IEC 60884-2-7

Edition 2.0 2025-02
EXTENDED VERSION

INTERNATIONAL STANDARD

This full version of IEC 60884-2-7:2025 includes the content of the references made to IEC 60884-1:2022

Plugs and socket-outlets for household and similar purposes – Part 2-7: Particular requirements for cord extension sets

IEC 60884-2-7:2025-02 EXV(en)

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

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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INTERNATIONAL
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COMMISSION

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Part 2-7: Particular requirements for cord extension sets

FOREWORD

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This extended version (EXV) of the official IEC Standard provides the user with the full content of the Standard.

IEC 60884-2-7:2025 EXV includes the content of IEC 60884-2-7:2025, and the references made to IEC 60884-1:2022.

The specific content of IEC 60884-2-7:2025 is displayed on a blue background.

IEC 60884-2-7 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 2011, and Amendment 1:2013. 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/1548/FDIS	23B/1562/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 cord extension sets.

Where this document states "addition", "modification" or "replacement", the relevant requirement, test specifications or explanatory matter in IEC 60884-1:2022 shall be adapted accordingly.

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

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

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 in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD AND SIMILAR PURPOSES –

Part 2-7: Particular requirements for cord extension sets

1 Scope

This part of IEC 60884 applies to cord extension sets, rewirable and non-rewirable, with or without earthing contact, with a rated voltage greater than 50 V but not exceeding 440 V and a rated current not exceeding 16 A, intended for household and similar purposes, either indoors or outdoors.

NOTE 1 In the following countries, cord extension sets only for equipment of class II are not allowed: DE, DK and UK.

This document does not apply to cord extension sets with means for reeling.

Cord extension sets intended to be used as socket-outlets for furniture are additionally covered by IEC 60884-2-8.

This document also applies to cord extension sets which are intended to be used in a cable reel, and which therefore become cable reels with a detachable flexible cable. For the combination of the cord extension set, the reel requirements and tests of IEC 61242 apply in addition.

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

NOTE 2 In the following country, cord extension sets comprising a socket-outlet for class II equipment are not permitted; socket-outlets in cord extension sets shall always be Class I as defined in IEC 61140: UK.

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 60068-2-30, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 + 12 h cycle)*

IEC 60068-2-31, *Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens*

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

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

IEC 60227 (all parts), *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 60245 (all parts), *Rubber insulated cables – Rated voltages up to and including 450/750 V*

IEC 60417, *Graphical symbols for use on equipment* (available at http://www.graphical-symbols.info/equipment)

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
IEC 60529:1989/AMD2:2013

IEC 60669 (all parts), *Switches for household and similar fixed-electrical installations*

IEC 60669-2-1:2021, *Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic control devices*

IEC 60695-2-10:2021, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2021, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end products (GWEPT)*

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

IEC 60884-2-1, *Plugs and socket-outlets for household and similar purposes – Part 2-1: Particular requirements for fused plugs*

IEC 60884-2-8:—, *Socket-outlets for furniture*[1]

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

IEC 61058 (all parts), *Switches for appliances*

IEC 61545, *Connecting devices – Devices for the connection of aluminium conductors in clamping units of any material and copper conductors in aluminium bodied clamping units*

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

ISO 1456:2009, *Metallic and other inorganic coatings – Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium*

ISO 2081:2018, *Metallic and other inorganic coatings – Electroplated coatings of zinc with supplementary treatments on iron or steel*

ISO 2093:1986, *Electroplated coatings of tin – Specification and test methods*

3 Terms and definitions

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

[1] Under preparation. Stage at the time of publication: IEC CDV 60884-2-8:2024.

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

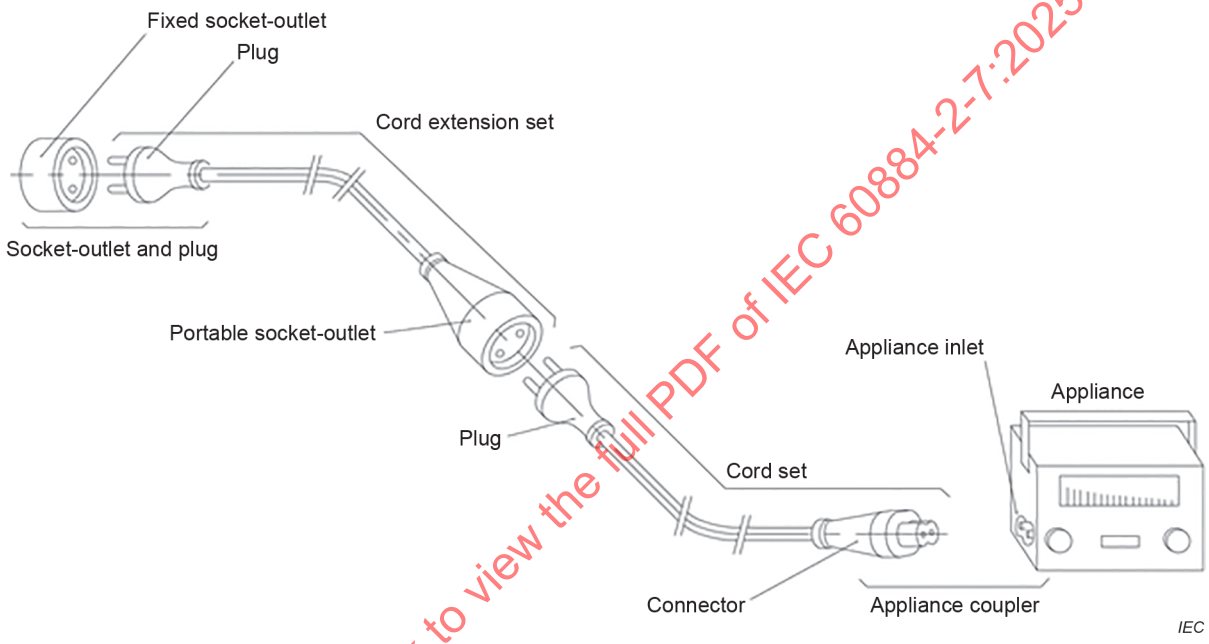
- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

NOTE 1 Where the terms "voltage" and "current" are used, they imply RMS values, unless otherwise specified.

NOTE 2 Throughout this document the word "earthing" is used for "protective earthing" unless otherwise stated.

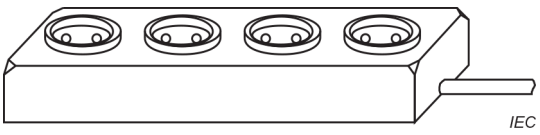
NOTE 3 The term "portable accessory" covers plugs, portable socket-outlets and cord extension sets. Examples of cord extension sets are shown in Figure 101.

NOTE 4 Throughout this document the term "socket-outlet" covers both fixed and portable socket-outlets, except where the reference is specific to one type or the other.



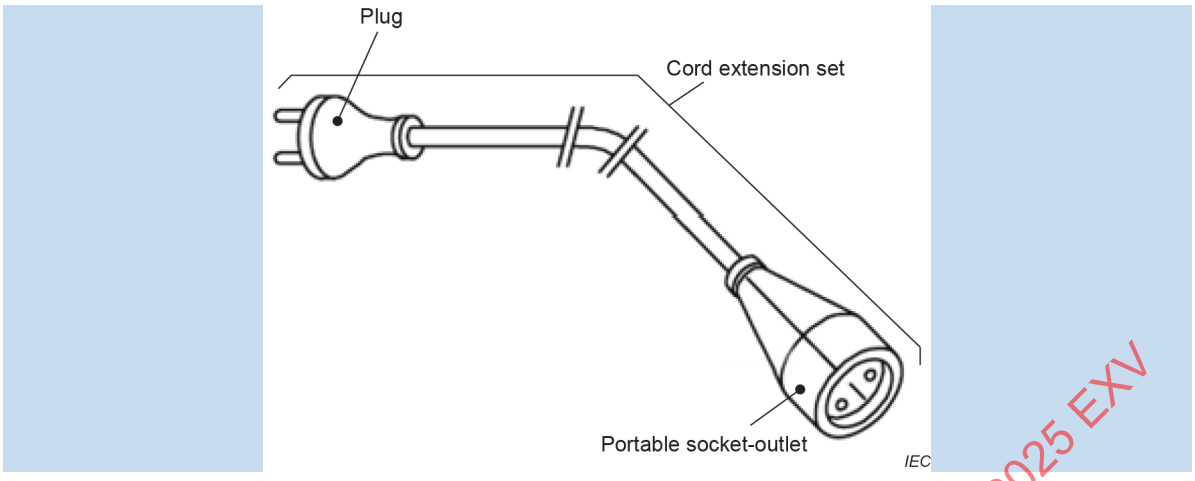
a) Diagram showing various accessories and their use

NOTE Appliance, appliance inlet and appliance coupler are used in this figure only for illustration purposes and they are not covered by this document.

