

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Boxes and enclosures for electrical accessories for household and similar fixed electrical installations –  
Part 21: Particular requirements for boxes and enclosures with provision for suspension means**

**Boîtes et enveloppes pour appareillage électrique pour installations électriques fixes pour usages domestiques et analogues –  
Partie 21: Règles particulières concernant les boîtes et enveloppes avec dispositifs de suspension**



**THIS PUBLICATION IS COPYRIGHT PROTECTED**  
**Copyright © 2024 IEC, Geneva, Switzerland**

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Secretariat  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

#### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

#### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

#### IEC publications search - [webstore.iec.ch/advsearchform](http://webstore.iec.ch/advsearchform)

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

#### IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [sales@iec.ch](mailto:sales@iec.ch).

#### IEC Products & Services Portal - [products.iec.ch](http://products.iec.ch)

Discover our powerful search engine and read freely all the publications previews, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

---

#### A propos de l'IEC

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.

#### A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

#### Recherche de publications IEC -

#### [webstore.iec.ch/advsearchform](http://webstore.iec.ch/advsearchform)

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

#### Service Clients - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: [sales@iec.ch](mailto:sales@iec.ch).

#### IEC Products & Services Portal - [products.iec.ch](http://products.iec.ch)

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications, symboles graphiques et le glossaire. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 500 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 25 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

---

**Boxes and enclosures for electrical accessories for household and similar fixed electrical installations –  
Part 21: Particular requirements for boxes and enclosures with provision for suspension means**

**Boîtes et enveloppes pour appareillage électrique pour installations électriques fixes pour usages domestiques et analogues –  
Partie 21: Règles particulières concernant les boîtes et enveloppes avec dispositifs de suspension**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

---

ICS 29.120.99

ISBN 978-2-8327-0045-7

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references .....	5
3 Terms and definitions .....	5
4 General requirements .....	6
5 General remarks on tests .....	6
6 Ratings.....	6
7 Classification.....	7
8 Marking .....	7
9 Dimensions.....	7
10 Protection against electric shock .....	7
11 Provision for earthing .....	7
12 Construction .....	8
13 Resistance to ageing, protection against ingress of solid objects and against harmful ingress of water .....	8
14 Insulation resistance and electric strength .....	8
15 Mechanical strength .....	8
16 Resistance to heat.....	12
17 Creepage distances, clearances and distances through sealing compound.....	13
18 Resistance of insulating material to abnormal heat and to fire .....	13
19 Resistance to tracking .....	13
20 Resistance to corrosion .....	13
21 Electromagnetic compatibility (EMC) .....	13
Figure 101 – Examples of suspension means .....	6
Figure 102 – Examples of boxes and enclosures with provision for suspension means .....	9
Figure 103 – Verification of suspension means intended to be used on a wall.....	11
Figure 104 – Inclined ceiling test.....	12

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**BOXES AND ENCLOSURES FOR ELECTRICAL ACCESSORIES FOR  
HOUSEHOLD AND SIMILAR FIXED ELECTRICAL INSTALLATIONS –****Part 21: Particular requirements for boxes and  
enclosures with provision for suspension means**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60670-21 has been prepared by subcommittee 23B: Plugs, socket-outlets and switches, of IEC technical committee 23: Electrical accessories. It is an International Standard.

This second edition cancels and replaces the first edition published in 2004 and Amendment 1:2016. This edition constitutes a technical revision.

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

- a) Complete revision of the tests and requirements of the suspension means.

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

Draft	Report on voting
23B/1534/FDIS	23B/1552/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

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 installations*, can be found on the IEC website.

This document is to be used in conjunction with IEC 60670-1:2024. It lists the changes necessary to convert that standard into a specific standard for housing protective devices and other power dissipating electrical equipment.

Where this document states "addition", "modification" or "replacement", the relevant requirement, test specifications or explanatory matter in IEC 60670-1:2024 shall be adapted accordingly.

Clauses and subclauses, notes, figures or tables which are additional to those in IEC 60670-1:2024 are numbered starting from 101.

Additional annexes to IEC 60670-1:2024 are numbered AA, BB, etc.

In this publication the following print types are used:

- requirements proper: in roman type.
- *test specifications: in italic type.*
- notes: in smaller roman type.

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

- reconfirmed,
- withdrawn, or
- revised.

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

## Part 21: Particular requirements for boxes and enclosures with provision for suspension means

### 1 Scope

Clause 1 of IEC 60670-1:2024 is applicable with the following modification:

*Addition after the third paragraph:*

This document applies to boxes and enclosures for ceiling and wall mounting with provision for suspension means.

### 2 Normative references

Clause 2 of IEC 60670-1:2024 is applicable.

