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## Mekaniska byggsätt för elektronikutrustningar – Kapslingar för placering utomhus – Del 3: Fordringar beträffande miljötålighet och säkerhet

*Mechanical structures for electronic equipment –  
Outdoor enclosures –  
Part 3: Environmental requirements, tests and safety aspects*

Som svensk standard gäller europastandarden EN 61969-3:2012. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61969-3:2012.

### Nationellt förord

Europastandarden EN 61969-3:2012

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61969-3, Second edition, 2011 - Mechanical structures for electronic equipment - Outdoor enclosures - Part 3: Environmental requirements, tests and safety aspects**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 61969-3, utgåva 1, 2002, gäller ej fr o m 2014-12-22.

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**Mechanical structures for electronic equipment -  
Outdoor enclosures -  
Part 3: Environmental requirements, tests and safety aspects  
(IEC 61969-3:2011)**

Structures mécaniques pour équipement  
électronique -  
Enveloppes de plein air -  
Partie 3: Exigences environnementales,  
essais et aspects de la sécurité  
(CEI 61969-3:2011)

Mechanische Bauweisen für elektronische  
Einrichtungen -  
Außengehäuse -  
Teil 3: Umgebungsanforderungen,  
Prüfungen und Sicherheitsaspekte  
(IEC 61969-3:2011)

This European Standard was approved by CENELEC on 2011-12-22. 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.

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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**CENELEC**

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

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

## Foreword

The text of document 48D/483/FDIS, future edition 2 of IEC 61969-3, 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 approved by CENELEC as EN 61969-3:2012.

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) 2012-09-22
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2014-12-22

This document supersedes EN 61969-3:2001.

EN 61969-3:2012 includes the following significant technical changes with respect to EN 61969-3:2001:

Table 1 and Table 6 have been extended with requirements and tests, relevant for outdoor conditions.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

## Endorsement notice

The text of the International Standard IEC 61969-3:2011 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 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 60068          | Series      | Environmental testing                                                                                                                                                                        | EN 60068       | Series      |
| IEC 60417          | Data-base   | Graphical symbols for use on equipment                                                                                                                                                       | -              | -           |
| IEC 60529          | -           | Degrees of protection provided by enclosures - (IP Code)                                                                                                                                     | -              | -           |
| IEC 60695-11-10    | -           | Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods                                                                                              | EN 60695-11-10 | -           |
| IEC 60721-3-2      | -           | Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 2: Transportation                                   | EN 60721-3-2   | -           |
| IEC 60721-3-4      | -           | Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weatherprotected locations | EN 60721-3-4   | -           |
| IEC 60825-1        | -           | Safety of laser products - Part 1: Equipment classification and requirements                                                                                                                 | EN 60825-1     | -           |
| IEC 60950          | Series      | Information technology equipment - Safety                                                                                                                                                    | EN 60950       | Series      |
| IEC 61010          | -           | Safety requirements for electrical equipment for measurement, control and laboratory use                                                                                                     | EN 61010       | -           |
| IEC 61140          | -           | Protection against electric shock - Common aspects for installation and equipment                                                                                                            | EN 61140       | -           |
| IEC 61439-5        | -           | Low-voltage switchgear and controlgear assemblies - Part 5: Assemblies for power distribution in public networks                                                                             | EN 61439-5     | -           |
| IEC 61587-1        | -           | 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     | -           |
| IEC 61587-2        | -           | Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 - Part 2: Seismic tests for cabinets and racks                                                            | EN 61587-2     | -           |