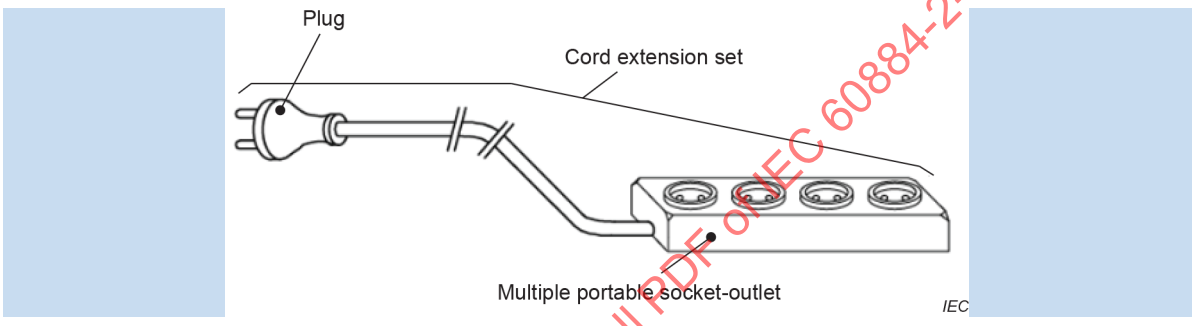


b) Example of a multiple socket-outlet

Figure 1 – Examples of accessories



a) Example of cord extension set



b) Example of cord extension set with multiple socket-outlets

Figure 101 – Examples of cord extension sets

3.1
plug
accessory having pins designed to engage with the contacts of a socket-outlet

Note 1 to entry: A plug allows the manual connection and disconnection of an electrical load to an electrical supply by an ordinary person.

Note 2 to entry: The plug can be connected to a cable or integrated into an accessory.

Note 3 to entry: In adaptors, the plug can be integral or detachable, see IEC 60884-2-5.

Note 4 to entry: For special purposes such as lighting chains (see also IEC 60598-2-20), two or three single-core cables can be connected within the plug.

3.2
socket-outlet
accessory having socket-contacts designed to engage with the pins of a plug

Note 1 to entry: The socket-outlet can be connected to a cable or integrated into an accessory.

Note 2 to entry: In adaptors, the socket-outlet can be integral or detachable, see IEC 60884-2-5.

3.3
fixed socket-outlet
socket-outlet intended to be installed at a fixed location and be connected to fixed wiring

3.4
portable socket-outlet
socket-outlet intended to be connected to or integral with one flexible cable and which can easily be moved from one place to another while connected to the supply

3.5
multiple socket-outlets
combination of two or more socket-outlets

Note 1 to entry: An example is shown in Figure 1 b).

3.6
rewirable plug
plug so constructed that the flexible cable can be replaced

3.7
non-rewirable plug
assembly of the plug and the flexible cable so constructed that the flexible cable cannot be replaced

3.8
rewirable portable socket-outlet
socket-outlet so constructed that the flexible cable can be replaced

3.9
non-rewirable portable socket-outlet
assembly of the socket-outlet and the flexible cable so constructed that the flexible cable cannot be replaced

3.10
moulded-on accessory
non-rewirable portable accessory the manufacture of which is completed by insulating material moulded around pre-assembled component parts and the terminations for the flexible cable

[SOURCE: IEC 60050-442:1998, 442-01-14, modified – "portable" has been added to the definition and "or cord" has been omitted.]

3.11
mounting box
box intended for mounting in or on a wall, floor or ceiling, etc., for flush or surface application, intended for use with fixed socket-outlet(s)

3.12
cord set
assembly consisting of a flexible cable or cord fitted with a non-rewirable plug and a non-rewirable connector, intended for the connection of an electrical appliance to the electrical supply

[SOURCE: IEC 60050-442:1998, 442-07-04, and IEC 60050-442:2008, 461-06-16]

3.13
cord extension set
assembly consisting of one flexible cable fitted with one plug and one single or multiple portable socket-outlets

3.14
terminal
insulated or non-insulated connecting device intended for reusable electrical connection of the external conductors

3.15
termination
insulated or non-insulated connecting device intended for non-reusable electrical connection of the external conductors

3.16
clamping unit
part(s) of the terminal necessary for the mechanical clamping and the electrical connection of the conductor(s), including the parts which are necessary to ensure correct contact pressure

[SOURCE: IEC 60050-442:1998, 442-06-12]

3.17
screw-type terminal
terminal for the connection and subsequent disconnection of one conductor or the interconnection and subsequent disconnection of two or more conductors, the connection being made, directly or indirectly, by means of screws or nuts of any kind

Note 1 to entry: Term entries 3.18 to 3.23 are examples of screw-type terminals.

3.18
pillar terminal
screw-type terminal in which the conductor is inserted into a hole or cavity, where it is clamped under the end of the screw or screws

Note 1 to entry: The clamping pressure may be applied directly by the end of the screw or through an intermediate clamping member to which pressure is applied by the end of the screw.

Note 2 to entry: Examples of pillar terminals are shown in Figure 9.

3.19
stirrup terminal
pillar terminal where the clamping pressure may be applied indirectly by an intermediate clamping member when the screw is tightened

Note 1 to entry: Examples of stirrup terminals are shown in Figure 9.

3.20
screw head terminal
screw-type terminal in which the conductor is clamped under the head of the screw

Note 1 to entry: The clamping pressure may be applied directly to the head of a screw or through an intermediate part, such as a washer, clamping plate or anti-spread device.

Note 2 to entry: Examples of screw head terminals are shown in Figure 10.

3.21
stud terminal
screw-type terminal in which the conductor is clamped under a nut

Note 1 to entry: The clamping pressure may be applied directly by a suitably shaped nut or through an intermediate part, such as a washer, clamping plate or anti-spread device.

Note 2 to entry: Examples of stud terminals are shown in Figure 10.

3.22
saddle terminal
screw-type terminal in which the conductor is clamped under a saddle by means of two or more screws or nuts

Note 1 to entry: Examples of saddle terminals are shown in Figure 11.

3.23
mantle terminal
screw-type terminal in which the conductor is clamped against the base of a slot in a threaded stud by means of a nut

Note 1 to entry: The conductor is clamped against the base of the slot by a suitably shaped washer under the nut, by a central peg if the nut is a cap nut, or by equally effective means for transmitting the pressure from the nut to the conductor within the slot.

Note 2 to entry: Examples of mantle terminals are shown in Figure 12.

3.24
screwless-type terminal
connecting device for the connection and subsequent disconnection of a rigid (solid or stranded) or flexible conductor or the interconnection of two or more conductors, capable of being dismantled, the connection being made, directly or indirectly, by means of springs, parts of angled, eccentric or conical form, etc., without special preparation of the conductor concerned, other than removal of insulation

3.25
thread-forming screw
screw having an uninterrupted thread, which by screwing in, forms a thread by displacing material

Note 1 to entry: An example of a thread-forming screw is shown in Figure 2.

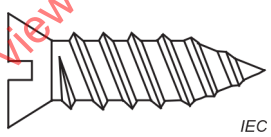


Figure 2 – Example of thread-forming screw

3.26
thread-cutting screw
screw having an interrupted thread, which by screwing in, forms a thread by removing material

Note 1 to entry: An example of a thread-cutting screw is shown in Figure 3.

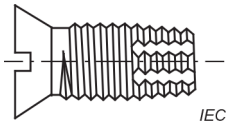


Figure 3 – Example of thread-cutting screw

3.27
rated voltage
voltage assigned by the manufacturer for a specified operating condition of an accessory

[SOURCE: IEC 60050-442:1998, 442-01-03, modified – The domain "(for accessories)" has been omitted.]

3.28
rated current
current assigned by the manufacturer for specified operating condition of an accessory

Note 1 to entry: Examples of the operating conditions are ambient condition, characteristics of the power supply, duty cycle or duty type.

[SOURCE: IEC 60050-442:1998, 442-01-02, modified – The domain "(for accessories)" has been omitted and the note to entry added.]

3.29
shutter
movable part incorporated into a socket-outlet arranged to shield at least the live socket-contacts automatically when the plug is withdrawn

3.30
type test
test of one or more devices made to a certain design to show that the design meets certain specifications

3.31
routine test
test to which each individual device is subjected during and/or after manufacture to ascertain whether it complies with certain criteria

3.32
base
part of the socket-outlet supporting the socket-contacts

3.33
live part
conductor or conductive part intended to be energized in normal use, including a neutral conductor, but by convention not a PEN conductor

Note 1 to entry: Live parts according to this document are always considered as hazardous with the exception of SELV circuits.

[SOURCE: IEC 60050-826:2004, 826-12-08, modified – "operation" has been replaced with "use"; "or PEM conductor or PEL conductor" and the note to entry omitted.]

