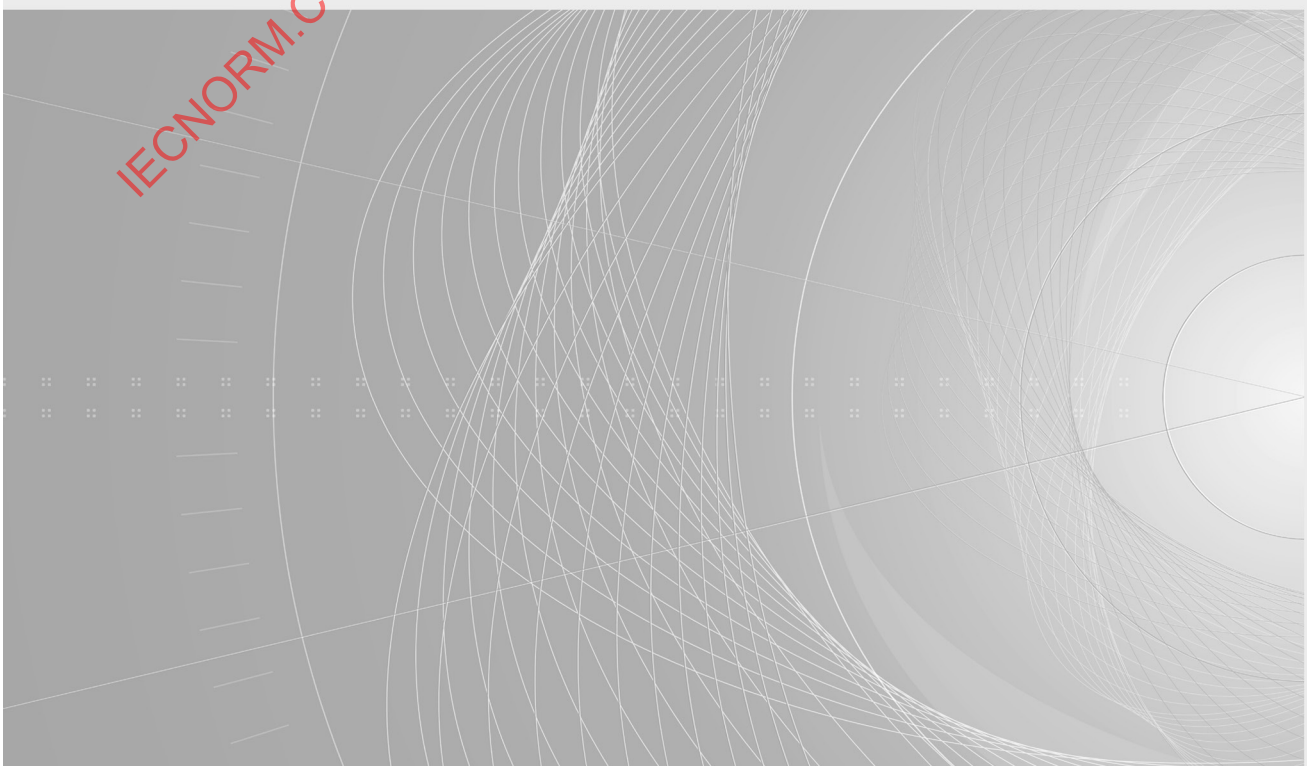
IEC 60884-2-2

Edition 3.0 2025-02
REDLINE VERSION

INTERNATIONAL STANDARD

Plugs and socket-outlets for household and similar purposes – Part 2-2: Particular requirements for socket-outlets for appliances



IEC 60884-2-2:2025-02 RLV(en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD AND SIMILAR PURPOSES –

Part 2-2: Particular requirements for socket-outlets for appliances

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.
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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.

This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60884-2-2:2006. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60884-2-2 has been prepared by subcommittee 23B: Plugs, socket-outlets and switches, of IEC technical committee 23: Electrical accessories. It is an International Standard.

This third edition cancels and replaces the second edition published in 2006. This edition constitutes a technical revision.

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

a) alignment to IEC 60884-1 fourth edition.

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

Draft	Report on voting
23B/1544/FDIS	23B/1559/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. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

This document is to be used in conjunction with IEC 60884-1:2022.

