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## **Mekaniska byggsätt för elektronikutrustningar – Kapslingar för placering utomhus – Del 1: Riktlinjer för konstruktion**

*Mechanical structures for electronic equipment –*

*Outdoor enclosures –*

*Part 1: Design guidelines*

Som svensk standard gäller europastandarden EN 61969-1:2000. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61969-1:2000.

### **Nationellt förord**

Europastandarden EN 61969-1:2000

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61969-1, First edition, 1999 - Mechanical structures for electronic equipment - Outdoor enclosures - Part 1: Design guidelines**

utarbetad inom International Electrotechnical Commission, IEC.

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English version

**Mechanical structures for electronic equipment - Outdoor enclosures**  
**Part 1: Design guidelines**  
(IEC 61969-1:1999)

Structures mécaniques pour équipement  
électronique - Enveloppes de plein air  
Partie 1: Guide de conception  
(CEI 61969-1:1999)

Mechanische Bauweisen für  
elektronische Einrichtungen  
Außengehäuse  
Teil 1: Konstruktionsleitfaden  
(IEC 61969-1:1999)

This European Standard was approved by CENELEC on 2000-02-01. 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 48D/211/FDIS, future edition 1 of IEC 61969-1, prepared by SC 48D, Mechanical structures for electronic equipment, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61969-1 on 2000-02-01.

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) 2000-11-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2003-02-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annex ZA is normative.  
Annex ZA has been added by CENELEC.

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### Endorsement notice

The text of the International Standard IEC 61969-1:1999 was approved by CENELEC as a European Standard without any modification.

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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 60050-581	1978	International Electrotechnical Vocabulary (IEV) - Chapter 581: Electromechanical components for electronic equipment	-	-
IEC 60068	Series	Environmental testing	EN 60068	Series
IEC 60297-3	1984	Dimensions of mechanical structures of the 482,6 mm (19 in) series Part 3: Subracks and associated plug-in units	HD 493.3 S2 <sup>1)</sup>	1993
IEC 60417	Series	Graphical symbols for use on equipment	EN 60417	Series
IEC 60721	Series	Classification of environmental conditions	EN 60721	Series
IEC 60917	Series	Modular order for the development of mechanical structures for electronic equipment practices	EN 60917	Series
IEC 60917-2-2	1994	Part 2: Sectional specification - Interface co-ordination dimensions for the 25 mm equipment practice -- Section 2: Detail specification - Dimensions for subracks, chassis, backplanes, front panels and plug-in units	EN 60917-2-2	1996
IEC 61587-1	1999	Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 Part 1: Climatic, mechanical tests and safety aspects for cabinets, racks, subracks and chassis	EN 61587-1	1999
IEC 61587-2	<sup>2)</sup>	Part 2: Seismic tests for cabinets and racks	-	-

1) HD 493.3 S2 is based on IEC 60297-3:1984+A1:1992

2) In preparation

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61587-3	1999	Part 3: Electromagnetic shielding performance tests for cabinets, racks and subracks	-	-
IEC 61969	Series	Mechanical structures for electronic equipment - Outdoor enclosures	EN 61969	Series
ISO 3864	1984	Safety colours and safety signs	-	-