3.34
cable anchorage
part of an accessory which has the ability to limit the displacement of a fitted flexible cable against pull, push and turning forces

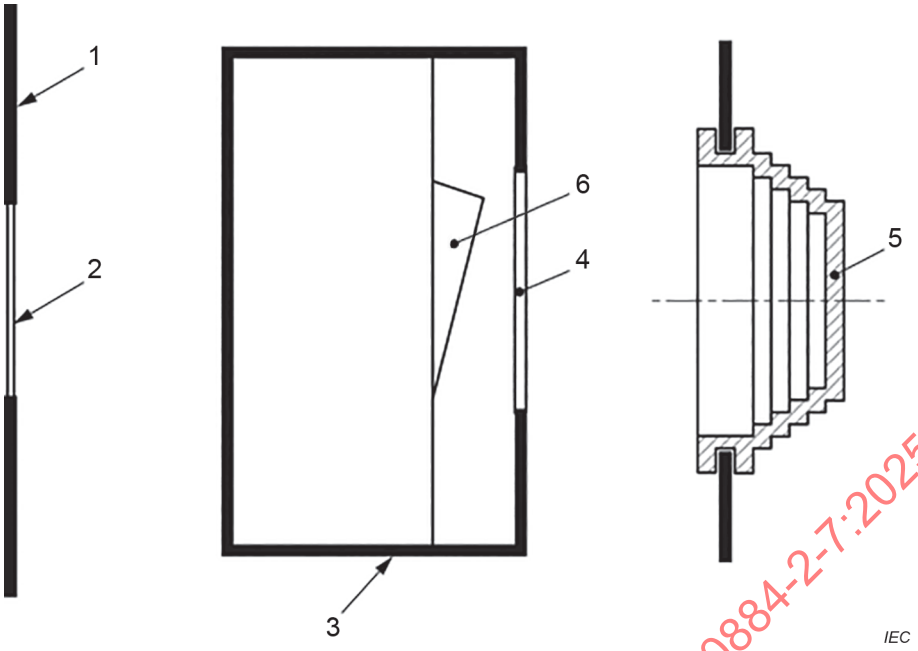
3.35
main part
assembly consisting of the base and other parts

Note 1 to entry: This assembly is not intended to be dismantled at any time after manufacture.

3.36
grommet
component used to support and protect the cable or conduit at the point of entry

Note 1 to entry: A grommet may also prevent the ingress of moisture or contaminants.

Note 2 to entry: Examples of membranes and grommets are shown in Figure 4.



Key

1 Box
2 Entry membrane
3 Envelope
4 Protective membrane
5 Grommet
6 Switch

Figure 4 – Examples of membranes and grommets

3.37
entry membrane
component or integral part of the accessory 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.

Note 2 to entry: Examples of membranes and grommets are shown in Figure 4.

3.38
protective membrane
component or integral part of the accessory 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: Examples of membranes and grommets are shown in Figure 4.

3.39
normal load
load typically associated with household appliances

Note 1 to entry: Examples of normal loads:

– washing machines,
– refrigerators,
– clothes irons,
– vacuum cleaners,
– multimedia equipment.

3.40
high load
HL
load that applies long and repetitive cycles up to the rated current to the accessories exceeding normal load conditions

Note 1 to entry: Examples of applications having HLs are electric vehicle chargers and large terrace heaters.

3.41
crimped connection
permanent connection made by the application of pressure inducing the deformation or reshaping of the barrel around the conductor of a cable

Note 1 to entry: In some cases the deformation or reshaping of the barrel may affect the form of the conductor.

Note 2 to entry: Examples of crimped connections are shown in IEC 60352-2.

[SOURCE: IEC 60050-461:2008, 461-19-01, modified – Note 2 to entry has been added.]

3.42
pilot light
device incorporating a light source either integral or designed to be installed with the accessory and intended to give for example an indication of the accessory state or to indicate the accessory location

3.43
protective earthing
protective grounding, (US)
earthing for purposes of electrical safety

[SOURCE: IEC 60050-195:2021, 195-01-11]

3.44
functional earthing
earthing for purposes other than electrical safety

[SOURCE: IEC 60050-195:2021, 195-01-13, modified – The term "functional grounding" has been omitted.]

3.45
stroke
insertion or withdrawal of the plug

3.101
rewirable cord extension set
cord extension set so constructed that any of the accessories or the flexible cable can be replaced with the aid of a general purpose tool

3.102
non-rewirable cord extension set
cord extension set so constructed that it forms a complete unit with the flexible cable, the plug and the socket-outlet after connection and assembly by the manufacturer, the disassembly of which makes it permanently unfit for any further use

4 General requirements

Accessories and boxes of surface mounting accessories 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.

NOTE In the following country, a load connected by plugs and socket-outlets for household and similar purposes shall not exceed an energy quantity of Emax = 7 360 VAh in 3 h: AT, DE.

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

Components such as plugs, socket-outlets (including multiple socket-outlets) and flexible cables of the cord extension sets shall be compliant with, and have been verified against, the relevant product standards for those components.

Cord extension sets intended to be used as socket-outlets for furniture shall in addition comply with IEC 60884-2-8.

5 General remarks on tests

5.1 General

Tests shall be carried out to prove compliance with the requirements laid down in this document.

Tests are carried out as follows:

– *type tests shall be carried out on representative specimens of each assembly;*
– *routine tests shall be carried out on each assembly manufactured according to this document.*

Subclauses 5.2 to 5.5 are applicable to type tests and 5.6 to routine tests.

NOTE In the following country, the following tests are carried out on samples of the cord extension set in accordance with the sampling requirements specified in Clauses 5, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29 and 30: ZA.

5.2 Products arrangement during test

The specimens are tested as delivered and under normal conditions of use.

5.3 Ambient test condition

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

In case of doubt, the tests are carried out at an ambient temperature of (20 ± 5) °C.

5.4 Additional samples

Three specimens are subjected to all the relevant tests.

5.5 Compliance general requirement

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

If one specimen does not satisfy a test due to a process fault in the manufacturing of cord extension sets, that test and any preceding one 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 The applicant can submit, together with a number of specimens specified in 5.4, the additional set of specimens which can be required, should one specimen fail. The testing station will then, without further request, test the additional specimens and will only reject them 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.

5.6 Routine tests

Routine tests are specified in Annex A.

6 Ratings

Accessories should preferably be of a type and preferably have a voltage and current rating as shown in Table 2.

Table 2 – Preferred combinations of types and ratings

Type		Rated voltage	Rated current
General, with P = pole	**Implementation**	V	A
2P (non-rewirable portable accessories)	L1 + L2 or L1 + N	130 or 250	2,5
2P	L1 + L2 or L1 + N	130 or 250	6
2P + ⏚	L1 + L2 + ⏚ or L1 + N + ⏚	130 or 250	6
2P	L1 + L2 or L1 + N	130 or 250	10 13 16 20 25 32
2P + ⏚	L1 + L2 + ⏚ or L1 + N + ⏚		
2P + ⏚	L1 + L2 + ⏚	400 or 440	10 13 16 20 25 32
3P + ⏚	L1 + L2 + L3 + ⏚		
3P + N + ⏚	L1 + L2 + L3 + N + ⏚		

NOTE 1 Standardized values and configurations of existing systems are reported in IEC/TR 60083.

NOTE 2 L1 + L2 and L1 + N are examples, any combination of the 3 phases are possible.

The phase contacts L1, L2, L3 and the neutral contact N, if any, are treated as pole and considered to be live.

In some tables or tests, ⏚ is treated as a pole.

NOTE 1 In the following countries fixed 2P socket-outlets are not allowed: AT, BR, DE, IT, GB, TR.

NOTE 2 In the following country, fixed 2P socket-outlets are allowed only under certain conditions as specified in the wiring code: BE, ZA (SANS 10142-1).

6.101 Rated voltage

The rated voltage of the cord extension set is that of the plug.

Compliance is checked by inspection of the marking. In addition, the requirements of 14.103 shall be fulfilled.

6.102 Rated current

The rated current shall be the lowest value of the following:

– the rated current of the plug; or

– the arithmetic sum of the highest rated currents of all plugs which can be simultaneously inserted into the cord extension set; or

– the rated current of the incorporated overcurrent protective device having the smallest rated current, if any.

Compliance is checked by inspection of the marking. In addition, the requirements of 14.104 shall be fulfilled.

6.103 Power

The power of cord extension sets, when applicable, shall be calculated by multiplying the rated current (as determined in 6.102) and the nominal voltage of the supply system to which it can be connected, with a power factor equal to 1.

NOTE 101 Nominal voltages are defined in IEC 60038.

Compliance is checked by inspection of the marking.

7 Classification

IEC 60884-1:2022, Clause 7 is not applicable except for 7.1.1, 7.1.2, 7.1.3 and 7.1.4.

7.1 Accessories classification

7.1.1 Accessories are classified according to the degree of protection against access to hazardous parts and against harmful effects due to the ingress of solid foreign objects as described in IEC 60529.

7.1.2 Accessories are classified according to the degree of protection against harmful effects due to the ingress of water as described in IEC 60529.

7.1.3 Classification according to the provision for earthing:

7.1.3.1 Accessories without earthing contact;

7.1.3.2 Accessories with earthing contact.

7.1.4 Classification according to the method of connecting the cable:

7.1.4.1 Rewirable accessories;

7.1.4.2 Non-rewirable accessories.

8 Marking

8.1 General

Accessories shall be marked as follows:

– deleted;

– deleted;

– deleted;

– the name, trademark or identification mark of the manufacturer or responsible vendor;

– type reference which may be a catalogue number;

NOTE 1 The type reference can be the series reference only.

– first characteristic numeral for the degree of protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects, if declared to be higher than 2, and for fixed socket-outlets higher than 4, in which case the second characteristic numeral shall also be marked;

– second characteristic numeral for the degree of protection against harmful effects due to ingress of water, if declared to be higher than 0, and for fixed socket-outlets higher than 2, in which case the first characteristic numeral shall also be marked.