This document supplements or modifies the corresponding clauses in IEC 60884-1:2022, so as to convert that publication into the IEC standard: Particular requirements for socket-outlets for appliances.

When a particular subclause of IEC 60884-1:2022 is mentioned in this document, that subclause applies as far as reasonable. Where this document states "addition", "modification" or "replacement", the relevant text of IEC 60884-1:2022 is to be adapted accordingly.

In this document the following print types are used:

– requirements proper: in roman type;
– *test specification: in italic type;*
– explanatory notes: in small roman type.

Subclauses, notes, figures and tables which are additional to those in IEC 60884-1:2022 are numbered starting from 101.

A list of all parts in the IEC 60884 series, published under the general title *Plugs and socket-outlets for household and similar purposes*, can be found on the IEC website.

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- reconfirmed,
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PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD AND SIMILAR PURPOSES –

Part 2-2: Particular requirements for socket-outlets for appliances

1 Scope

IEC 60884-1:2022, Clause 1 is applicable except as follows.

Replacement of the first paragraph:

This part of IEC 60884 applies to socket-outlets for AC only, with or without earthing contact, with a rated voltage not exceeding 250 V and a rated current not exceeding 16 A, which are integrated or intended to be incorporated in or fixed to appliances, hereafter referred to as socket-outlets for appliances.

Addition after the ~~fourth~~ fifth paragraph (i.e., after the first dashed list):

~~Socket-outlets for appliances are provided with means for fixing into appropriate mounting boxes, if intended also for use in fixed installations.~~

Socket-outlets for appliances are intended to be used in stationary equipment and appliances, for example, in office machines, ~~computers, audio-visual and video~~ ICT equipment, range (cooker) hoods, ranges, etc.

If necessary, the use of socket-outlets for appliances is indicated in the standards for the appropriate equipment or appliance.

~~The temperature around socket-outlets for appliances must not exceed 35 °C.~~

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 60884-1:2022, Clause 2 is applicable except as follows.

Addition:

~~IEC 60068-2-75, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*~~

IEC 60884-1:2022, *Plugs and socket-outlets for household and similar purposes – Part 1: General requirements*

IEC 61210, *Connecting devices – Flat quick-connect terminations for electrical copper conductors – Safety requirements*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

IEC 60884-1:2022, Clause 3 is applicable except as follows.

~~**3.6 *Replacement:***~~

~~**socket-outlet for appliances**~~
~~socket-outlet integral with, or intended to be incorporated in, or fixed to, an electrical appliance~~

Addition:

3.101
socket-outlet for appliances
socket-outlet intended to be integrated or incorporated in, or fixed to appliances

3.~~101~~102
flat quick-connect termination
electrical connection consisting of a male tab and female connector which can be readily inserted and withdrawn without the use of a tool

Note 1 to entry: Other terms, such as "snap-on connector", "flat push-on connector" are sometimes used.

3.~~102~~103
female connector
portion of a flat quick-connect termination which is pushed on to the male tab

3.~~103~~104
male tab
portion of a flat quick-connect termination which receives the female connector

4 General requirements

IEC 60884-1:2022, Clause 4 is applicable except as follows:

Addition:

Requirements for portable socket-outlets are not applicable.

5 General ~~notes~~ remarks on tests

IEC 60884-1:2022, Clause 5 is applicable except as follows.

Addition:

5.101 Connections for socket-outlets for appliances

If socket-outlets for appliances are provided with male tabs of flat quick-connect terminations, new female connectors shall be used for each test according to Clause 19, Clause 20 and Clause 21.

These female connectors shall be made from unplated copper alloy.

6 Ratings

IEC 60884-1:2022, Clause 6 is applicable except as follows.

~~6.1~~ *Addition:*

For socket-outlets for appliances, Table ~~1~~2 applies up to and including a rated current of 16 A and up to and including a rated voltage of 250 V.

7 Classification

IEC 60884-1:2022, Clause 7 is applicable.

8 Marking

IEC 60884-1:2022, Clause 8 is applicable.

9 Checking of dimensions

IEC 60884-1:2022, Clause 9 is applicable.

10 Protection against electric shock

IEC 60884-1:2022, Clause 10 is applicable.

11 Provision for earthing

IEC 60884-1:2022, Clause 11 is applicable.

