SLOVENSKI STANDARD
SIST EN IEC 60670-1:2021

01-oktober-2021

Nadomešča:
SIST EN 60670-1:2006
SIST EN 60670-1:2006/A1:2013
SIST EN 60670-1:2006/IS1:2009

Škatle in ohišja za električno opremo za gospodinjstvo in podobne nepremične električne inštalacije - 1. del: Splošne zahteve

Boxes and enclosures for electrical accessories for household and similar fixed electrical installations - Part 1: General requirements

Dosen und Gehäuse für Installationsgeräte für Haushalt und ähnliche ortsfeste elektrische Installationen - Teil 1: Allgemeine Anforderungen

Boîtes et enveloppes pour appareillage électrique pour installations électriques fixes pour usages domestiques et analogues - Partie 1: Exigences générales

Ta slovenski standard je istoveten z: **EN IEC 60670-1:2021**

ICS:

29.120.99	Druga električna dodatna oprema	Other electrical accessories

SIST EN IEC 60670-1:2021 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 60670-1

April 2021

ICS 29.120.10

Supersedes EN 60670-1:2005, EN 60670-1:2005/IS1:2009 and all of its amendments and corrigenda (if any)

English Version

Boxes and enclosures for electrical accessories for household and similar fixed electrical installations - Part 1: General requirements (IEC 60670-1:2015)

Boîtes et enveloppes pour appareillage électrique pour installations électriques fixes pour usages domestiques et analogues - Partie 1: Exigences générales (IEC 60670-1:2015)

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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

Ref. No. EN IEC 60670-1:2021 E

European foreword

This document (EN IEC 60670-1:2021) consists of the text of IEC 60670-1:2015 prepared by SC 23B "Plugs, socket-outlets and switches" of IEC/TC 23 "Electrical accessories".

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)	2021-10-16
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2023-04-09

This document supersedes EN 60670-1:2005 and all of its amendments and corrigenda (if any).

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For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of EN IEC 60670-1:2021/A11:2021.

Endorsement notice

The text of the International Standard IEC 60670-1:2015 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 60670 (series)	NOTE	Harmonized as EN 60670 (series)
IEC 60670-21	NOTE	Harmonized as EN 60670-21
IEC 60670-22	NOTE	Harmonized as EN 60670-22
IEC 60670-23	NOTE	Harmonized as EN 60670-23
IEC 60670-24	NOTE	Harmonized as EN 60670-24
IEC 62444	NOTE	Harmonized as EN 62444
ISO 1456	NOTE	Harmonized as EN ISO 1456
ISO 2081	NOTE	Harmonized as EN ISO 2081

IEC 60670-1

Edition 2.0 2015-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Boxes and enclosures for electrical accessories for household and similar fixed electrical installations – Part 1: General requirements

Boîtes et enveloppes pour appareillage électrique pour installations électriques fixes pour usages domestiques et analogues – Partie 1: Exigences générales

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 29.120.10

ISBN 978-2-8322-2337-6

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

BOXES AND ENCLOSURES FOR ELECTRICAL ACCESSORIES FOR HOUSEHOLD AND SIMILAR FIXED ELECTRICAL INSTALLATIONS –

Part 1: General requirements

FOREWORD

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International Standard IEC 60670-1 has been prepared by subcommittee SC 23B: Plugs, socket-outlets and switches, of IEC technical committee 23: Electrical accessories.

This second edition cancels and replaces the first edition published in 2002 and its Amendment 1:2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition: Review of classification Table 1.

The text of this standard is based on the following documents:

FDIS	Report on voting
23B/1176/FDIS	23B/1184/RVD

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

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

In this publication, the following print types are used:

In this standard, the following print types are used:

– requirements proper: in roman type;
– *test specifications: in italic type;*
– explanatory matter: in smaller roman type.

A list of all parts in the IEC 60670 series, published under the general title *Boxes and enclosures for electrical accessories for household and similar fixed electrical installations* can be found on the IEC website.

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

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

BOXES AND ENCLOSURES FOR ELECTRICAL ACCESSORIES FOR HOUSEHOLD AND SIMILAR FIXED ELECTRICAL INSTALLATIONS –

Part 1: General requirements

1 Scope

This part of IEC 60670 applies to boxes, enclosures and parts of enclosures (hereafter called "boxes" and "enclosures") for electrical accessories with a rated voltage not exceeding 1 000 V a.c. and 1 500 V d.c. intended for household or similar fixed electrical installations, either indoors or outdoors.