For cord extension sets, the marking of the manufacturer's or responsible vendor's name, trademark or identification mark shall be applied only if the manufacturer of the cord extension set is different from the manufacturer of the socket-outlet.

NOTE 101 The marking of the name, trade mark or identification mark of the manufacturer or responsible vendor can for example be applied on a sleeve or label provided around the cord.

For a cord extension set, the type reference, which may be a catalogue number, shall be placed on the smallest packaging unit or on the product.

NOTE 2 The degrees of protection are based on IEC 60529.

In addition, socket-outlets with screwless-type terminals shall be marked with the following:

– an appropriate marking indicating the length of insulation to be removed before the insertion of the conductor into the screwless-type terminal;

– an indication of the suitability to accept rigid conductors only, for those socket-outlets having this restriction.

– in the case of multiple portable socket-outlets or when there is an overcurrent protective device, the power in watts.

The marking for power shall be completed by the word MAX. This marking shall be durable and easily legible with normal or corrected vision, without additional magnification.

The power is calculated using the nominal voltage of the fixed electrical installation to which it can be connected, the rated current in amperes and a power factor cos φ = 1.

NOTE 102 As an example, a 250 V / 16 A cord extension set has nominal supply voltage of 230 V and the corresponding marking would be:

MAX 3680 W or 3680 W MAX

The maximum admissible power marking shall not be hidden by any inserted plug.

8.2 Symbols

When symbols are used, they shall be as follows:

Amperes ..... A

Volts V

Alternating current ..... ~ or AC

Neutral ..... N

Protective earth ..... 

(IEC 60417-5019 (2006-08))

Degree of protection, when relevant ..... IPXX

Degree of protection for fixed accessories also able to be installed on rough surfaces

(test wall of Figure 18 b) and Figure 18 c)) ..... IPXX 

(IEC 60417-6345 (2015-07))

For screwless-type terminals: suitability to accept rigid conductors only ..... r

NOTE 1 Details of construction of symbols are given in IEC 60417.

NOTE 2 In the IP code the letter "X" is replaced by the relevant number.

NOTE 3 Lines formed by the construction of the tool are not considered as part of the marking.

For the marking with rated current and rated voltage the values may be used alone. These values shall be placed on one line separated by an oblique line or the value for rated current shall be placed above the value for rated voltage, separated by a horizontal line.

The marking for the nature of supply shall be placed next to the marking for rated current and rated voltage.

NOTE 4 The marking for current, voltage and nature of supply can be, for example, as follows:

$$16\ \text{A}\ 440\ \text{V AC or } 16/440\ \text{AC or } \frac{16}{440}\sim$$

8.3 Particular requirements for fixed socket-outlets

For fixed socket-outlets the following marking shall be placed on the main part:

– rated current, rated voltage and nature of supply;

– either the name, trademark or identification mark of the manufacturer or of the responsible vendor;

– length of insulation to be removed before the insertion of the conductor into the screwless-type terminal;

– an indication of the suitability to accept rigid conductors only for screwless-type terminals for those socket-outlets having this restriction;

– the type reference, which may be a catalogue number.

NOTE 1 The type reference can be the series reference only.

Parts such as cover plates, which are necessary for safety purposes and are intended to be sold separately, shall be marked with the manufacturer's or responsible vendor's name, trademark or identification mark and type reference.

NOTE 2 Additional type references can be marked on the main part, or on the outside of the associated enclosure.

The IP code, if applicable, shall be marked so as to be easily discernible when the socket-outlet is mounted and wired as for normal use.

Fixed socket-outlets classified according to 7.2.5.2 shall be identified by a triangle which shall be visible after installation unless the socket-outlets have an interface configuration which is different from that used in normal circuits.

NOTE 3 In the following countries an orange triangle is required by the national installation rules: CA, MX, US.

8.4 Particular requirements for portable accessories

For plugs and portable socket-outlets the marking specified in 8.1, other than the type reference, shall be easily discernible when the accessory is wired and assembled.

Plugs and portable socket-outlets for equipment of class II shall not be marked with the symbol for class II construction.

NOTE The type reference of rewirable portable accessories can be marked on the inside of the enclosure or cover.

8.5 Particular requirements for markings on terminals other than phase terminals

Terminals intended exclusively for the neutral conductor shall be indicated by the letter N.

Earthing terminals for the connection of the protective conductor shall be indicated by the symbol  .

These markings shall not be placed on screws, or any other easily removable parts.

NOTE "Easily removable parts" are those parts which can be removed during the normal installation of the socket-outlet or the assembly of the plug.

Terminations in non-rewirable accessories need not be marked.

Terminals provided for the connection of conductors not forming part of the main function of the socket-outlets shall be clearly identified unless their purpose is self-evident, or indicated in a wiring diagram which shall be fixed to the accessory.

The indication of such terminals may be achieved by:

– their being marked with graphical symbols according to IEC 60417 or with colours and/or an alphanumeric system, or
– their being marked with their physical dimensions or relative location.

Leads of pilot lights are not considered to be conductors in the context of this subclause.

8.6 IP code marking for surface-type mounting boxes forming an integral part of socket-outlets

For surface-type mounting boxes forming an integral part of socket-outlets having an IP code higher than IP4X, or higher than IPX2, the IP code shall be marked on the outside of their associated enclosure so as to be easily discernible when the socket-outlet is mounted and wired as in normal use.

8.7 Additional requirement for marking

It shall be indicated either by marking or in a manufacturer's catalogue or instruction sheet which position or with which special provisions (for example, box, type of mounting surface, plug, etc.) the declared degree of protection of fixed socket-outlets having an IP code higher than IPX0 is ensured, unless this is self-evident.

Compliance is checked by inspection.

8.8 Durability

Marking shall be easily legible, durable and indelible.

Laser marking directly on the product and marking made by moulding, pressing or engraving are not subjected to this test.

Compliance is checked by inspection, using normal or corrected vision, without additional magnification and, if necessary, by the following test.

The test is done by rubbing the marking for 15 s with a piece of cotton cloth soaked with water and again for 15 s with a piece of cotton cloth soaked with n-hexane 95 % (Chemical Abstracts Service Registry Number, CAS RN, 110-54-3).

NOTE n-hexane 95 % (Chemical Abstracts Service Registry Number, CAS RN, 110-54-3) is available from a variety of chemical suppliers as a high pressure liquid chromatography (HPLC) solvent.

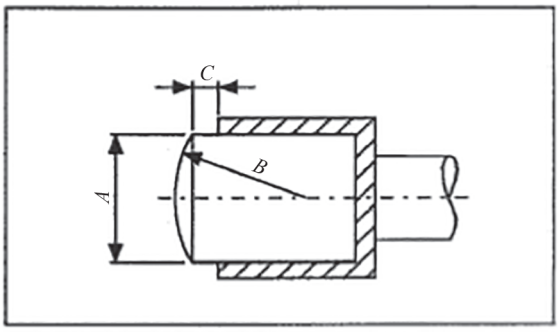
When using the liquid specified for the test, precautions as stated in the relative material safety datasheet provided by the chemical supplier shall be taken to safeguard the laboratory technicians.

The marking surface to be tested shall be dried after the test with water.

Rubbing shall commence immediately after soaking the piece of cotton, applying a compression force of (5 ± 1) N at a rate of about one cycle per second (a cycle comprising a forward and backward movement along the length of the marking). For markings longer than 20 mm, rubbing can be limited to a part of the marking, over a path of at least 20 mm length.

The compression force is applied by means of a test piston which is wrapped with cotton comprising cotton wool covered by a piece of cotton medical gauze.

The test piston shall have the dimensions specified in Figure 5 and shall be made of an elastic material which is inert against the test liquids and has a Shore-A hardness of 47 ± 5 (for example synthetic rubber).



IEC

Dimensions mm			
°	**A**	**B**	**C**
Dimensions	20	20	2
Tolerance	+2, −0	±0,5	+1, −0

Figure 5 – Test piston dimensions

When it is not possible to carry out the test on the specimens due to the shape/size of the product or the marking is not accessible with the test piston:

– *a suitable piece having the same characteristics as the product can be submitted to the test*

or

– *another test piston with different shape can be used on the condition that radius B is kept.*

9 Checking of dimensions

IEC 60884-1:2022, Clause 9 is not applicable, see Clause 4.

10 Protection against electric shock

IEC 60884-1:2022, Clause 10 is not applicable, see Clause 4.

10.101 Accessibility of live parts during normal use

Cord extension sets shall be so designed and constructed that after they are wired and assembled as for normal use, live parts are not accessible, even after removal of parts which can be removed without the use of a tool.

Compliance is checked by inspection and by applying with a test wire of 1,0 mm diameter (see Figure 8 of IEC 60884-1:2022) a force of 1 N where the cable enters the plug and the portable socket-outlet in every possible position.

During this test, it shall not be possible to touch live parts with the gauge.

An electrical indicator with a voltage between 40 V and 50 V shall be used to ensure that there is no electrical contact with the relevant parts.

11 Provision for earthing

IEC 60884-1:2022, Clause 11 is not applicable, see Clause 4.

12 Terminals and terminations

IEC 60884-1:2022, Clause 12 is not applicable, see Clause 4.