12 Terminals and terminations

IEC 60884-1:2022, Clause 12 is applicable except as follows.

12.1 General

~~**12.1.1** *Addition after the first paragraph:*~~

Replacement of the second paragraph with:

Socket-outlets for appliances shall be provided with screw-type terminals, screwless terminals or male tabs of flat quick-connect terminations.

12.2 Terminals with screw clamping for external copper conductors

~~*Notes a and b of Table 3 are not applicable.*~~

Deletion of footnotes a and b of Table 4.

Addition:

12.101 Flat quick-connect terminations

12.101.1 General

Male tabs and female connectors to be used for test purposes shall comply with IEC 61210.

12.101.~~1~~2 Constructional requirements

12.101.~~1~~2.1 Male tabs shall be of nominal sizes:

2,8 mm × 0,8 mm or

4,8 mm × 0,8 mm or

6,3 mm × 0,8 mm,

as detailed in IEC 61210.

Compliance is checked by measuring three specimens, all of which shall comply with the dimensional requirements of IEC 61210.

Round dimple indents, rectangular dimple indents, hole indents or provisions for non-reversible flat quick-connect terminations, if any, shall also comply with IEC 61210.

12.101.~~1~~2.2 Male tabs shall be made from copper or copper alloy (bare or tin plated). Materials or coatings other than those specified may be used, provided that their electrical and mechanical characteristics are no less reliable, particularly with regard to resistance to corrosion, stability of contact resistance and mechanical strength.

12.101.~~1~~2.3 Male tabs shall have adequate strength to allow the application and removal of female connectors without damage to the socket-outlet so as to impair compliance with this document.

Compliance is checked by applying, without jerks, axial forces equal to those shown in Table 101.

No displacement or damage shall occur which might impair further use.

Table 101 – Forces to be applied to tabs

Male tab size (nominal) mm	Push* N	Pull* N
2,8 × 0,8	50	40
4,8 × 0,8	60	50
6,3 × 0,8	80	70
* These values are the maximum allowed for the insertion and withdrawal of a female connector onto and from a male tab.		

12.101.~~1~~2.4 Male tabs shall be adequately spaced to allow the connection of the appropriate female connectors.

Compliance is checked by applying an appropriate female connector to each male tab; during this operation, no strain or distortion shall occur to any of the tabs or to their adjacent parts, nor shall the creepage distance or clearance be reduced below those specified in Clause 27.

12.101.~~2~~3 Electrical requirements

Male tab sizes shall be related to the rated current of the socket-outlet as shown in Table 102.

Table 102 – Relationship between tab size and rated current

Male tab size (nominal) mm	Maximum rated current A
2,8 × 0,8	6
4,8 × 0,8	10
6,3 × 0,8	16

13 Construction of fixed socket-outlets

IEC 60884-1:2022, Clause 13 is applicable except as follows.

13.21 Inlet openings

Replacement:

Socket-outlets for appliances shall be so designed that the assembling of their component parts is not affected by the method of fixing the socket-outlet to the appliance.

The method of fixing shall be such that the socket-outlet cannot turn and cannot be detached from the appliance without the aid of a tool.

Compliance is checked by inspection.

14 Construction of plugs and portable socket-outlets

IEC 60884-1:2022, Clause 14 is not applicable.

15 Interlocked socket-outlets

IEC 60884-1:2022, Clause 15 is applicable.

16 Resistance to ageing, protection provided by enclosures, and resistance to humidity

IEC 60884-1:2022, Clause 16 is applicable.

17 Insulation resistance and electric strength

IEC 60884-1:2022, Clause 17 is applicable.

18 Operation of earthing contacts

IEC 60884-1:2022, Clause 18 is applicable.

19 Temperature rise

IEC 60884-1:2022, Clause 19 is applicable.

20 Breaking capacity

IEC 60884-1:2022, Clause 20 is applicable.

21 Normal operation

IEC 60884-1:2022, Clause 21 is applicable.

22 Force necessary to withdraw the plug

IEC 60884-1:2022, Clause 22 is applicable.

23 Flexible cables ~~and cords~~ and their connection

IEC 60884-1:2022, Clause 23 is not applicable.

