INTERNATIONAL STANDARD

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Laminations for transformers and inductors –

Part 1:
Mechanical and electrical characteristics

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LAMINATIONS FOR TRANSFORMERS AND INDUCTORS –

Part 1: Mechanical and electrical characteristics

FOREWORD

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International Standard IEC 60740-1 has been prepared by IEC technical committee 51: Magnetic components and ferrite materials.

IEC 60740-1 cancels and replaces IEC 60740 published in 1982 and its amendment 1 (1991). The main changes are listed below:

a) ranges with lamination strips YS, YSUI 1, YSUI 2 and laminations YEE 2-..L added;
b) range YEI 1 extended at the above end;
c) ranges YED 2, YEF 2, YEL 2, YES 2, Type YM 1-5a and YM 1-7a cancelled;
d) national designations cancelled;
e) electrical characteristics for the laminations specified;
f) mechanical characteristics for laminations added;
g) holes added for lamination types YEI 1, YUI 1, YUI 2, YM 1;
h) in Annex A, a conversion of the polarisation $\hat{J}$ and the field strength $\hat{H}$ in a specific total apparent power is defined. For the characteristics of the reactive power and the power loss, equations and constants are specified.

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

FDIS	Report on voting
51/823/FDIS	51/836/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.

IEC 60740 consists of the following parts under the general title *Laminations for transformers and inductors:*

Part 1: Mechanical and electrical characteristics

Part 2: Specification for the minimum permeabilities of laminations made of soft magnetic metallic materials.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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- withdrawn;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.

A bilingual version of this publication may be issued at a later date.

LAMINATIONS FOR TRANSFORMERS AND INDUCTORS –

Part 1: Mechanical and electrical characteristics

1 Scope

This part of IEC 60740 specifies the characteristics of laminations. Their preferred use is cores for transformers and inductors. The laminations are made of sheets and strips of magnetic materials, specified in IEC 60404-8-4 and IEC 60404-8-7.

2 Normative references

The following referenced documents are indispensable for the application 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 (IEV) – Chapter 221: Magnetic materials and components*

IEC 60404-1:2000, *Magnetic materials – Part 1: Classification*

IEC 60404-8-4:1998, *Magnetic materials – Part 8-4: Specifications for individual materials – Cold-rolled non-oriented electrical steel sheet and strip delivered in the fully-processed state*

IEC 60404-8-7:1998, *Magnetic materials – Part 8-7: Specifications for individual materials – Cold-rolled grain-oriented electrical steel sheet and strip delivered in the fully-processed state*

IEC 60404-11:1999, *Magnetic materials – Part 11: Method of test for the determination of surface insulation resistance of magnetic sheet and strip*

IEC 61021-1:1990, *Laminated core packages for transformers and inductors used in telecommunication and electronic equipment – Part 1: Dimensions*

IEC 61021-2:1995, *Laminated core packages for transformers and inductors used in telecommunication and electronic equipment – Part 2: Electrical characteristics for cores using YEE 2 laminations*

ISO 286-1:1988, *ISO system of limits and fits – Part 1: Bases of tolerances, deviations and fits*