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**Test methods for electrical steel strip and
sheet — Part 2: Methods of determination
of the geometrical characteristics of elec-
trical steel strip and sheet**

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In the event of any doubts arising as to the contents,
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Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by The Japan Electrical Manufacturers' Association (JEMA)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS C 2550-2:2011**), which has been technically revised.

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JIS C 2550 series consists of the following 5 parts under the general title *Test methods for electrical steel strip and sheet* – :

Part 1 : Methods of measurement of the magnetic properties of electrical steel strip and sheet by means of an Epstein frame

Part 2 : Methods of determination of the geometrical characteristics of electrical steel strip and sheet

Part 3 : Methods of measurement of the magnetic properties of electrical steel strip and sheet at medium frequencies

Part 4 : Methods of test for the determination of surface insulation resistance of electrical strip and sheet

Part 5 : Methods of measurement of resistivity, density and stacking factor of electrical steel strip and sheet

Test methods for electrical steel strip and sheet—Part 2: Methods of determination of the geometrical characteristics of electrical steel strip and sheet

Introduction

This Japanese Industrial Standard has been prepared based on **IEC 60404-9:2018**, Edition 2, with some modifications of the technical contents to conform to the technologies commonly used in Japan.

The dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JA.

1 Scope

This Standard 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 Standard applies to electrical steel strip and sheet specified in JIS C 2552 and JIS C 2553, and those corresponding to Classes B2, C21, C22 and C23 of **IEC 60404-1:2016**.

NOTE The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

IEC 60404-9:2018 *Magnetic materials –Part 9: Methods of determination of the geometrical characteristics of electrical steel strip and sheet* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standards and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. For standards with the year indication, only the editions of the indicated year shall be applied and the revisions (including amendments) made thereafter shall not be applied. For those without the indication of the year, the most recent editions (including amendments) shall be applied.

JIS B 7502 *Micrometers*

JIS C 2552 *Cold-rolled non-oriented electrical steel strip and sheet delivered in the fully-processed state*

JIS C 2553 *Cold-rolled grain-oriented electrical steel strip and sheet delivered in the fully-processed state*

IEC 60050-121 *International Electrotechnical Vocabulary – Part 121: Electromagnetism*

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

IEC 60404-1:2016 *Magnetic materials – Part 1: Classification*

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in IEC 60050-121 and IEC 60050-221, and the following apply.

3.1

edge wave, wave factor

edge wave: form of waves at the slit edge of electrical steel strip and sheet (see Figure 1)

wave factor: ratio of the height of wave (h) to the wavelength, expressed as a percentage (see Figure 2)

3.2

residual curvature

permanent curvature in the rolling direction of unwound electrical steel strip and sheet (see Figure 3 and Figure 4)

3.3

edge camber

greatest distance between a longitudinal edge of a length of electrical steel strip or a sheet and the line joining the two extremities of the measured length of this edge (see Figure 5)

3.4

deviation from the shearing line, internal stresses

greatest distance between corresponding points on the two sheared edges of a length of electrical steel strip or a sheet sheared in the middle of the width, in parallel to the rolling direction of the product, which characterizes the internal stress of the materials (see Figure 6)

3.5

burr height

difference between the thicknesses of a length of electrical steel strip or a sheet measured respectively at the slit edge and at a distance of about 10 mm from this edge (see Figure 7)