24 Mechanical strength

IEC 60884-1:2022, Clause 24 is applicable except as follows.

24.1 General

Addition:

– *for socket-outlets for appliances ..... 24.101.*

Addition:

24.101 Mechanical strength of socket-outlets for appliances

Socket-outlets for appliances are checked by applying blows by means of the spring-hammer test apparatus as described in IEC 60068-2-75.

All surfaces which are accessible when the socket-outlet for appliances is mounted as in normal use are tested with the above test apparatus.

Socket-outlets integral with or designed to be incorporated in an appliance are tested as in normal use.

Socket-outlets designed to be fixed to an appliance are mounted on a vertical sheet of plywood 8 mm thick and 175 mm square without any metallic back plate, the plywood being mounted on a rigid frame which is fixed to a solid wall of brick, concrete or the like.

Blows are applied to all accessible surfaces, the test apparatus being calibrated to deliver an energy ~~corresponding to that delivered by the striking element of the pendulum, as shown in the relevant figures and Table 21 of Part 1~~ as shown in Table 103.

For all such surfaces, three blows are applied to each of the three weakest points (maximum nine blows).

~~NOTE 1 The following energy values of the spring hammer are considered as corresponding to those delivered by the pendulum. See Table 103.~~

Table 103 – Relationship between height of fall of pendulum and spring hammer energy

~~Height of fall~~ ~~mm~~	~~Energy~~ ~~J~~
~~100~~	~~0,22 ± 0,05~~
~~150~~	~~0,33 ± 0,05~~
~~200~~	~~0,44 ± 0,05~~
~~250~~	~~0,55 ± 0,05~~

Impact energy J	Parts of enclosures to be subjected to the impact [a]	
	Accessories having an IP code IPX0 or maximum IPX2 for fixed socket-outlets	Accessories having an IP code higher than IPX0 or higher than IPX2 for fixed socket-outlets
0,2	A and B	–
0,3	C	A and B
0,4	D	C
0,5	–	D

[a] A Parts on the front surface, including the parts which are recessed.

B Parts which do not project more than 15 mm from the mounting surface (distance from the wall) after mounting as in normal use, with the exception of the above parts A.

C Parts which project more than 15 mm and not more than 25 mm from the mounting surface (distance from the wall) after mounting as in normal use, with the exception of the above parts A.

D Parts which project more than 25 mm from the mounting surface (distance from the wall) after mounting as in normal use, with the exception of the above parts A.

Care is taken that the results from one series of three blows do not influence subsequent series. If there is doubt as to whether a defect has been caused by the application of preceding blows, this defect is neglected and the group of three blows which led to the defect is applied to the same place on a new sample, which shall then comply with the test.

After the test, the specimens shall show no damage within the meaning of this document: in particular, live parts shall not have become accessible to the test probe B of IEC 61032.

~~NOTE 2~~ *Damage to the finish, small dents which do not reduce creepage distances or clearances below the values specified in 27.1 and small chips which do not adversely affect the protection against electric shock or harmful ingress of water are neglected.*

Cracks not visible with normal or corrected vision, without additional magnification, and surface cracks in fibre-reinforced mouldings and the like, are ignored.

Cracks or holes in the outer surface of any part of the socket-outlet are ignored if the socket-outlet complies with this document even if this part is omitted.

25 Resistance to heat

IEC 60884-1:2022, Clause 25 is applicable.

26 Screws, current-carrying parts and connections

IEC 60884-1:2022, Clause 26 is applicable.

27 Creepage distances, clearances and distances through sealing compound

IEC 60884-1:2022, Clause 27 is applicable except as follows.

27.1 General

Addition:

Socket-outlets for appliances are tested with the metal frame, if any, placed in the most unfavourable positions if this frame, acting as a support, is movable.

28 Resistance of insulating material to abnormal heat, to fire and to tracking

~~This clause of Part 1 is applicable except as follows.~~

~~*Addition before 28.1:*~~

~~For the purpose of this test, socket-outlets for appliances are considered to be fixed socket-outlets.~~

IEC 60884-1:2022, Clause 28 is applicable.

29 Resistance to rusting

IEC 60884-1:2022, Clause 29 is applicable.

30 Additional tests on pins provided with insulating sleeves

IEC 60884-1:2022, Clause 30 is not applicable.

