

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Magnetic materials –  
Part 9: Methods of determination of the geometrical characteristics of electrical  
steel strip and sheet**

**Matériaux magnétiques –  
Partie 9: Méthodes de détermination des caractéristiques géométriques des  
bandes et tôles magnétiques en acier**



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## CONTENTS

|  |    |
|--|----|
| FOREWORD.....  | 3  |
| 1 Scope.....   | 5  |
| 2 Normative references .....   | 5  |
| 3 Terms and definitions .....  | 5  |
| 4 Measurement and test methods .....   | 6  |
| 4.1 Edge wave (wave factor).....   | 6  |
| 4.1.1 Test specimen .....  | 6  |
| 4.1.2 Measuring procedure .....  | 6  |
| 4.2 Residual curvature.....  | 7  |
| 4.2.1 General .....  | 7  |
| 4.2.2 Horizontal method .....  | 8  |
| 4.2.3 Vertical method .....  | 8  |
| 4.3 Edge camber .....  | 9  |
| 4.3.1 Test specimen .....  | 9  |
| 4.3.2 Measuring procedure .....  | 9  |
| 4.4 Deviation from the shearing line (internal stress) .....                           | 10 |
| 4.4.1 Test specimen .....  | 10 |
| 4.4.2 Measuring procedure .....  | 10 |
| 4.5 Burr height.....   | 11 |
| 4.5.1 Test specimen .....  | 11 |
| 4.5.2 Measuring procedure .....  | 11 |
| 5 Test report.....   | 14 |
| Annex A (informative) Examples of the clamping system.....                             | 15 |
| Bibliography.....  | 17 |
| Figure 1 – Example of test specimen with edge waves placed on a surface plate.....     | 7  |
| Figure 2 – Verification of the wave factor ( $w$ ) .....                               | 7  |
| Figure 3 – Verification of the residual curvature (horizontal method) .....            | 8  |
| Figure 4 – Verification of the residual curvature (vertical method) .....              | 9  |
| Figure 5 – Verification of the edge camber.....  | 10 |
| Figure 6 – Verification of the deviation from the shearing line (internal stress)..... | 11 |
| Figure 7 – Example of the burr height ( $h_b$ ).....                                   | 12 |
| Figure 8 – Apparatus for measuring burr height using a linear measuring device .....   | 13 |
| Figure 9 – Position of the moving anvil .....  | 13 |
| Figure A.1 – An example of the clamping system (type A).....                           | 15 |
| Figure A.2 – An example of the clamping system (type B).....                           | 16 |

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**MAGNETIC MATERIALS –****Part 9: Methods of determination of the geometrical characteristics of electrical steel strip and sheet**

## FOREWORD

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International Standard IEC 60404-9 has been prepared by IEC technical committee 68: Magnetic alloys and steels.

This second edition cancels and replaces the first published in 1987. This edition constitutes a technical revision.

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

- a) revision of terms and definitions;
- b) specification of the length of test specimens for the determinations of edge wave (wave factor) and edge camber;
- c) addition of the horizontal method for the determination of residual curvature, and a note that informs about a safety concern of the vertical method;
- d) clarification that the burr height was characterized by the maximum value;

- e) addition of the measuring procedure using a hand-held micrometer to determine the burr height.

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

| CDV        | Report on voting |
|------------|------------------|
| 68/597/CDV | 68/607/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 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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- amended.

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## MAGNETIC MATERIALS –

### Part 9: Methods of determination of the geometrical characteristics of electrical steel strip and sheet

#### 1 Scope

This part of IEC 60404 specifies the measurement and test methods for the determination of the following geometrical characteristics of electrical steel strip and sheet:

- edge wave (wave factor);
- residual curvature;
- edge camber;
- deviation from the shearing line (internal stress);
- burr height.

This document applies to electrical steel strip and sheet intended for the construction of magnetic circuits and corresponding to Classes B2, C21, C22 and C23 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 60050-121, *International Electrotechnical Vocabulary – Part 121: Electromagnetism*

IEC 60050-221, *International Electrotechnical Vocabulary – Chapter 221: Magnetic materials and components*

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

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions 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 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: 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.