13 Construction of fixed socket-outlets

IEC 60884-1:2022, Clause 13 is not applicable.

14 Construction of cord extension sets

14.1 Non-rewirable portable accessories

Non-rewirable portable accessories shall be such that:

– the flexible cable cannot be separated from the accessory without making it permanently useless such that when, for re-assembling the accessory, parts or materials other than the original would need to be used, and

– the accessory cannot be opened by hand or by using a general purpose tool, for example, a screwdriver used as such.

Compliance is checked by inspection, by manual test and by the test of 24.13.4.

14.2 Mechanical strength of pins of portable accessories

Pins of portable accessories shall have adequate mechanical strength.

Compliance is checked by the test of Clause 24 and, for pins which are not solid, by the following test which is carried out after the test of Clause 21.

A force of 100 N is exerted on the pin, which is supported as shown in Figure 17, for 1 min in a direction perpendicular to the axis of the pin, by means of a steel rod having a diameter of 4,8 mm, the axis of which is also perpendicular to the axis of the pin.

During the application of the force, the reduction of the dimension of the pin at the point where the force is applied shall not exceed 0,15 mm.

After removal of the rod, the dimensions of the pin shall not have changed by more than 0,06 mm in any direction.

Dimensions in millimetres

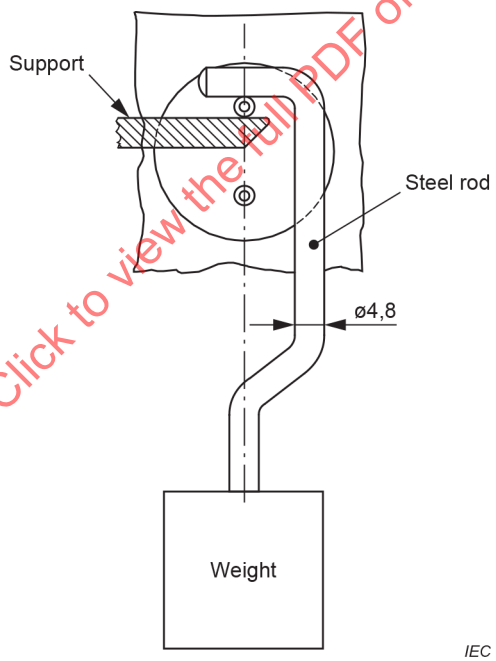


Figure 17 – Device for testing pins which are not solid

14.3 Fixing of pins and contacts of portable accessories

Pins and contacts of portable accessories, if any, shall be

– locked against rotation,
– not removable without dismantling the accessory,
– adequately fixed in the body of the accessory when the accessory is wired and assembled as for normal use.

Earthing contacts, phase contacts and neutral contacts of portable socket-outlets shall not be removable unless with the aid of a tool, after dismantling the socket-outlet.

It shall not be possible to arrange the earthing or neutral pins or contacts of accessories in an incorrect position.

Compliance is checked by inspection and by manual test.

In addition, for single portable socket-outlets compliance is checked after the test of 24.3.

The pins of portable accessories shall be constructed in such a way that the mechanical strength of the pins does not depend on the internal plastic material.

NOTE In certain designs the pins of the accessories are hollow and filled with plastic.

Compliance is checked by inspection and in case of doubt by the tests of 14.2 and of Clause 21 on a new set of specimens provided with pins without internal plastic material.

All exposed surfaces of portable accessories pins shall be smooth and free from burrs or sharp edges and other irregularities which could cause damage or excessive wear to corresponding socket-contacts or shutters.

Compliance is checked by inspection and by manual test.

14.4 Construction of socket-contact assemblies

Socket-contact assemblies shall have sufficient resilience to ensure adequate contact pressure on plug pins.

Parts of socket-contact assemblies, which will be in contact with the portion of the pin intended to make electrical contact when the plug is fully inserted into the socket-outlet, shall ensure metallic contact at least on two opposing sides of each pin.

The contact pressure of the contact tube shall not depend on soldered connection only.

Compliance is checked by inspection and by the tests of Clause 9, Clause 21 and Clause 22.

14.5 Resistance to corrosion and abrasion of pins and socket-contacts

Pins and socket-contacts shall be resistant to corrosion and abrasion.

Socket-contacts and pin(s) of socket-outlets, which are made of copper or copper alloy, as specified in 26.5, are considered as complying with this requirement.

Compliance is checked by inspection or by chemical analysis, if necessary.

14.6 Enclosures of rewirable portable accessories

The enclosures of rewirable portable accessories shall completely enclose the terminals and the ends of flexible cable.

The construction shall be such that the conductors can be properly connected and that, when the accessory is wired and assembled as for normal use, it is unlikely that:

– pressing the cores together causes damage to the conductor insulation likely to result in a breakdown of the insulation;
– a core, whose conductor is connected to a live terminal, is not pressed against accessible metal parts;
– a core, whose conductor is connected to an earthing terminal, is not pressed against live parts.

14.7 Screws and nuts of rewirable portable accessories

Rewirable portable accessories shall be designed in such a way that terminal screws or nuts cannot become loose and fall out of position in such a way that they establish an electrical connection between live parts and the earthing terminal or metal parts connected to the earthing terminal.

Compliance with the requirements of 14.6 and 14.7 is checked by inspection and by manual test.

14.8 Strain relief

Rewirable portable accessories with earthing contact shall be designed with ample space for slack in the earthing conductor so that, if the strain relief is rendered inoperative, the connection of the earthing conductor is subjected to strain after the connections of the current-carrying conductors and, in the event of excessive stress, the earthing conductor will break after the current-carrying conductors.

Compliance is checked by the following test.

The current-carrying conductors of a flexible cable are connected to the accessory in such a way that they are led from the strain relief to the corresponding terminals along the shortest possible path. Following which, the core of the earthing conductor is led to its terminal and cut off at a distance 8 mm longer than necessary when using the shortest possible path for its correct connection.

The earthing conductor is then connected to the terminal. It shall then be possible to house the loop, which is formed by the earthing conductor owing to its surplus length when the accessory is assembled correctly.

In non-rewirable non-moulded-on accessories with earthing contact, the length of the conductors between the terminations and the cord anchorage shall be adjusted in such a way that the current-carrying conductors will be stressed before the earthing conductor, if the flexible cable slips in its anchorage.

Compliance is checked by inspection.

14.9 Risk of electric shock from loose wires

14.9.1 Terminals of rewirable portable accessories and terminations of non-rewirable portable accessories shall be located or shielded in such a way that loose wires from a conductor in the accessory will not present a risk of electric shock.

For non-rewirable moulded-on portable accessories, means shall be provided to prevent loose wires of a conductor from reducing the minimum isolation distance requirements between such wires and all accessible external surfaces of the accessory, with the exception of the engagement face of a plug.

Compliance is checked by the following:

– *for rewirable accessories, the test of 14.9.2;*
– *for non-rewirable non-moulded-on accessories, the test of 14.9.3;*
– *for non-rewirable moulded-on accessories, by verification and inspection according to 14.9.4.*

14.9.2 *A 6 mm length of insulation is removed from the end of a flexible conductor, having the minimum required nominal cross-sectional area specified in Table 4. One wire of the flexible*

conductor is left free and the remaining wires are fully inserted into and clamped in the terminal as for normal use.

The free wire is bent, without tearing the insulation back, in every possible direction, but without making sharp bends around barriers.

NOTE The prohibition against making sharp bends around barriers does not imply that the free wire has to be kept straight during the test. Sharp bends are, moreover, made if it is considered likely that such bends can occur during the normal assembly of the plug or portable socket-outlet, for example when a cover is pushed on.

The free wire of a conductor connected to a live terminal shall not touch any accessible metal part or be able to emerge from the enclosure when the accessory has been assembled.

The free wire of a conductor connected to an earthing terminal shall not touch a live part.

If necessary, the test is repeated with the free wire in another position.

14.9.3 *A length of insulation equivalent to the maximum designed stripping length declared by the manufacturer plus 2 mm is removed from the end of a flexible conductor having the cross-sectional area as fitted. One wire of the flexible conductor is left free in the worst position whilst the remaining wires are terminated in a manner as used in the construction of the accessory.*

The free wire is bent, without tearing the insulation back, in every possible direction but without making sharp bends around barriers.

NOTE The prohibition against making sharp bends around barriers does not imply that the free wire has to be kept straight during the test. Sharp bends are, moreover, made if it is considered likely that such bends can occur during the normal assembly of the plug or portable socket-outlet, for example, when a cover is pushed on.

The free wire of a conductor connected to a live termination shall not touch any accessible metal part or reduce the creepage distance and clearance through any constructional gap below 1,5 mm to the external surface.

The free wire of a conductor connected to an earth termination shall not touch any live part.

14.9.4 *Non-rewirable moulded-on accessories shall be inspected to verify that there are means to prevent stray wires of the conductor and/or live parts reducing the minimum distance through insulation to the external accessible surface below 1,5 mm (with the exception of the engagement face of plugs).*

NOTE The verification of "means" can require the checking of the product construction or assembly method.