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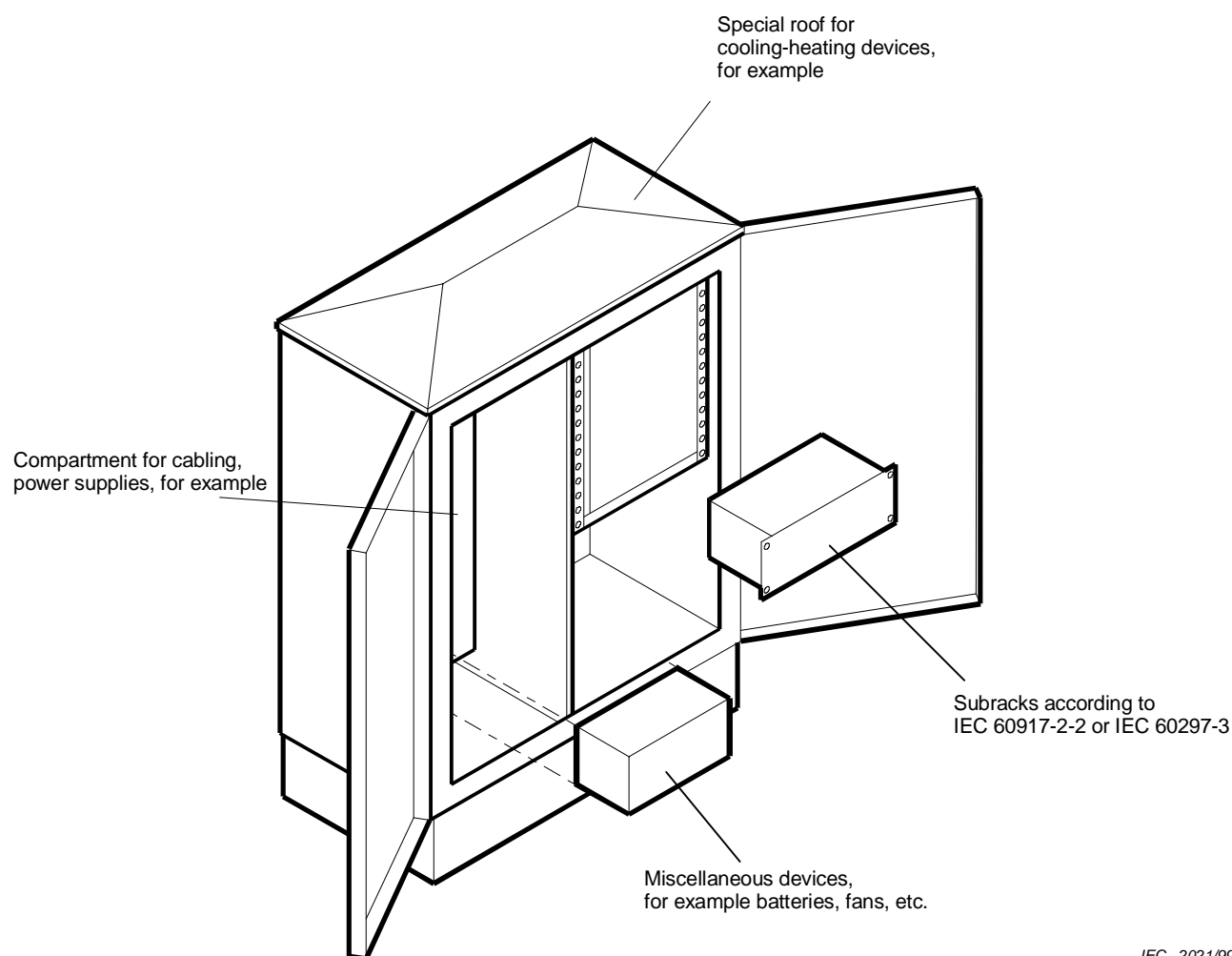
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# MECHANICAL STRUCTURES FOR ELECTRONIC EQUIPMENT – OUTDOOR ENCLOSURES –

## Part 1: Design guidelines

### 1 Scope

This part of IEC 61969 gives guidelines for the design of outdoor enclosures and is applicable over a wide field of mechanical, electromechanical and electronic equipment and its installation where a modular design is used. The objective of this standard is to provide an overview of specifications for enclosures focused on requirements for outdoor applications at non-weather-protected locations. These enclosures are considered to contain any equipment and provide protection for the outdoor installed facilities against unwanted environmental impacts (see figure 1). The installed equipment may be, but is not limited to, subracks according to IEC 60917-2-2 or IEC 60297-3.



IEC 2021/99

Figure 1 – Arrangement overview