REDLINE VERSION

Magnetic materials –
Part 8-7: Specifications for individual materials – Cold-rolled grain-oriented electrical steel strip and sheet delivered in the fully-processed state

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MAGNETIC MATERIALS –

Part 8-7: Specifications for individual materials – Cold-rolled grain-oriented electrical steel strip and sheet delivered in the fully-processed state

FOREWORD

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This Redline version provides you with a quick and easy way to compare all the changes between this standard and its previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.
International Standard IEC 60404-8-7 has been prepared by IEC technical committee 68: Magnetic alloys and steels.

This fourth edition cancels and replaces the third edition published in 2008. 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:

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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, 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 "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be:

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**IMPORTANT** – The “colour inside” logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.
MAGNETIC MATERIALS –

Part 8-7: Specifications for individual materials – Cold-rolled grain-oriented electrical steel strip and sheet delivered in the fully-processed state

1 Scope

This part of IEC 60404 defines the grades of cold-rolled grain-oriented electrical steel strip and sheet in nominal thicknesses of 0.23 mm, 0.27 mm, 0.30 mm and 0.35 mm. In particular, it gives general requirements, magnetic properties, geometric characteristics, tolerances and technological characteristics, as well as inspection procedures.

This document applies to Goss textured grain-oriented electrical steel strip and sheet supplied in the final annealed condition in coils or sheets, and intended for the construction of magnetic circuits.

The grades are grouped into two classes:

– conventional grades;
– high permeability grades, including grades which may be delivered in the domain refined condition.

They correspond to Class C22 of IEC 60404-1.

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

IEC 60404-1, Magnetic materials – Part 1: Classification

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

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 60404-11, Magnetic materials – Part 11: Method of test for the determination of surface insulation resistance of magnetic sheet and strip

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

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

3 Terms and definitions
For the purposes of this document, the terms and definitions of the principal terms relating to magnetic properties given in IEC 60050-121 and IEC 60050-221 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

• IEC Electropedia: available at http://www.electropedia.org/
• ISO Online browsing platform: available at http://www.iso.org/obp

3.1 edge camber
the greatest distance between a longitudinal edge of a length of strip or a sheet and the line joining the two extremities of the measured length of this edge

Note 1 to entry: See IEC 60404-9.

3.2 flatness (wave factor)
the property of a sheet or of a length of strip which is characterized by the wave factor, i.e. by the relation of the height of the wave to its length

NOTE See IEC 60404-9.

3.3 edge wave
wave factor
variations of flatness of a length of strip or a sheet taking a form of waves at the slit edge of the product

Note 1 to entry: The edge wave is characterized by the wave factor which is the relation of the height of the wave to its length, expressed as a percentage.

3.4 number of bends
number of alternate bends possible before the appearance of the first crack in the base metal visible to the naked eye

Note 1 to entry: The number of bends constitutes an indication of the ductility of the material product.

3.5 internal stresses
stresses which are characterized by a deviation in relation to the line of cutting

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INTERNATIONAL STANDARD

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