Boxes and enclosures complying with this standard are suitable for use at ambient temperatures not normally exceeding +40 °C, but their average over a period of 24 h does not exceed +35 °C, with a lower limit of the ambient air temperature of −5 °C.

During the installation the temperature may be outside the above temperature range according to the classification of the boxes and the enclosures.

This International Standard is intended to apply to boxes and enclosures for electrical accessories within the scope of IEC technical committee 23.

This standard may be used as a reference document for other IEC technical committees and subcommittees.

A box or an enclosure which is an integral part of an electrical accessory and provides protection for that accessory against external influences (for example mechanical impact, ingress of solid objects or water, etc.) is covered by the relevant standard for such an accessory.

This standard does not apply to

– ceiling roses;
– luminaire supporting couplers;
– boxes, enclosures and parts of enclosures specifically designed to be used for cable trunking and ducting systems complying with IEC 61084 and which are not intended to be installed outside of these systems.

2 Normative references

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.

IEC 60068-2-75:1997[1], *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

[1] First edition. This edition has been replaced in 2014 by IEC 60068-2-75:2014, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60112:2003, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60423:2007, *Conduit systems for cable management – Outside diameters of conduits for electrical installations and threads for conduits and fittings*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
IEC 60529:1989/AMD1:1999/AMD2:2013, *Degrees of protection provided by enclosures (IP Code)*

IEC 60695-2-11:2000[2], *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products*

IEC 60695-10-2:2003[3], *Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test*

IEC 60981:2004, *Extra-heavy duty rigid steel conduits*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 61140:2001, *Protection against electric shock – Common aspects for installation and equipment*
IEC 61140:2001/AMD1:2004, *Protection against electric shock – Common aspects for installation and equipment*

ISO/IEC Guide 51, *Safety aspects – Guidelines for their inclusion in standards*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
enclosure
combination of parts, such as boxes, covers, cover-plates, lids, box extensions, accessories, etc., providing after assembly and installation as in normal use, an appropriate protection against external influences, and a defined protection against contact with enclosed live parts from any accessible direction

Note 1 to entry: See Annex A.

3.2
box
part of an enclosure provided with means for fixing a cover, cover-plate, accessory, etc., and intended to receive accessories (such as socket-outlets, switches, etc.)

3.3
box extension
part of an enclosure which is intended to extend a box for the purpose of either increasing the internal volume of the box or enclosure or to adjust for mounting the box flush or semi-flush with the finished surface of a wall or the like

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2 First edition. This edition has been replaced in 2014 by IEC 60695-2-11:2014, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

3 Second edition. This edition has been replaced in 2014 by IEC 60695-10-2:2014, *Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test method*

3.4
lid
cover
cover-plate
part of an enclosure, not integral with or part of an accessory, which may either retain an accessory in position or enclose it

3.5
raised cover
cover intended for mounting directly onto a box to provide for the attachment of accessories and to increase the internal volume of the enclosure

Note 1 to entry: The centre portion of the cover is raised to accommodate a specific wall or ceiling thickness and to permit the mounting of the accessory on it, flush with the surface of the wall or ceiling.

3.6
exposed conductive part
conductive part of electrical equipment, which can be touched and which is not normally live, but which can become live when basic insulation fails

3.7
surface mounting box or enclosure
box or enclosure which is intended for mounting on a surface

Note 1 to entry: See Annex A.

3.8
flush-mounting box or enclosure
box or enclosure which is intended for mounting flush with the surface

Note 1 to entry: See Annex A.

3.9
semi-flush mounting box or enclosure
box or enclosure which is intended to fit within a mounting surface and partially projects from the mounting surface

3.10
cable gland
device designed to permit the entry of a cable, flexible cable or insulated conductor into an enclosure, and which provides sealing and retention and eventually may also provide other functions such as earthing, bonding, insulation, cable guarding, strain relief or a combination of these

