

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Boxes and enclosures for electrical accessories for household and similar fixed electrical installations –
Part 23: Particular requirements for floor boxes and enclosures**

**Boîtes et enveloppes pour appareillage électrique pour installations électriques fixes pour usages domestiques et analogues –
Partie 23: Règles particulières pour les boîtes et enveloppes de sol**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 23: Particular requirements for floor boxes and enclosures

FOREWORD

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This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC 60670-23 edition 1.1 contains the first edition (2006-04) [documents 23B/814/FDIS and 23B/820/RVD] and its amendment 1 (2016-02) [documents 23B/1199/FDIS and 23B/1204/RVD].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

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

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

This part of IEC 60670 shall be used in conjunction with IEC 60670-1 ~~(2002)~~. It lists the changes necessary to convert that standard into a specific standard for floor boxes and enclosures.

In this publication, the following print types are used:

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

Subclauses, figures, tables or notes which are additional to those in Part 1 are numbered starting from 101.

The IEC 60670 series comprises the following parts, under the general title *Boxes and enclosures for electrical accessories for household and similar fixed electrical installations*:

- Part 1: General requirements
- Part 21: Particular requirements for boxes and enclosures with provision for suspension means
- Part 22: Particular requirements for connecting boxes and enclosures
- Part 23: Particular requirements for floor boxes and enclosures
- Part 24: Particular requirements for enclosures for housing protective devices and similar power consuming devices

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site 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
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BOXES AND ENCLOSURES FOR ELECTRICAL ACCESSORIES FOR HOUSEHOLD AND SIMILAR FIXED ELECTRICAL INSTALLATIONS –

Part 23: Particular requirements for floor boxes and enclosures

1 Scope

This clause of Part 1 is applicable except as follows:

Addition after the fourth paragraph:

This standard applies to boxes and enclosures ~~intended to be installed in any kind of floor, and to protect accessories against load up to and including 1 000 N.~~

Flush floor boxes and flush floor enclosures are intended to protect accessories against a load up to and including 1 000 N.

NOTE Outdoor requirements are under consideration.

2 Normative references

This clause of Part 1 is applicable.

3 Definitions

This clause of Part 1 is applicable with the following additions:

<http://standards.iteh.ai/catalog/standards/iec/fca26794-a468-400f-bdfc-dae962b2fla6/iec-60670-23-2006>

3.106 finished floor (for indoor application)

floor which carries the load and which is completed with or without a floor covering material such as carpet, tile, vinyl or wood

3.107

dry treatment of floor

process for cleaning and/or care by which the floor is treated without liquids or with only a small quantity of liquid. The required agents are applied and spread in such quantities that no pools are formed, and soaking of the floor covering does not occur

NOTE Examples for dry treatment are: Sweeping with a broom or carpet-sweeper, vacuum cleaning, brushing, cleaning with a dry cleaning powder, dry shampoo treatment, wet shampooing of carpets, treatment with cleaning litter (liquid chemical cleaning agent on a solid material used as carrier, e.g. soaked sawdust, damp cloth, etc.).

3.108

wet treatment of floor

process for cleaning and/or care by which the floor is treated with liquid agents such that pools of liquid, or soaking of the floor covering for a brief period of time, cannot be excluded

NOTE Examples of wet treatment are: wet scrubbing, manual or mechanical wiping.

4 General requirements

This clause of Part 1 is applicable.

5 General notes on tests

This clause of Part 1 is applicable.

6 Ratings

This clause of Part 1 is not applicable.

7 Classification

This clause of Part 1 is applicable except as follows:

7.2 ~~— Addition:~~

7.2 — The method of installation^a	7.2.101 — According to floor treatment	7.2.101.1 — Floor boxes or enclosures intended to be installed in floor subjected to dry treatment
		7.2.101.2 — Floor boxes or enclosures intended to be installed in floor subjected to wet treatment
		7.2.101.3 — Floor boxes or enclosures having a minimum IPX4 rating, intended to be installed in floor subjected to wet treatment

Note : In Spain the floor boxes and enclosures need a minimum IPX4 rating.