31 EMC requirements

IEC 60884-1:2022, Clause 31 is applicable.

32 Electromagnetic fields (EMF) requirements

IEC 60884-1:2022, Clause 32 is applicable.

Annexes

The annexes of IEC 60884-1:2022 are applicable except as follows:

Annex A
(normative)

Safety-related routine tests for factory-wired portable accessories (protection against electric shock and correct polarity)

IEC 60884-1:2022, Annex A is not applicable.

Annex B
(informative)

Alternative gripping tests

IEC 60884-1:2022, Annex B is not applicable.

Annex C
(normative)

Switches incorporated in portable socket-outlets

IEC 60884-1:2022, Annex C is not applicable.

Annex I
(normative)

Additional requirements and tests for plugs and socket-outlets for high-load (HL) application

IEC 60884-1:2022, Annex I is not applicable.

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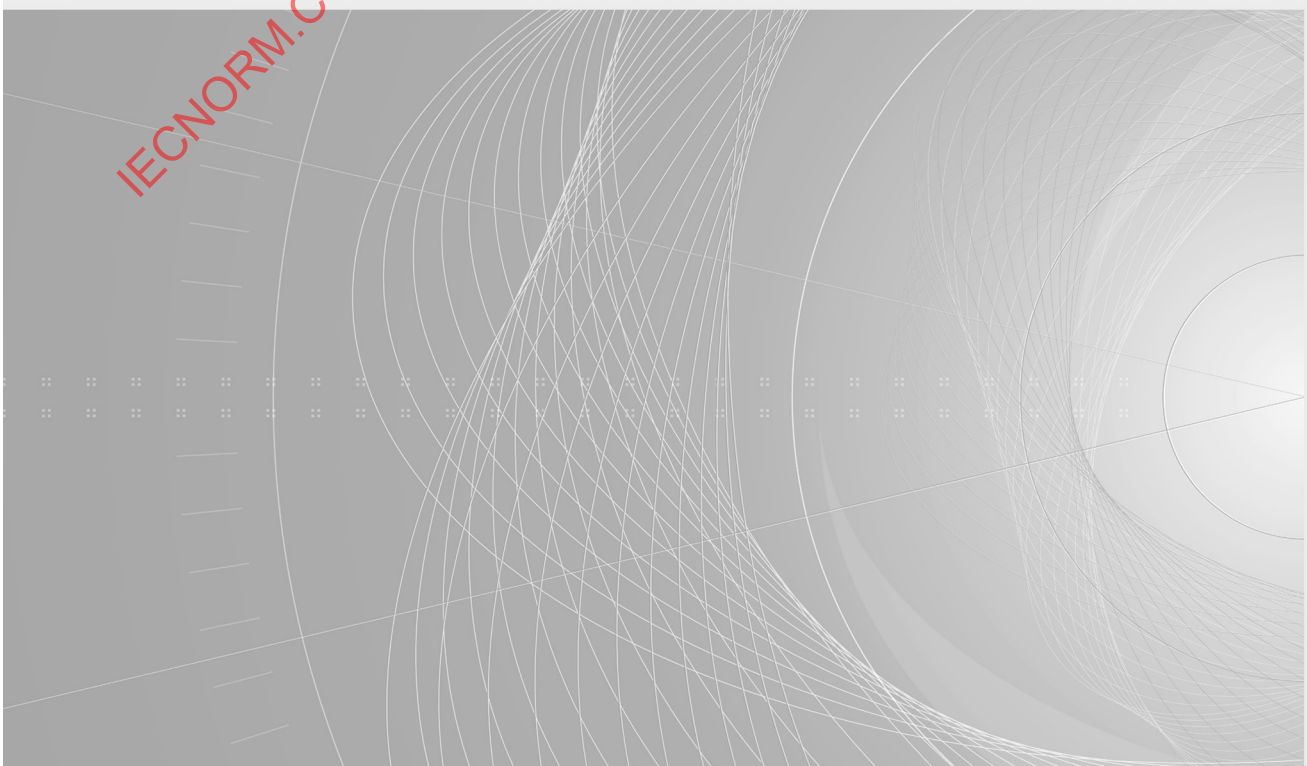

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Part 2-2: Particular requirements for socket-outlets for appliances

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IEC 61210, *Connecting devices – Flat quick-connect terminations for electrical copper conductors – Safety requirements*

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Addition:

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socket-outlet for appliances
socket-outlet intended to be integrated or incorporated in, or fixed to appliances

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flat quick-connect termination
electrical connection consisting of a male tab and female connector which can be readily inserted and withdrawn without the use of a tool

Note 1 to entry: Other terms, such as "snap-on connector", "flat push-on connector" are sometimes used.