| <u>Publication</u>  | <u>Year</u> | <u>Title</u>                                                                                                                                                                           | <u>EN/HD</u>  | <u>Year</u> |
|---------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|
| IEC 61587-3         | -           | Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 -<br>Part 3: Electromagnetic shielding performance tests for cabinets, racks and subracks           | EN 61587-3    | -           |
| IEC 62194           | -           | Method of evaluating the thermal performance of enclosures                                                                                                                             | EN 62194      | -           |
| IEC 62262           | -           | Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)                                                                    | EN 62262      | -           |
| IEC 62305-4         | -           | Protection against lightning -<br>Part 4: Electrical and electronic systems within structures                                                                                          | EN 62305-4    | -           |
| ISO 2533            | -           | Standard atmosphere                                                                                                                                                                    | -             | -           |
| ISO 3744            | -           | Acoustics - Determination of sound power levels of noise sources using sound pressure -<br>Engineering method in an essentially free field over a reflecting plane                     | EN ISO 3744   | -           |
| ISO 3864            | -           | Safety colours and safety signs                                                                                                                                                        | -             | -           |
| ISO 4892-2          | -           | Plastics - Methods of exposure to laboratory light sources -<br>Part 2: Xenon-arc lamps                                                                                                | EN ISO 4892-2 | -           |
| ETSI EN 300019-2-2- |             | Equipment Engineering (EE) - Environmental conditions and environmental tests for telecommunications equipment -<br>Part 2-2: Specification of environmental tests -<br>Transportation | -             | -           |

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## INTRODUCTION

IEC 61969-3 Ed.2.0 provides basic environmental test requirements to be used in the absence of local regulatory or application specific environmental test requirements. This provides manufacturers and users of generic outdoor enclosure solutions with minimum performance compliance criteria; thermal solutions pending on the environment an outdoor enclosure is subjected to. Since forced air heat dissipation and acoustic noise are closely related, noise limitations are typically defined by local regulatory limitations.

Typically, it becomes the responsibility of the outdoor enclosure vendor to provide a solution for thermal management within the local regulatory noise limitations.



# MECHANICAL STRUCTURES FOR ELECTRONIC EQUIPMENT – OUTDOOR ENCLOSURES –

## Part 3: Environmental requirements, tests and safety aspects

### 1 Scope

This part of IEC 61969 specifies a set of basic environmental requirements and tests, as well as safety aspects for outdoor enclosures under conditions of non-weatherprotected locations above ground.

The purpose of this standard is to define a minimum level of environmental performance in order to meet requirements of storage, transport and final installation. It is the intention to establish basic environmental performance criteria for outdoor enclosure compliance.

### 2 Normative references

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 60068 (all parts), *Environmental testing*

IEC 60417, *Graphical symbols for use on equipment*

IEC 60529, *Degrees of protection provided by enclosures (IP code)*

IEC 60695-11-10, *Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods*

IEC 60721-3-2, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 2: Transportation*

IEC 60721-3-4, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 4: Stationary use at non-weather-protected locations*

IEC 60825-1, *Safety of laser products – Part 1: Equipment specification and requirements*

IEC 60950 (all parts), *Information technology equipment – Safety*

IEC 61010, *Safety requirements for electrical equipment for measurement, control, and laboratory use*

IEC 61140 *Protection against electric shock - Common aspects for installation and equipment*

IEC 61439-5, *Low-voltage switchgear and control gear assemblies – Part 5: Assemblies for power distribution in public networks*

IEC 61587-1, *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*

IEC 61587-2, *Mechanical structures for electronic equipment – Tests for IEC 60917 and 60297 – Part 2: Seismic tests for cabinets and racks*

IEC 61587-3, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297 – Part 3: Electromagnetic shielding performance tests for cabinets, racks and subracks*

IEC 62194, *Methods of evaluating the thermal performance of enclosures*

IEC 62262, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*

IEC 62305-4, *Protection against lightning – Part 4: Electrical and electronic systems within structures*

ISO 2533, *Standard atmosphere*

ISO 3744, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane*

ISO 3864, *Graphical symbols – Safety colours and safety signs*

ISO 4892-2, *Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc lamps*

ETSI EN 300019-2-2, *Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 2-2: Specification of environmental tests; Transportation*