 8-7: Specifications for individual materials - Cold-rolled grain-oriented electrical steel strip and sheet delivered in the fully-processed state*

[3] ISO 2178, *Non-magnetic coatings on magnetic substrates – Measurement of coating thickness – Magnetic method*

[4] ASTM A34/A34M-06, *Standard Practice for Sampling and Procurement Testing of Magnetic Materials*

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