14.10 Cord anchorage

For rewirable portable accessories:

– it shall be clear how the relief from strain and the prevention of twisting is intended to be effected;

– the cord anchorage, or at least part of it, shall be integral with or securely fixed to one of the component parts of the plug or portable socket-outlet;

– makeshift methods, such as tying the flexible cable in a knot or tying the ends with string, shall not be used;

– the cord anchorage shall be suitable for the different types of flexible cable which may be connected to it;

– screws, if any, which have to be operated to clamp the flexible cable, shall not serve to fix any other component;

NOTE This does not exclude a cover serving to retain the flexible cable in position in the cord anchorage provided the cable remains in place in the accessory when the cover is removed.

– cord anchorages shall be of insulating material or be provided with an insulating lining fixed to the metal parts;

– metal parts of cord anchorages, including clamping screws, shall be insulated from the earthing circuit.

Compliance is checked by inspection and, if applicable, by manual test.

14.11 Removal of covers, cover-plates or parts of them

For rewirable portable accessories and non-rewirable non-moulded-on portable accessories it shall not be possible to remove covers, cover-plates or parts of them intended to ensure protection against electric shock without the use of a tool.

Compliance is checked as follows:

– *for covers, cover-plates or parts of them whose fixing is of screw-type, compliance is checked by inspection;*

– *for covers, cover-plates or parts of them whose fixing is not dependent on screws and whose removal may give access to live parts, compliance is checked by the tests of 24.13.*

14.12 Bushings

If covers of portable socket-outlets are provided with bushings for the entry holes for the pins, these bushings shall not be removable from the outside or detachable inadvertently from the inside, when the cover is removed.

14.13 Screws intended to allow access to the interior of the accessory

Screws intended to allow access to the interior of the accessory shall be captive.

The use of tight-fitting washers of cardboard or the like is deemed to be an adequate method for making screws captive.

Compliance with the requirements of 14.12 and 14.13 is checked by inspection.

14.14 Engagement face of plugs

The engagement face of plugs shall have no projections greater than 0,5 mm other than the pins, when the plug is wired and assembled as for normal use.

Compliance is checked by inspection, after fitting conductors of the largest nominal cross-sectional area specified in Table 4.

NOTE The earthing contacts are not considered as projections from the engagement face.

14.15 Engagement in portable socket-outlets

Portable socket-outlets shall be designed in such a way that full engagement of associated plugs is not prevented by any projection from their engagement face.

Compliance is checked by the test of 13.5.

14.16 Portable accessories having IP code higher than IP20

Portable accessories having an IP code higher than IP20 shall be enclosed according to their IP classification when they are fitted with cables.

Plugs having an IP code higher than IP20, with the exception of the engagement face, shall be adequately enclosed when fitted with a flexible cable as for normal use.

Portable socket-outlets having an IP code higher than IP20 shall be adequately enclosed when fitted with a flexible cable as for normal use and without a plug in engagement.

Lid springs, if any, shall be made of corrosion-resistant material, such as bronze or stainless steel.

Compliance is checked by inspection and by the tests of 16.2.

NOTE Adequate enclosure when the plug is not in position can be achieved by means of a lid. This requirement does not imply that the lid, if any, or the entry openings for the pins need be closed when the plug is not in position, provided that the accessory passes the relevant test for the verification of the ingress of water.

14.17 Portable socket-outlets having means for suspension

Portable socket-outlets having means for suspension from a wall or other mounting surfaces shall be so designed that the suspension means do not allow access to live parts.

There shall be no free openings between the space intended for the suspension means, by which the socket-outlet is fixed to the wall, or to another mounting surface, and live parts.

Compliance is checked by inspection and by the tests of 24.12.1, 24.12.2 and 24.12.3.

14.18 Combinations of portable accessories and switches, circuit-breakers or other devices

Combinations of portable accessories and switches, circuit-breakers or other devices shall comply with the relevant individual IEC International Standards, if a relevant combined product standard does not exist.

Compliance is checked by testing the components according to the relevant IEC International Standard.

NOTE For combination with RCDs, see IEC 61540.

14.19 Lampholders

Portable accessories shall not be an integral part of lampholders.

Compliance is checked by inspection.

14.20 Plugs for equipment of class II

Plugs classified exclusively as plugs for equipment of class II may be rewirable or non-rewirable.

If the plugs are part of a cord set, the cord set shall be provided with a connector for equipment of class II.

If the plugs are part of a cord extension set, the cord extension set shall be provided with a portable socket-outlet for equipment of class II.

NOTE 1 In the following countries, rewirable plugs for class II equipment are not allowed: AT, AU, CZ, DE, FI, NL, NO, SE, SK.

NOTE 2 In the following countries, cord extension sets for equipment of class II are not allowed: AU, CZ, DE, DK, IT, SK, GB.

14.21 Components incorporated in accessories

Components, such as switches and fuses, incorporated in accessories shall comply with the applicable parts of the relevant IEC International Standard.

Components incorporated in portable accessories shall be so rated, or so protected, that overloading of the component, the plug, or the socket-outlet portion cannot occur in normal use.

Requirements for switches incorporated in portable accessories are detailed in Annex C.

For portable socket-outlets and rewirable plugs, the incorporated overcurrent protective device in the accessory shall have a rated current equal to or less than the rated current of the accessory.

NOTE 1 Examples of overcurrent protective devices are: fuses, current cut-outs, MCBs (miniature circuit breakers), RCBOs (residual current operated circuit breaker with integral overcurrent protection).

Any other component(s), such as switches or control devices, shall have a rated current not less than:

– the rated current of the accessory; or

– the rated current of the incorporated overcurrent protective device, if any.

For components having different rated currents for resistive and inductive loads, the rated current to be referred to is the rated current for the resistive load.

For non-rewirable plugs, any other incorporated component(s), such as switches or control devices, shall have a rated current not less than:

– the test current for the combination of the accessory and the cable as indicated in Table 18, for Clause 21, or

– the rated current of the incorporated overcurrent protective device, if any.

Any incorporated component(s) shall have a rated voltage not less than the rated voltage of the accessory.

Compliance is checked by inspection and, if necessary, by testing the component according to the relevant IEC International Standard.

When a control circuit reduces the current through the plug based on a temperature measurement, the following parameters shall be taken into consideration by the control device manufacturer:

– *the current shall not exceed the rated current of the plug;*

– *the temperature of the current-carrying parts of the plug shall not exceed 70 °C.*

NOTE 2 The temperature of the current-carrying parts of the plug is considered as the one measured using clamping units fitted on each pin according to Clause 19.

14.22 Plug which is an integral part of plug-in equipment

14.22.1 If a plug is an integral part of plug-in equipment, that equipment shall not cause overheating of the pins or impose undue strain on fixed socket-outlets.

NOTE Examples of equipment with plugs which are an integral part are razors and lamps with rechargeable batteries, plug-in transformers.

Plugs having a rating above 16 A and 250 V shall not be an integral part of other equipment.

For two-pole plugs, with or without earthing contact, having ratings up to and including 16 A and 250 V, compliance is checked by the tests of 14.22.2 and of 14.22.3.

14.22.2 *The plug of the equipment is inserted into a fixed socket-outlet complying with this document, the socket-outlet being connected to a supply voltage equal to 1,1 times the highest rated voltage of the equipment.*

After 1 h, the temperature rise of the pins shall not exceed 45 K.

14.22.3 *The equipment is inserted into a fixed socket-outlet complying with this document; the socket-outlet is pivoted about a horizontal axis through the axis of the live socket-contacts at a distance of 8 mm behind the engagement face of the socket-outlet and parallel to this engagement face.*

The additional torque which has to be applied to the socket-outlet in order to maintain the engagement face in the vertical plane shall not exceed 0,25 Nm.

14.23 Gripping

Plugs shall be shaped in such a way and/or be made of such material that they can easily be withdrawn by hand from the relevant socket-outlets.

In addition, the gripping surfaces shall be so designed that the plug can be withdrawn without having to pull the flexible cable.

Compliance is checked by inspection and in case of doubt by test.

NOTE Examples of possible tests are given in Annex B.

14.24 Membranes in inlet openings of portable accessories

Membranes in inlet openings of portable accessories shall meet the requirements of 13.22 and of 13.23.

14.25 Rewirable socket-outlets which can be fixed

Rewirable portable socket-outlets which can be assembled and wired for normal use after their rear part has been fixed onto a surface shall comply both with the requirements for portable socket-outlets and with the following additional requirements for surface fixed socket-outlets:

– provision for earthing: 11.2, 11.3, 11.6;
– terminals and terminations: 12.2.1;
– construction of fixed socket-outlets: Clause 13;
– resistance to ageing, protection provided by enclosures, and resistance to humidity: 16.2.2, 16.2.3;
– temperature rise: Clause 19;
– mechanical strength: Clause 24;
– resistance to heat: Clause 25;
– creepage distances, clearances and distances through sealing compound: Clause 27;
– resistance of insulating material to abnormal heat, to fire and to tracking: 28.1.2, glow-wire test.

NOTE In the following country portable socket-outlets are not permitted to be fixed: CA, US, ZA.

14.26 Requirements for shutters in portable socket-outlets

Portable socket-outlets shall be provided with shutters.

NOTE 1 In the following countries portable socket-outlets are not required to have shutters: AU, AT, CA, DE, JP, US.