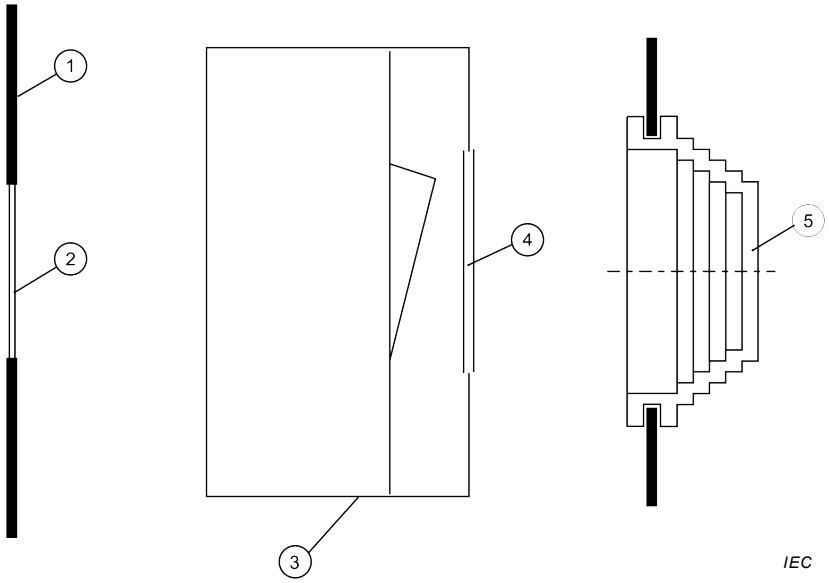
3.11
seal
material used to fill up the space between the inside of a gland and the cable passing through, usually compressed by the gland and thereby forming a joint

3.12
gasket
material introduced between mating surfaces of an enclosure which in compression forms a joint

3.13
grommet
component used to support and protect the cable or conduit at the point of entry, which may also prevent the ingress of moisture or contaminants

Note 1 to entry: See Figure 1.

[SOURCE: IEC 60050-581:2008, 581-27-19, modified]



Key

1 box

2 entry membrane

3 enclosure

4 protective membrane

5 grommet

Figure 1 – Examples of membranes and grommets

3.14
entry membrane
component or an integral part of an enclosure used to protect the cable which may be used to support the cable or conduit at the point of entry

Note 1 to entry: An entry membrane may also prevent the ingress of moisture or contaminants and may be part of a grommet (see Figure 1).

3.15
protecting membrane
component or an integral part of an enclosure that is not intended to be penetrated in normal use and is intended to provide protection against ingress of water or solid objects and/or to allow the operation of an accessory

Note 1 to entry: See Figure 1.

3.16
composite material
combination of metal and insulating material

3.17
spout
hub
open entry of a box permitting the insertion and containment of a conduit

3.18
cable retention
ability to limit the displacement of a fitted cable against pull forces

3.19
cable anchorage
ability to limit the displacement of a fitted flexible cable against pull and push forces and torques

3.20
blanking-plug
component used to close an open inlet or an open knock out

4 General requirements

Boxes and enclosures shall be so designed and constructed that, in normal use, their performance is reliable and safety is achieved by reducing risk to a tolerable level, as defined in ISO/IEC Guide 51.

Compliance is checked by meeting all the relevant requirements and tests specified.

5 General notes on tests

5.1 Tests according to this standard are type tests.

Unless otherwise specified, boxes and enclosures are tested as delivered.

Accessories complying with other standards are not tested again.

Tests on boxes and enclosures of insulating material shall be performed after a preconditioning of at least 10 days at ambient temperature and relative air humidity of between 45 % and 85 %.

Unless otherwise specified, the tests are carried out in the order of the clauses, at an ambient temperature between +15 °C and +35 °C on a set of three specimens.

In case of doubt, the tests are made at an ambient temperature of +(20 ± 5) °C on a set of three new specimens.

5.2 The specimens are submitted to all the relevant tests and the requirements are satisfied if all the tests are met.

If one of the specimens does not satisfy a test due to an assembly or a manufacturing fault, that test and any preceding ones which may have influenced the results of the test shall be repeated and also the tests which follow shall be made in the required sequence on another full set of specimens, all of which shall comply with the requirements.

NOTE When submitting the first set of specimens, the applicant can also submit the additional set of specimens which may be necessary, should one specimen fail. The testing station will then, without further request, test the additional set of specimens and will only reject if a further failure occurs. If the additional set of specimens is not submitted at the same time, the failure of one specimen will entail rejection.

6 Ratings

See the relevant part of Parts 21 to 24 of the IEC 60670 series.