



**NSAI**  
Standards

Irish Standard  
I.S. EN IEC 61969-3:2020

# Mechanical structures for electrical and electronic equipment - Outdoor enclosures - Part 3: Environmental requirements, tests and safety aspects

**I.S. EN IEC 61969-3:2020**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN IEC 61969-3:2020 is the adopted Irish version of the European Document EN IEC 61969-3:2020, Mechanical structures for electrical and electronic equipment - Outdoor enclosures - Part 3: Environmental requirements, tests and safety aspects

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EUROPEAN STANDARD

**EN IEC 61969-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2020

ICS 31.240

Supersedes EN 61969-3:2012 and all of its amendments  
and corrigenda (if any)

English Version

**Mechanical structures for electrical and electronic equipment -  
Outdoor enclosures - Part 3: Environmental requirements, tests  
and safety aspects  
(IEC 61969-3:2020)**

Structures mécaniques pour équipement électrique et  
électronique - Enveloppes de plein air - Partie 3: Exigences  
et essais d'environnement, et aspects liés à la sécurité  
(IEC 61969-3:2020)

Mechanische Bauweisen für elektronische Einrichtungen -  
Außengehäuse - Teil 3: Umgebungsanforderungen,  
Prüfungen und Sicherheitsaspekte  
(IEC 61969-3:2020)

This European Standard was approved by CENELEC on 2020-07-13. 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: Rue de la Science 23, B-1040 Brussels**

**EN IEC 61969-3:2020 (E)****European foreword**

The text of document 48D/721/FDIS, future edition 3 of IEC 61969-3, prepared by SC 48D "Mechanical structures for electrical and electronic equipment" of IEC/TC 48 "Electrical connectors and mechanical structures for electrical and electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61969-3:2020.

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) 2021-04-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-07-13

This document supersedes EN 61969-3:2012 and all of its amendments and corrigenda (if any).

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

**Endorsement notice**

The text of the International Standard IEC 61969-3:2020 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 60068-2-5	NOTE	Harmonized as EN IEC 60068-2-5
IEC 60695-11-10	NOTE	Harmonized as EN 60695-11-10
IEC 60721-3-2	NOTE	Harmonized as EN IEC 60721-3-2
IEC 60721-3-4	NOTE	Harmonized as EN IEC 60721-3-4
IEC 60825-1	NOTE	Harmonized as EN 60825-1
IEC 61587-3	NOTE	Harmonized as EN 61587-3
IEC 62194	NOTE	Harmonized as EN 62194
IEC 62262	NOTE	Harmonized as EN 62262
IEC 62305-4	NOTE	Harmonized as EN 62305-4

## Annex ZA

### (normative)

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

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where 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 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-10	-	Environmental testing - Part 2-10: Tests - Test J and guidance: Mould growth	EN 60068-2-10	-
IEC 60068-2-11	-	Basic environmental testing procedures - Part 2-11: Tests - Test Ka: Salt mist	EN 60068-2-11	-
IEC 60068-2-14	-	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	-
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60068-2-30	-	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	-
IEC 60068-2-31	-	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	-
IEC 60068-2-60	-	Environmental testing - Part 2-60: Tests - Test Ke: Flowing mixed gas corrosion test	EN 60068-2-60	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
IEC 60950-1	-	Information technology equipment - Safety - Part 1: General requirements	EN 60950-1	-

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**IEC 61969-3**

Edition 3.0 2020-06

# **INTERNATIONAL STANDARD**

## **NORME INTERNATIONALE**

**Mechanical structures for electrical and electronic equipment – Outdoor enclosures –**

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

**Structures mécaniques pour équipement électrique et électronique – Enveloppes de plein air –**

**Partie 3: Exigences et essais d'environnement, et aspects liés à la sécurité**



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La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

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**IEC 61969-3**

Edition 3.0 2020-06

# **INTERNATIONAL STANDARD**

## **NORME INTERNATIONALE**

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**Mechanical structures for electrical and electronic equipment – Outdoor enclosures –**

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

**Structures mécaniques pour équipement électrique et électronique –**

**Enveloppes de plein air –**

**Partie 3: Exigences et essais d'environnement, et aspects liés à la sécurité**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### **MECHANICAL STRUCTURES FOR ELECTRICAL AND ELECTRONIC EQUIPMENT – OUTDOOR ENCLOSURES –**

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

#### **FOREWORD**

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International Standard IEC 61969-3 has been prepared by subcommittee 48D: Mechanical structures for electrical and electronic equipment, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment.

This third edition cancels and replaces the second edition published in 2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) alignment with the content of ETSI EN 300 019 and IEC 60721 series latest editions, particularly with the actualization of climate conditions;
- b) new requirements added to reflect market requirements on environmental issues;
- c) improvement on terminology and overall editorial improvement.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
48D/721/FDIS	48D/724/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This International Standard is to be used in conjunction with IEC 61969-1:2020.

A list of all parts in the IEC 61969 series, published under the general title *Mechanical structures for electrical and electronic equipment – Outdoor enclosures*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## INTRODUCTION

The products covered by IEC 61969 (all parts) are empty enclosures for outdoor locations, to be equipped with application-specific combinations of electrical and electronic equipment, and to be used at non-weather protected locations above ground.

IEC 61969 (all parts) consists of:

- a design guidelines general part (IEC 61969-1);
- a coordination dimensions standard (IEC 61969-2);
- an environmental requirements and tests, safety aspects standard (IEC 61969-3).

This document provides basic environmental requirements and tests, as well as safety aspects, to be used for outdoor enclosures in absence of local regulatory documents, or of application-specific environmental test requirements.

This document provides manufacturers and users of generic outdoor enclosures with minimum performance compliance criteria. The thermal management solution depends on the specific environment of the outdoor enclosure.

Since forced air heat dissipation and acoustic noise are closely related, noise limitations are typically defined by local regulatory documents.

It is responsibility of the outdoor enclosure vendor to provide a solution for thermal management within the local regulatory noise limitations.

## MECHANICAL STRUCTURES FOR ELECTRICAL AND 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-weather protected locations above ground.

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

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60068-2-1, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-10, *Environmental testing – Part 2-10: Tests – Test J and guidance: Mould growth*

IEC 60068-2-11, *Basic environmental testing procedures – Part 2-11: Tests – Test Ka: Salt mist*

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-27, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

IEC 60068-2-30, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60068-2-31, *Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens*

IEC 60068-2-60, *Environmental testing – Part 2-60: Tests – Test Ke: Flowing mixed gas corrosion test*

IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

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

IEC 60950-1, *Information technology equipment – Safety – Part 1: General requirements*



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