BSI Standards Publication

Magnetic materials — Classification of surface insulations of electrical steel sheet, strip and laminations

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National foreword

This British Standard is the UK implementation of EN 10342:2025. It supersedes BS EN 10342:2005, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/108, Magnetic Alloys and Steels.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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English Version

Magnetic materials - Classification of surface insulations of electrical steel sheet, strip and laminations

Matériaux magnétiques - Classification des isolations de surface des tôles, bandes et lamelles magnétiques en acier

Magnetische Werkstoffe - Einteilung der Isolationen auf Elektroblech und -band und daraus gefertigten Stanzteilen

This European Standard was approved by CEN on 11 November 2025.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 10342:2025) has been prepared by Technical Committee CEN/TC 459/SC 8 “Steel sheet and strip for electrical applications”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2026, and conflicting national standards shall be withdrawn at the latest by June 2026.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 10342:2005.

EN 10342:2025 includes the following significant technical changes with respect to EN 10342:2005:

— the normative references have been updated;

— in Table 1, insulation designation EC-3-B has been added.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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1 Scope

This document establishes a classification of surface insulations for electrical steel sheet, strip and laminations according to their general composition, relative insulating ability and function.

These surface insulations are either oxide layers or applied coatings.

The purpose of this classification is to create a nomenclature for the various types of surface insulations and to assist users of surface insulations by providing general information about the chemical nature and use of the surface insulations.

It is not the intent of this classification to specify insulation requirements in terms of specific values of surface insulation resistance. Such requirements are to be agreed between the purchaser and the steel producer, where applicable.

The classification is to be used in conjunction with the various specifications for cold rolled electrical steels (see Clause 2).

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.

EN 10106, *Cold rolled non-oriented electrical steel strip and sheet delivered in the fully processed state*

EN 10107, *Grain-oriented electrical steel strip and sheet delivered in the fully processed state*

EN 10265, *Magnetics materials — Specification for electrical steel strip and sheet with specified mechanical properties and magnetic polarisation*

EN 10303, *Thin magnetic steel strip and sheet for use at medium frequencies*

EN 10341, *Cold rolled electrical non-alloy and alloy steel sheet and strip delivered in the semi-processed state*

EN IEC 60404-11, *Magnetic materials — Part 11: Methods of measurement of the surface insulation resistance of electrical steel strip and sheet*

IEC 60050-221, *International Electrotechnical Vocabulary (IEV) — Part 221: Magnetic materials and components*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-221 and in EN 10106, EN 10107, EN 10341, EN 10265, EN IEC 60404-11 and EN 10303 apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/