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3.104
male tab
portion of a flat quick-connect termination which receives the female connector

4 General requirements

IEC 60884-1:2022, Clause 4 is applicable except as follows:

Addition:

Requirements for portable socket-outlets are not applicable.

5 General remarks on tests

IEC 60884-1:2022, Clause 5 is applicable except as follows.

Addition:

5.101 Connections for socket-outlets for appliances

If socket-outlets for appliances are provided with male tabs of flat quick-connect terminations, new female connectors shall be used for each test according to Clause 19, Clause 20 and Clause 21.

These female connectors shall be made from unplated copper alloy.

6 Ratings

IEC 60884-1:2022, Clause 6 is applicable except as follows.

Addition:

For socket-outlets for appliances, Table 2 applies up to and including a rated current of 16 A and up to and including a rated voltage of 250 V.

7 Classification

IEC 60884-1:2022, Clause 7 is applicable.

8 Marking

IEC 60884-1:2022, Clause 8 is applicable.

9 Checking of dimensions

IEC 60884-1:2022, Clause 9 is applicable.

10 Protection against electric shock

IEC 60884-1:2022, Clause 10 is applicable.

11 Provision for earthing

IEC 60884-1:2022, Clause 11 is applicable.

12 Terminals and terminations

IEC 60884-1:2022, Clause 12 is applicable except as follows.

12.1 General

Replacement of the second paragraph with:

Socket-outlets for appliances shall be provided with screw-type terminals, screwless terminals or male tabs of flat quick-connect terminations.

12.2 Terminals with screw clamping for external copper conductors

Deletion of footnotes a and b of Table 4.

Addition:

12.101 Flat quick-connect terminations

12.101.1 General

Male tabs and female connectors to be used for test purposes shall comply with IEC 61210.

12.101.2 Constructional requirements

12.101.2.1 Male tabs shall be of nominal sizes:

2,8 mm × 0,8 mm or
4,8 mm × 0,8 mm or
6,3 mm × 0,8 mm,

as detailed in IEC 61210.

Compliance is checked by measuring three specimens, all of which shall comply with the dimensional requirements of IEC 61210.

Round dimple indents, rectangular dimple indents, hole indents or provisions for non-reversible flat quick-connect terminations, if any, shall also comply with IEC 61210.

12.101.2.2 Male tabs shall be made from copper or copper alloy (bare or tin plated). Materials or coatings other than those specified may be used, provided that their electrical and mechanical characteristics are no less reliable, particularly with regard to resistance to corrosion, stability of contact resistance and mechanical strength.

12.101.2.3 Male tabs shall have adequate strength to allow the application and removal of female connectors without damage to the socket-outlet so as to impair compliance with this document.

Compliance is checked by applying, without jerks, axial forces equal to those shown in Table 101.

No displacement or damage shall occur which might impair further use.

Table 101 – Forces to be applied to tabs

Male tab size (nominal) mm	Push* N	Pull* N
2,8 × 0,8	50	40
4,8 × 0,8	60	50
6,3 × 0,8	80	70
* These values are the maximum allowed for the insertion and withdrawal of a female connector onto and from a male tab.		

12.101.2.4 Male tabs shall be adequately spaced to allow the connection of the appropriate female connectors.

Compliance is checked by applying an appropriate female connector to each male tab; during this operation, no strain or distortion shall occur to any of the tabs or to their adjacent parts, nor shall the creepage distance or clearance be reduced below those specified in Clause 27.

12.101.3 Electrical requirements

Male tab sizes shall be related to the rated current of the socket-outlet as shown in Table 102.

Table 102 – Relationship between tab size and rated current

Male tab size (nominal) mm	Maximum rated current A
2,8 × 0,8	6
4,8 × 0,8	10
6,3 × 0,8	16