### 3 Terms and definitions

Clause 3 of IEC 60670-1:2024 is applicable with the following modification:

*Addition:*

#### 3.101

##### **box with provision for suspension means**

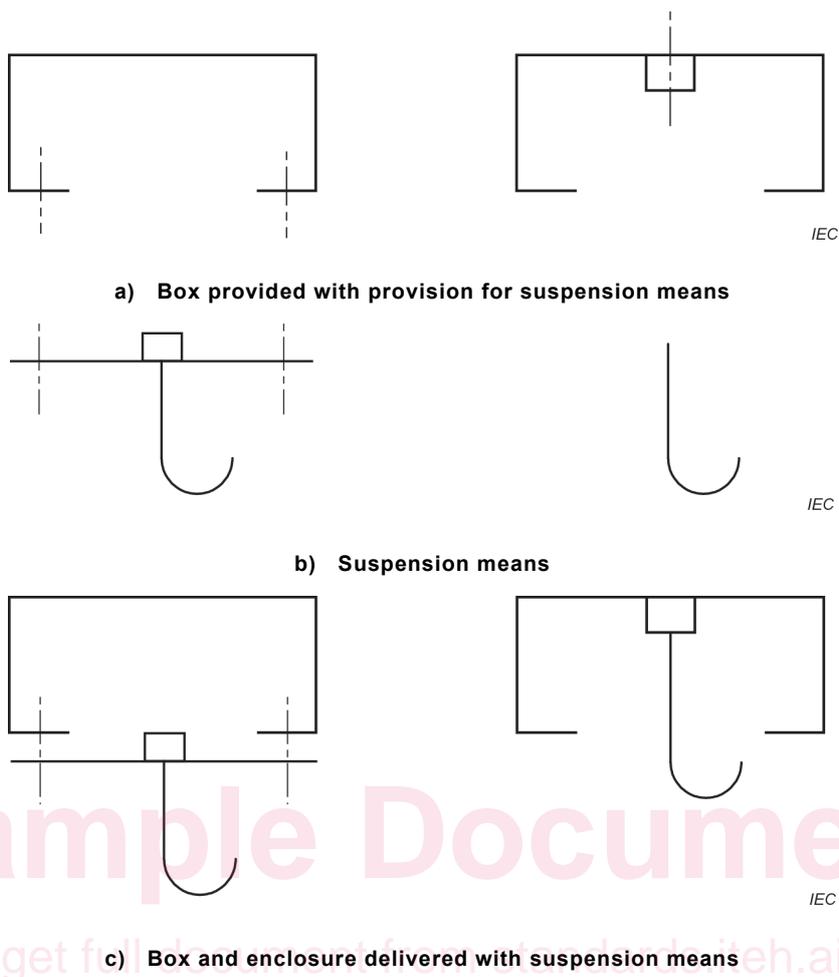
box intended to be used for suspending and supporting mechanical loads and which accepts the suspension means

#### 3.102

##### **suspension means**

means comprising any necessary components (hooks, brackets, etc.) which may be delivered with the box and enclosure or supplied separately

Note 1 to entry: Examples of suspension means are shown in Figure 101.



**Figure 101 – Examples of suspension means**

#### **4 General requirements**

Clause 4 of IEC 60670-1:2024 is applicable.

#### **5 General remarks on tests**

Clause 5 of IEC 60670-1:2024 is applicable.

#### **6 Ratings**

Void.

## 7 Classification

Clause 7 of IEC 60670-1:2024 is applicable with the following modification:

*Addition to Table 1:*

7.101 The provision for suspension means <sup>b</sup>	7.101.1 For supporting a luminaire.
	7.101.2 For supporting a ceiling fan.
<sup>b</sup> The suspension means may be provided with the box or not.	

## 8 Marking

Clause 8 of IEC 60670-1:2024 is applicable with the following modification:

### 8.1 General

*Addition after item k):*

- l) for boxes and enclosures classified according to 7.101.1, the maximum supported mass in kilograms declared by the manufacturer.

NOTE 101 In the following countries boxes for luminaire support are marked "For luminaire support". Where boxes are intended to support a mass greater than 15,8 kg, the mass is to be marked: US.

NOTE 102 In the following country the marking in kilograms shall reflect a safety factor of 5 times: DK.

## 9 Dimensions

Clause 9 of IEC 60670-1:2024 is applicable.

## 10 Protection against electric shock

Clause 10 of IEC 60670-1:2024 is applicable with the following modification:

*Addition:*

Conductive parts of suspension means inside the box or enclosure shall be:

- protected by a layer of insulating material which complies with the tests for insulating linings, or
- located such that it will not come in contact with electrical conductors or live parts, or
- reliably connected to the earthing means complying with requirements of 11.1 when fitted as for normal use.

## 11 Provision for earthing

Clause 11 of IEC 60670-1:2024 is applicable.