BRITISH STANDARD

BS EN
62333-1:2006

Noise suppression sheet for digital devices and equipment —

Part 1: Definitions and general properties

The European Standard EN 62333-1:2006 has the status of a British Standard

ICS 29.100.10

BSI
British Standards

National foreword

This British Standard is the official English language version of EN 62333-1:2006. It is identical with IEC 62333-1:2006.

The UK participation in its preparation was entrusted to Technical Committee EPL/51, Transformers, inductors, magnetic components and ferrite materials, which has the responsibility to:

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EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 62333-1

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English version

Noise suppression sheet for digital devices and equipment Part 1: Definitions and general properties

(IEC 62333-1:2006)

Plaque réduisant le bruit des dispositifs et appareils numériques
Partie 1: Définitions et propriétés générales
(CEI 62333-1:2006)

Rauschunterdrückungsschicht für digitale Geräte und Einrichtungen
Teil 1: Begriffe und allgemeine Eigenschaften
(IEC 62333-1:2006)

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

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Foreword

The text of document 51/852/FDIS, future edition 1 of IEC 62333-1, prepared by IEC TC 51, Magnetic components and ferrite materials, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62333-1 on 2006-06-01.

This Standard is to be used in conjunction with EN 62333-2.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2007-03-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2009-06-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62333-1:2006 was approved by CENELEC as a European Standard without any modification.

NOISE SUPPRESSION SHEET FOR DIGITAL DEVICES AND EQUIPMENT –

Part 1: Definitions and general properties

1 Scope

This part of IEC 62333 provides terms and definitions for an electromagnetic noise suppression sheet for digital devices and equipment used in a frequency range of between 30 MHz to 30 GHz, and refers to the influence on the signal by usage of a noise suppression sheet. Guidance is also given for uniform presentation of the properties of a noise suppression sheet, intended for use in manufactures' technical data. A noise suppression sheet is distinguished from RF wave absorbers used in free space.

This part of IEC 62333 is limited to establishing terms and definitions. It constitutes a concise reference for Part 2 of the standard. Part 2 specifies in detail the measurement of parameters defined in Part 1. The two parts of IEC 62333 are therefore closely related, and are intended to be used together.

NOTE This standard also specifies the influences on signal lines by using these sheets.

2 Normative reference

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, *International Electrotechnical Vocabulary (IEV)*

IEC 62333-2, *Noise suppression sheet for digital devices and equipment – Part 2: Measuring methods*

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions of IEC 60050 and the following apply.

3.1.1
noise suppression
suppression generally classified into signal decoupling, radiation suppression and attenuation of transmission power by its means

NOTE Each function above is achieved by absorption and/or shielding.

3.1.2
noise suppression sheet
NSS
sheet which enables noise suppression and is composed of magnetic or dielectric or conductive material with electromagnetic losses

3.1.3
suppression ratio
ratio of noise level with suppression sheets and without them, which is classified into intra-decoupling ratio, inter-decoupling ratio, transmission attenuation power ratio and radiation suppression ratio, and is expressed in dB

3.1.3.1
intra-decoupling ratio
$\boldsymbol{R_{da}}$
reduction of coupling between lines and circuit existing on one side of the noise suppression sheet

3.1.3.2
inter-decoupling ratio
$\boldsymbol{R_{de}}$
reduction of coupling between lines and circuit existing on both sides of the noise suppression sheet

3.1.3.3
transmission attenuation power ratio
$\boldsymbol{R_{tp}}$
attenuation of conduction current noise caused by a noise suppression sheet

3.1.3.4
radiation suppression ratio
$\boldsymbol{R_{rs}}$
suppression of radiation noise emitted from the circuit board

3.2 Symbols

μ_r relative complex permeability

μ_r' real part of relative complex permeability

μ_r'' imaginary part of relative complex permeability

ε_r relative complex permitivity

ε_r' real part of relative complex permitivity

ε_r'' imaginary part of relative complex permitivity

R_{da} intra-decoupling ratio

R_{de} inter-decoupling ratio

R_{tp} transmission attenuation power ratio

R_{rs} radiation suppression ratio

4 Properties to be specified in specifications and technical data

4.1 General

4.1.1 Noise suppression sheet

4.1.2 Product(s) name

4.1.3 Structural diagram

A: Bulk magnetic oxide or metal
B: Composite of magnetic oxide or metal and rubber or plastic
C: Composite of dielectrics or conductors and rubber or plastic
D: Others, for example multi-layers made of the above materials

4.1.4 Thickness

4.1.5 Commodity shape (roll or sheet)

4.1.6 Installation method

4.2 Electrical characteristics

4.2.1 Intra-decoupling ratio, R_{da}

4.2.2 Inter-decoupling ratio, R_{de}

4.2.3 Transmission attenuation power ratio, R_{tp}

4.2.4 Radiation suppression ratio, R_{rs}

4.2.5 Surface resistance, ρ_s or resistivity, ρ_v

NOTE The measuring methods of R_{da}, R_{de}, R_{tp} and R_{rs} should be referred to IEC 62333-2.

4.3 Mechanical characteristics

4.3.1 Density, ρ

4.3.2 Coefficient of linear thermal expansion, α_T

4.3.3 Young's modulus E or hardness

4.4 Environmental conditions

4.4.1 Temperature range

4.4.1.1 Operating temperature

4.4.1.2 Storage temperature

4.4.2 Humidity range

4.4.3 Flame resistance

4.4.4 Statement for non-usage of the prohibited chemical materials

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

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

Publication	Year	Title	EN/HD	Year
IEC 60050	Series	International Electrotechnical Vocabulary (IEV)	-	-
IEC 62333-2	-[1)]	Noise suppression sheet for digital devices and equipment Part 2: Measuring methods	EN 62333-2	2006[2)]

[1)] Undated reference.

[2)] Valid edition at date of issue.

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