NOTE 2 In the following country the standard sheets for the portable socket-outlets specify the requirements for shutters: DK.

14.101 Additional requirements for cord extension sets:

Socket-outlets to be used in cord extension sets shall have shutters.

NOTE 1 In the following countries, socket-outlets to be used in cord extension sets are not required to have shutters: AU, AT, CA, CH, SG, JP, US, DE.

NOTE 2 In the following country, the standards sheets for the portable socket-outlets specify the requirements for shutters: DK.

Plugs and socket-outlets shall comply with the relevant part of the IEC 60884 series.

NOTE 3 In the following country, BS 1363 applies to plugs and socket-outlets: UK.

Supply flexible cables shall comply with the IEC 60227 series (for polyvinyl chloride insulated cables) or the IEC 60245 series (for rubber insulated cables).

Each pole in the socket-outlet shall be connected to the corresponding pole of the plug.

NOTE 4 In the following country, flexible cords to BS6500 or BS7919 are also permitted: UK.

Where an earthing contact is provided in the socket-outlet it shall be connected to the corresponding earthing contact of the plug.

Compliance is checked by inspection.

14.102 Flexible cable

The type and length of the flexible cable and nominal cross-sectional area of the conductors of cord extension sets shall comply with Table 101.

Table 101 – Type and length of the flexible cable and nominal cross-sectional area of the conductors of cord extension sets

Rated current A	Lightest type of flexible cable	Minimum nominal cross-sectional area of the conductors mm²	Maximum length of the flexible cable m
2,5	60227 IEC 52	0,50	3
6	60227 IEC 52	0,75	5
	60227 IEC 53	1,00	
10[c]	60227 IEC 53 or 60245 IEC 53	0,75	5
		1,00	30
13	60227 IEC 53 or 60245 IEC 53	1,00	5
		1,50[a]	30
16[c]	60227 IEC 53 or 60245 IEC 53	1,00[b]	2
		1,50	30

[a] In the following countries the minimum nominal cross-sectional area is 1,25 mm²: UK and SG.

[b] In the following countries, for cord extension sets with socket-outlet of class I, the minimum nominal cross-sectional area is 1,5 mm²: DE, FI.

[c] In the following country, the minimum nominal cross-sectional area for rated current 10 A is 1.0 mm², and for rated current 16 A is 1,5 mm²: CN.

NOTE 1 In the following countries, cord extension sets having a rated current of 6 A and 13 A are not allowed: CH, DE, FI and NO.

NOTE 2 In the following countries, cord extension sets intended for outdoor use should be provided with cable type 60245 IEC 53 or equivalent: FI, NO, SA and SE.

NOTE 3 In the following country, the nominal cross-sectional area is 1,5 mm^2 for 5 m maximum length and 2,5 mm^2 for 30 m maximum length: SA.

NOTE 4 In the following country, the minimum cross-sectional area is 1 mm^2 for 5 m maximum length and 1,5 mm^2 for 30 m maximum length: CH.

NOTE 5 In the following country, cord extension sets rated 10 A shall have an incorporated protection: NO.

The length of the cable is measured between the operating faces of the plug and the socket-outlet. In the case of multiple socket-outlets the measurement is taken to the socket-outlet closest to the plug.

Compliance is checked by inspection and measurement.

14.103 Rated voltage of cord extension set components

The rated voltage of the plug and the socket-outlet shall be the same. The rated voltage of the cable shall not be less than the rated voltage of the plug and socket-outlet.

Compliance is checked by inspection.

14.104 Plug rating in a cord extension set

The rated current of the plug shall not be lower than the rated current of the socket-outlet.

In a cord extension set protected against overload (e.g. having a fused plug or a protective overcurrent device), the rated current of the plug shall not be lower than the rated current of the protective overcurrent device.

For a cord extension set with a multiple portable socket-outlet and not incorporating a protective overcurrent device, the rated current of the plug shall be at least the arithmetic sum of the highest rated currents of all plugs which can be inserted into the cord extension set or the same as the rated current of the relevant socket-outlet of the fixed wiring the plug is intended to be connected to, whichever is the lower.

NOTE 1 In the following country the following part of the last paragraph “rated current of the relevant socket-outlet of the fixed wiring” shall not be considered as it is possible to insert a 10 A, 13 A or 16 A plug into a 10 A, 13 A or 16 A socket-outlet: DK.

NOTE 2 In the following country, cord extension sets comprising 3 or more socket-outlets shall be fitted with an overcurrent protective device: ZA.

Compliance is checked by inspection.

14.105 Appearance of cord extension sets

Cord extension sets shall not have an enclosure that is shaped or decorated like a toy.

NOTE Examples of such enclosures are those representing animals, characters, persons or scale models.

Compliance is checked by inspection.

15 Interlocked socket-outlets

IEC 60884-1:2022, Clause 15 is not applicable.

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

The protection degree of the cord extension set is the same as the lowest protection degree of the plug and the portable socket-outlet.

Compliance is checked by inspection.

17 Insulation resistance and electric strength

IEC 60884-1:2022, Clause 17 is not applicable, see Clause 4.

18 Operation of earthing contacts

IEC 60884-1:2022, Clause 18 is not applicable, see Clause 4.

19 Temperature rise

IEC 60884-1:2022, Clause 19 is not applicable, see Clause 4.

NOTE In the following country overcurrent protection is electrically shorted out with a link of negligible resistance for the execution of the temperature rise test: ZA.

20 Breaking capacity

IEC 60884-1:2022, Clause 20 is not applicable, see Clause 4.

21 Normal operation

IEC 60884-1:2022, Clause 21 is not applicable, see Clause 4.

22 Force necessary to withdraw the plug

IEC 60884-1:2022, Clause 22 is not applicable, see Clause 4.

23 Flexible cables and their connection

IEC 60884-1:2022, Clause 23 is not applicable, see Clause 4.

24 Mechanical strength

IEC 60884-1:2022, Clause 24 is not applicable, see Clause 4.

25 Resistance to heat

IEC 60884-1:2022, Clause 25 is not applicable, see Clause 4.

26 Screws, current-carrying parts and connections

IEC 60884-1:2022, Clause 26 is not applicable, see Clause 4.

27 Creepage distances, clearances and distances through sealing compound

IEC 60884-1:2022, Clause 27 is not applicable, see Clause 4.

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

IEC 60884-1:2022, Clause 28 is not applicable, see Clause 4.

29 Resistance to rusting

IEC 60884-1:2022, Clause 29 is not applicable, see Clause 4.

30 Additional tests on pins provided with insulating sleeves

IEC 60884-1:2022, Clause 30 is not applicable, see Clause 4.

31 EMC requirements

31.1 Immunity

The operation of accessories within the scope of this document, in normal use, is not affected by electromagnetic disturbances.

Therefore, no test is required.

If the accessory has an incorporated active electronic circuit, for example, an electronic switch, additional requirements on EMC shall be fulfilled according to the relevant products standards.

31.2 Emission

Accessories within the scope of this document are intended for continuous use; in normal use they do not generate electromagnetic disturbances.

Therefore, no test is required.

If the accessory has an incorporated active electronic circuit, for example, an electronic switch, additional requirements on EMC shall be fulfilled according to the relevant products standards.

32 Electromagnetic fields (EMF) requirements

Accessories within the scope of this document are intended for continuous use; in normal use they do not generate an additional electromagnetic field beside the one originating from the flowing current.

Therefore, no test is required.

If the accessory has an incorporated active electronic circuit, for example, an electronic switch, additional requirements on EMF shall be fulfilled according to the relevant products standards.

Annex A
(normative)

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

A.1 General remarks

All factory-wired cord extension sets shall be subjected to the following tests, as appropriate.

The test equipment or manufacturing systems shall be such that failed products are either made unfit for use or separated from satisfactory products in such a way that they cannot be released for sale.

NOTE "Unfit for use" means that the accessory is treated in such a way that it cannot fulfil the intended function. It is, however, accepted that repairable products (by a reliable system) can be repaired and re-tested.

It shall be possible by process or manufacturing system to identify that accessories released for sale have been subjected to all the appropriate tests.

The manufacturers shall maintain records of the tests carried out which show:

– the type of product;
– the date of test;
– the place of manufacture (if manufactured in more than one place);
– the quantity tested;
– the number of failures and actions taken, i.e. destroyed/repaired.

The test equipment shall be checked before and after each period of use and for periods of continuous use, at least once every 24 h. During these checks the equipment shall show that it indicates faults when known faulty products are inserted or simulated faults are applied.

Products manufactured prior to a check shall only be released for sale if the check is found satisfactory.

Test equipment shall be verified (calibrated) at least once a year. Records shall be kept of all checks and any adjustments found necessary.

A.2 Polarized systems, phase (L) and neutral (N) – Correct connection

For polarized systems the test shall be made using a SELV source, a voltage is applied for a period of not less than 2 s which may be reduced to not less than 1 s on test equipment with automatic timing:

– *for plugs and portable socket-outlets, between the remote end of the L and N conductors of the flexible cable independently, and the corresponding L and N pin or contact of the accessory;*
– *for cord extension sets, between the L and N pin of plug at one end of the cable and the last corresponding L and N contact of the portable socket-outlet at the other end of the cable. In case of doubt all the connections shall be verified.*

Polarity shall be correct.

