



Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN IEC 61969-3:2020

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

Mechanische Bauweisen für elektrische
und elektronische Einrichtungen -
Außengehäuse - Teil 3:
Umgebungsanforderungen, Prüfungen

07/2020



National Foreword

This European Standard EN IEC 61969-3:2020 was adopted as Luxembourgish Standard ILNAS-EN IEC 61969-3:2020.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

<https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

THIS PUBLICATION IS COPYRIGHT PROTECTED

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

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.

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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

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.

<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	-



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

CONTENTS

FOREWORD	3
INTRODUCTION	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 Coordination dimensions	7
5 Environmental requirements, tests and safety aspects – Classification of environmental conditions	7
6 Test conditions	8
6.1 General	8
6.2 Climatic tests	8
6.3 Biological tests	9
6.4 Tests of resistance against chemically active substances	9
6.5 Tests of resistance against mechanically active substances	9
7 Mechanical tests	10
7.1 General	10
7.2 Transport tests	10
7.3 Lifting and stiffness test	11
8 Safety aspects	11
8.1 General	11
8.2 Locking devices	11
8.3 Vandalism resistance	11
8.4 Firearms resistance (optional)	11
9 Seismic requirements	12
10 Electromagnetic shielding performance	12
11 Thermal management	12
12 Noise emission	12
Bibliography	13
Table 1 – Climatic conditions for environmental classes 1 and 2	8
Table 2 – Biological tests	9
Table 3 – Tests of resistance against chemically active substances	9
Table 4 – Tests of resistance against mechanically active substances	9
Table 5 – Vibration and shock test	10