~~7.7 This subclause is not applicable.~~

~~7.101 — According to the type of lid~~

~~7.101.1 — Enclosure with a removable lid~~

~~7.101.2 — Enclosure with a fixed lid~~

~~7.8 This subclause is not applicable.~~

Addition to Table 1:

7.101 The type of lid	7.101.1 Enclosure with a removable lid	
	7.101.2 Enclosure with a fixed lid	
7.102 According to floor treatment	7.102.1 Floor boxes or enclosures intended to be installed in floor subjected to dry treatment	
	7.102.2 Floor boxes or enclosures intended to be installed in floor subjected to wet treatment	
	7.102.3 Floor boxes or enclosures having a minimum IPX4 rating, intended to be installed in floor subjected to wet treatment NOTE 101 The IPX4 rating is fulfilled with the lid, if any, closed and without any cables connected.	

8 Marking

This clause of Part 1 is applicable except as follows:

8.1 *Replacement of c) by:*

c) the IP code marking against harmful ingress of water applies only to floor enclosures as classified according to ~~7.2.101.3~~ 7.102.3.

Replacement of the 2nd paragraph by:

The IP code marking, if applicable, shall be visible when in normal use.

Addition after item j):

k) a marking shall be placed inside the box (e.g. under the cover...) describing the intended use for “dry treatment only” of the floor, or “not suitable for wet treatment” of the floor.

NOTE The marking may be a label or a graphic symbol.

9 Dimensions

This clause of Part 1 is applicable.

10 Protection against electric shock

This clause of Part 1 is applicable.

11 Provision for earthing

This clause of Part 1 is applicable except as follows:

11.2 This subclause is not applicable.

12 Construction

12.101 Openings for the passage of cables for connected equipment

Openings for the passage of cables and cords for connected equipment in floor boxes and enclosures shall protect these cables or cords from damage.

When in use (cable or cord attached to equipment), all openings of a surface accessible flush floor box or enclosure classified according to ~~7.2.101.1~~ 7.102.1, need not be covered if one dimension of each uncovered opening is less than 20 mm in one direction. Such openings are permitted in floor boxes or enclosures classified according to ~~7.2.101.2~~ 7.102.2.

In the unused condition, all openings of a surface accessible flush floor box or enclosure classified according to ~~7.2.101.1~~ 7.102.1 shall have at least a degree of protection of IP 20 or shall be able to be closed and the closure shall be flush with the surface to which it is attached. Such openings are permitted in floor boxes or enclosures classified according to ~~7.2.101.2~~ 7.102.2.

Compliance is checked by inspection, measurement and by the test of 13.2.

12.102 Enclosures shall protect the accessories and inserted plugs from traffic load.

Enclosures classified according to 7.101.2 shall be so designed that the lid cannot be removed without the use of a tool.

Compliance is checked by inspection.

12.103 Floor enclosures as classified according to ~~7.2.101.2~~ 7.102.2 shall have a protuberance from the floor greater than 19 mm.

Compliance is checked by measurement.

13 Resistance to ageing, protection against ingress of solid objects and against harmful ingress of water

This clause of Part 1 is applicable except as follows:

13.3.3 *Replacement of the first paragraph:*

Immediately after the test, there shall be no water in the box or enclosure.

13.3.101

Floor enclosures as classified under ~~7.2.101.4~~ 7.102.1 shall have a minimum degree of protection IP 20 when they are mounted as for normal use.

Floor enclosures as classified under ~~7.2.101.2~~ 7.102.2 shall be subjected to the test for a degree of protection IP X4 according to IEC 60529, when they are mounted as follows:

The floor enclosure shall be mounted as instructed to a level surface of impermeable material with the lid(s), if any, closed and without any cables connected. The mounting surface shall extend 50 mm in each direction from the perimeter of the floor box cover at its interface with the mounting surface. All joints of the floor enclosure assembly greater than 19 mm above the plane of the floor shall be permitted to be masked by impermeable tape or other suitable impermeable material.

Floor enclosures as classified under ~~7.2.101.3~~ 7.102.3 shall be subjected to the test for a degree of protection IP X4 according to IEC 60529, when they are mounted as follows:

The floor enclosure shall be mounted as instructed to a level surface of impermeable material with the lid(s), if any, closed and without any cables connected. The mounting surface shall extend 50 mm in each direction from the perimeter of the floor box cover at its interface with the mounting surface.

Immediately after the test, there shall be no water in the box or enclosure.

14 Insulation resistance and electric strength

This clause of Part 1 is applicable.

15 Mechanical strength

This clause of Part 1 is applicable except as follows:

15.3 15.4 *Addition after the first paragraph:*

For floor boxes or enclosures the height of fall for impact test (Table 8) is 500 mm.

15.101 Compression test for all floor mounting boxes

Boxes suitable for mounting in floors shall withstand the load as expected in normal use.