

**Materiales magnéticos. Parte 1: Clasificación (Ratificada por la Asociación Española de Normalización en marzo de 2017.)**

UNE-EN 60404-1:2017

Materiales magnéticos. Parte 1: Clasificación (Ratificada por la Asociación Española de Normalización en marzo de 2017.)

*Magnetic materials - Part 1: Classification (Endorsed by Asociación Española de Normalización in March of 2017.)*

*Matériaux magnétiques - Partie 1: Classification (Entérinée par l'Asociación Española de Normalización en mars 2017.)*

En cumplimiento del punto 11.2.6.4 de las Reglas Internas de CEN/CENELEC Parte 2, se ha otorgado el rango de documento normativo español UNE al documento normativo europeo EN 60404-1:2017 (Fecha de disponibilidad 2017-01-27)

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Las observaciones a este documento han de dirigirse a:

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EUROPEAN STANDARD

**EN 60404-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

**Magnetic materials - Part 1: Classification  
(IEC 60404-1:2016)**Matériaux magnétiques - Partie 1: Classification  
(IEC 60404-1:2016)Magnetische Werkstoffe - Teil 1: Klassifizierung  
(IEC 60404-1:2016)

This European Standard was approved by CENELEC on 2016-11-28. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**European foreword**

The text of document 68/533/CDV, future edition 3 of IEC 60404-1, prepared by IEC/TC 68 "Magnetic alloys and steels" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60404-1:2017.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-08-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-11-28

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**Endorsement notice**

The text of the International Standard IEC 60404-1:2016 was approved by CENELEC as a European Standard without any modification.

**Annex ZA**  
(normative)

**Normative references to international publications  
with their corresponding European publications**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-121	-	International Electrotechnical Vocabulary (IEV) - Part 121: Electromagnetism	-	-
IEC 60050-151	-	International Electrotechnical Vocabulary (IEV) - Part 151: Electrical and magnetic devices	-	-
IEC 60050-221	-	International Electrotechnical Vocabulary (IEV) - Chapter 221: Magnetic materials and components	-	-
IEC 60401-3	-	Terms and nomenclature for cores made of magnetically soft ferrites - Part 3: Guidelines on the format of data appearing in manufacturers' catalogues of transformer and inductor cores	EN 60401-3	-
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	EN 60404-2	-
IEC 60404-3	-	Magnetic materials - Part 3: Methods of measurement of the magnetic properties of magnetic sheet and strip by means of a single sheet tester	-	-
IEC 60404-4	-	Magnetic materials - Part 4: Methods of measurement of d.c. magnetic properties of iron and steel	EN 60404-4	-
IEC 60404-6	-	Magnetic materials - Part 6: Methods of measurement of the magnetic properties of magnetically soft metallic and powder materials at frequencies in the range 20 Hz to 200 kHz by the use of ring specimens	EN 60404-6	-
IEC 60404-7	-	Magnetic materials - Part 7: Method of measurement of the coercivity of magnetic materials in an open magnetic circuit	-	-

**EN 60404-1:2017**

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60404-8-1	-	Magnetic materials - Part 8-1: Specifications for individual materials - Magnetically hard materials	EN 60404-8-1	-
IEC 60404-8-3	-	Magnetic materials - Part 8-3: Specifications for individual materials - Cold-rolled electrical non-alloyed and alloyed steel sheet and strip delivered in the semi-processed state	-	-
IEC 60404-8-4	-	Magnetic materials - Part 8-4: Specifications for individual materials - Cold-rolled non-oriented electrical steel strip and sheet delivered in the fully-processed state	-	-
IEC 60404-8-5	-	Magnetic materials - Part 8: Specifications for individual materials - Section 5: Specification for steel sheet and strip with specified mechanical properties and magnetic permeability	-	-
IEC 60404-8-6	-	Magnetic materials - Part 8-6: Specifications for individual materials - Soft magnetic metallic materials	EN 60404-8-6	-
IEC 60404-8-7	-	Magnetic materials - Part 8-7: Specifications for individual materials - Cold-rolled grain-oriented electrical steel strip and sheet delivered in the fully-processed state	-	-
IEC 60404-8-8	-	Magnetic materials - Part 8: Specifications for individual materials - Section 8: Specification for thin magnetic steel strip for use at medium frequencies	-	-
IEC 60404-8-9	-	Magnetic materials - Part 8: Specification for individual materials - Section 9: Standard specification for sintered soft magnetic materials	-	-
IEC 60404-8-10	-	Magnetic materials - Part 8-10: Specifications for individual materials - Magnetic materials (iron and steel) for use in relays	-	-
IEC 60404-10	-	Magnetic materials - Part 10: Methods of measurement of magnetic properties of electrical steel strip and sheet at medium frequencies	-	-
ISO 4948-1	-	Steels; Classification - Part 1: Classification of steels into unalloyed and alloy steels based on chemical composition	-	-



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# INTERNATIONAL STANDARD

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**Magnetic materials –  
Part 1: Classification**

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