

Svenska Elektriska Kommissionen, SEK

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## Elektromagnetisk kompatibilitet (EMC) – Del 5-7: Installation och skyddsåtgärder – Kapslingsklasser för elektrisk materiel – Skydd mot elektromagnetiska störningar (EM-beteckning)

*Electromagnetic compatibility (EMC) –**Part 5-7: Installation and mitigation guidelines –**Degrees of protection by enclosures against electromagnetic disturbances (EM code)*

Som svensk standard gäller europastandarden EN 61000-5-7:2001. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61000-5-7:2001.

### Nationellt förord

Europastandarden EN 61000-5-7:2001

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61000-5-7, First edition, 2001 - Electromagnetic compatibility (EMC) - Part 5-7: Installation and mitigation guidelines - Degrees of protection by enclosures against electromagnetic disturbances (EM code)**

utarbetad inom International Electrotechnical Commission, IEC.

EUROPEAN STANDARD

**EN 61000-5-7**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2001

ICS 33.100.01

English version

**Electromagnetic compatibility (EMC)  
Part 5-7: Installation and mitigation guidelines -  
Degrees of protection by enclosures  
against electromagnetic disturbances (EM code)  
(IEC 61000-5-7:2001)**

Compatibilité électromagnétique (CEM)  
Partie 5-7: Guide d'installation et  
d'atténuation -  
Degrés de protection procurés par les  
enveloppes contre les perturbations  
électromagnétiques (Code EM)  
(CEI 61000-5-7:2001)

Elektromagnetische Verträglichkeit (EMV)  
Teil 5-7: Installationsrichtlinien und  
Abhilfemaßnahmen -  
Schutzarten durch Gehäuse gegen  
elektromagnetische Störgrößen  
(EM-Code)  
(IEC 61000-5-7:2001)

This European Standard was approved by CENELEC on 2001-01-01. 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 Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**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**

## Foreword

The text of document 77C/96/FDIS, future edition 1 of IEC 61000-5-7, prepared by SC 77C, High power transient phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61000-5-7 on 2001-01-01.

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) 2001-11-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2004-01-01

Annexes designated "normative" are part of the body of the standard.  
Annexes designated "informative" are given for information only.  
In this standard, annex ZA is normative and annexes A to D are informative.  
Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61000-5-7:2001 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60297-1	NOTE: Harmonized as HD 493.1 S1:1988 (not modified).
IEC 60297-2	NOTE: Harmonized as HD 493.2 S1:1988 (not modified).
IEC 60297-3	NOTE: Harmonized as HD 493.3 S1:1988 (not modified).
IEC 60297-4	NOTE: Harmonized as EN 60297-4:1995 (not modified).
IEC 60917-1	NOTE: Harmonized as EN 60917-1:1998 (not modified).

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## Annex ZA (normative)

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

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-161	<sup>1)</sup>	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-
IEC 60050-826	<sup>1)</sup>	Chapter 826: Electrical installations of buildings	HD 384.2 S2	2001 <sup>2)</sup>
IEC 60068-1	<sup>1)</sup>	Environmental testing Part 1: General and guidance	EN 60068-1	1994 <sup>2)</sup>
IEC 60529	<sup>1)</sup>	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993 <sup>2)</sup>
IEC 61000-4-3 (mod)	<sup>1)</sup>	Electromagnetic compatibility (EMC) Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	1996 <sup>2)</sup>
IEC 61000-4-23	<sup>1)</sup>	Part 4-23: Testing and measurement techniques - Test methods for protective devices for HEMP and other radiated disturbances	EN 61000-4-23	2000 <sup>2)</sup>

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<sup>1)</sup> undated reference.

<sup>2)</sup> valid edition at date of issue.

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## **ELECTROMAGNETIC COMPATIBILITY (EMC) –**

### **Part 5-7: Installation and mitigation guidelines – Degrees of protection provided by enclosures against electromagnetic disturbances (EM code)**

#### **1 Scope**

This part of IEC 61000 describes performance requirements, test methods and classification procedures for degrees of protection provided by empty enclosures against electromagnetic disturbances for frequencies between 10 kHz and 40 GHz. The shielding performance is to be measured prior to the installation of internal electrical and/or electronic equipment and components. This shielding protection is measured for the purpose of demonstrating that the enclosure provides adequate shielding of electromagnetic energy to support acceptable performance of the complete assembled units when tested to applicable IEC standards. However, it should be noted that satisfactory performance of an empty enclosure does not necessarily ensure that the completed units will pass all EMC performance test standards for the operating equipment (see discussion in annex A).

The purpose of this standard is to provide a repeatable means for evaluating the electromagnetic shielding performance of empty mechanical enclosures, including cabinets and subracks, and to specify a marking code to allow a manufacturer to select an enclosure with a known capability for attenuating electromagnetic fields. The requirements for immunity to various types of electromagnetic disturbances, including lightning and high-altitude electromagnetic pulse (HEMP) will need to be considered by manufacturers when determining the need for application of this standard for specific equipment and applications, and for the specific enclosure shielding requirements which are necessary as a function of frequency.

The adoption of the classification system in this standard will, whenever possible, promote uniformity in methods of describing the protection against electromagnetic stresses provided by the enclosure. This includes protection of equipment inside the enclosure from external electromagnetic stresses, as well as protection of external equipment from internally generated electromagnetic stresses.

Technical Committees responsible for enclosures may decide on the extent and manner in which the classification defined in this standard is used in their standards and to define “enclosure” as it applies to their equipment. However, the tests and performance categories must not differ from those specified in this standard. An informative guide for the details to be specified in relevant enclosure product standards is given in annex B.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61000. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61000 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

IEC 60050(161): *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electro-magnetic compatibility*

IEC 60050(826): *International Electrotechnical Vocabulary (IEV) – Chapter 826: Electrical installations of buildings*

IEC 60068-1: *Environmental testing – Part 1: General and guidance*

IEC 60529: *Degrees of protection provided by enclosures (IP Code)*

IEC 61000-4-3: *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 3: Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-23: *Electromagnetic compatibility (EMC) – Part 4-23: Testing and measurement techniques – Test methods for protective devices for HEMP and other radiated disturbances*