Other suitable tests can be used.

For plugs and portable socket-outlets intended for use on three-phase supplies, the test shall check that the connection of the phase conductors is in the correct order of phase sequence.

A.3 Earth continuity

The test shall be made using a SELV source, a voltage is applied for a period of not less than 2 s which may be reduced to not less than 1 s on test equipment with automatic timing:

– *for plugs and portable socket-outlets, between the remote end of the earth conductor of the flexible cable, and the earth pin or contact of the accessory, as appropriate;*

– *for cord extension sets, between the corresponding earth pin or earthing contact of the plug and the last earthing contact or pin of the portable socket-outlet at the other end of the cable. In case of doubt all the connections shall be verified.*

Continuity shall be present.

Other suitable tests can be used.

A.4 Short-circuit/wrong connection and reduction of creepage distance and clearances between phase (L) or neutral (N) to earth ( )

The test shall be carried out by applying at the supply end, for example, to a plug, for a period of not less than 2 s which may be reduced to not less than 1 s on test equipment with automatic timing:

– *1 250 V ± 10 % for accessories having a rated voltage of up to and including 130 V;*

– *2 000 V ± 10 % for accessories having a rated voltage exceeding 130 V;*

or

– *for all rated voltages, by applying an impulse voltage test using a 1,2/50 µs waveform of 4 kV peak value and three impulses for each pole, with intervals of not less than 1 s:*

  - *between L and ,*
  - *between N and .*

L and N may be connected together for this test.

No flashover shall occur.

Table A.1 – Deleted

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 D
(normative)

Requirements for plugs and fixed or portable socket-outlets intended to be used with AWG cables

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

Annex E
(informative)

Tests to be applied during the production of crimped connections in accessories

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

Annex F
(normative)

Additional requirements for accessories provided with insulation-piercing terminals

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

Annex G
(informative)

Additional tests and requirements for accessories intended to be used in ambient temperatures below −5 °C down to and including −45 °C

G.1 Overview

NOTE In the following countries, this annex is normative for accessories intended to be used in temperatures below normal range, e.g. outdoor use: CA, FI, NO, SE.

As given in the scope, plugs and socket-outlets complying with the main part of this document 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.

This Annex G provides tests and requirements for accessories used in ambient temperatures below −5 °C down to and including −45 °C.

If an accessory is declared for use in this range of temperatures, the declared ambient temperature shall be −25 °C or lower.

G.2 General requirements on tests

Socket-outlets and plugs shall be tested using plugs and socket-outlets of the same system, having the same rated current and the same number of poles.

The following additional tests shall be conducted on 3 new specimens previously submitted to the test of 16.1.

All tests in this Annex G are carried out at a temperature of −25 °C. If a lower value is declared by the manufacturer, the declared value shall be a multiple of 5 °C. All tests in this Annex G shall be carried out at the declared temperature.

G.3 Marking

It is recommended that accessories are marked with the following symbol on the main part.

– Symbol intended for use in cold environment, IEC 60417-6292 (2015-11)

The symbol shall indicate the declared value.

G.4 Construction of accessories

G.4.1 Fixing of covers, cover plates

The removal of covers and cover plates whose fixing is not dependent on screws and whose removal is obtained by applying a force in a direction approximately perpendicular to the mounting/supporting surface shall be still adequate under the declared cold temperature when their removal may give access, with the test probe B of IEC 61032, to live parts.

The accessories are kept for 2 h in a freezer at the declared cold temperature ± 2 °C.

Immediately afterwards, within 1 min, the following test is initiated:

Forces are gradually applied in directions perpendicular to the mounting surfaces, in such a way that the resulting force acting on the centre of the covers, cover plates, or parts of them is:

– *40 N, for covers, cover plates, or parts of them complying with the tests of 24.16 and 24.17; or*
– *80 N, for other covers, cover plates, or parts of them.*

The force is applied for 1 min. The covers, cover plates shall not come off.

After the test the specimens shall show no damage which would lead to non-compliance with this document.

G.4.2 Requirements for membranes in inlet openings

If the accessory is equipped with membranes (grommets) the test of 13.23 shall be performed at the declared temperature ± 2 °C.

G.4.101 Requirements for flexible cables

Flexible cables used in cord extension sets intended to be used in ambient temperatures below −5 °C down to and including −45 °C shall be suitable for use at the declared cold temperatures.

Compliance is checked by inspection.

G.5 Test for accessories intended to be used in ambient temperatures below −5 °C

In the case of switched socket-outlets, each pole of the switch is wired with an electrical indicator supplied with a voltage between 40 V and 50 V to easily evaluate that it is operating during the test as intended.

The accessories are kept for at least 16 h but no more than 24 h in a freezer at the declared temperature ±2 °C.

Once an hour during the last 4 h, the accessories are subjected to the following test sequence:

1) the accessories are taken out from the freezer;
2) *immediately afterwards (within 30 s), the following tests are initiated and the specified operations performed without a break:*
   – *socket-outlets are tested with a plug of the same rated current at room temperature, which is fully inserted and withdrawn 3 times; the socket-outlet lid, if any, is opened and closed each time;*
   – *plugs shall be fully inserted and withdrawn 3 times into a socket-outlet of the same rated current at room temperature;*
   – *in the case of switched socket-outlets the switches of the socket-outlets shall be operated for 20 operations before the plug insertion and withdrawal sequence. The rate of operation shall be approximately 30 operations per minute, i.e. each test sequence shall be 40 s in duration;*
3) *immediately after the operation described in 2), the accessories shall be put again into the freezer.*

During and after this test the accessories shall operate properly, and show no visible harmful deformation, cracks or similar damage which would lead to non-compliance with this document.

G.6 Mechanical strength

Products declared as suitable for use at a temperature below −5 °C shall meet the mechanical properties required at the declared temperature.

For fixed accessories the test is performed as follows:

Flush-type accessories are mounted in a recess provided in a block of hornbeam or material having similar mechanical characteristics, which is fixed to a sheet of plywood, and not in its relevant mounting box.

If wood is used for the block, the direction of the wood fibres shall be perpendicular to the direction of impact.

Flush-type screw fixing socket-outlets shall be fixed by means of screws to lugs recessed in the hornbeam block. Flush-type claw fixing socket-outlets shall be fixed to the block by means of the claws.

Surface type accessories are mounted on a rigid plane support by their normal mounting means,

Fixing screws of main parts and covers are tightened with a torque equal to two-thirds of that specified in Table 7.

The assemblies are kept for at least 16 h but not more than 24 h in a freezer at the declared temperature ±2 °C.

Before applying the blows the assembly is fixed on a rigid support for test. In order to ensure that the specimen is rigidly supported, it may be necessary when performing the test to place the specimen against a plane solid support, for example, a wall or a floor made of brick or concrete.

A support is considered to be sufficiently rigid if its displacement is less than or equal to 0,1 mm under the effect of an impact directly applied and whose energy corresponds to the maximum impact energy of the test.

Then, the specimens are checked by applying blows by means of the spring hammer test apparatus as described in IEC 60068-2-75 (test Ehb).

The blows shall be applied immediately afterwards, and finished within 1 min.

Inlet openings which are not provided with knock-outs, are left open; if they are provided with knock-outs, one of them is opened.

Table G.1 – Energy for impact tests

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.

The impact energy determined by the part of the specimen which projects most from the mounting surface is applied on all parts of the specimen, with the exception of those specified in A of Table G.1.

The specimens are subjected to evenly distributed blows, as close to perpendicular as possible to the surface. The blows are not applied to knock-outs.

The following blows with an impact energy according to Table G.1 are applied:

– *for parts specified in A, five blows:*
  - *one blow to the centre,*
  - *one blow on each of the two most unfavourable points between the centre and the edges, horizontally,*
  - *one blow on each of the two most unfavourable points between the centre and the edges, vertically;*
– *for parts specified in B (as far as applicable), C and D, four blows:*
  - *one blow is applied on each side of the specimen where the blow can be applied.*

If inlet openings are provided, the specimen is mounted in such a way that the two lines of blows are, as closely as possible, equidistant from these openings.

Cover-plates and other covers of multiple socket-outlets are treated as though they were the corresponding number of separate covers, but only one blow is applied to any one point.

For socket-outlets having an IP code higher than IPX0, the test is made with the lids, if any, closed and, in addition the appropriate number of blows is applied to those parts which are exposed when the lids are open.

After the test, the specimen shall show no damage which would lead to non-compliance with this document. In particular, live parts shall not become accessible.

After the test on a lens (window for pilot lights) the lens may be cracked and/or dislodged, but it shall not be possible to touch live parts with:

- *the test probe B of IEC 61032 under the conditions stated in 10.2;*
- *the test probe 11 of IEC 61032 under the conditions stated in 10.2, but with a force of 10 N;*
- *the steel wire of Figure 8, applied with a force of 1 N, for accessories with increased protection.*

In case of doubt, it is verified that it is possible to remove and replace external parts such as boxes, enclosures, covers and cover-plates, without these parts or their insulating lining being broken.

If a cover-plate backed by an inner cover is broken, the test is repeated on the inner cover, which shall remain unbroken.

Damage to the finish, small dents which do not reduce creepage distances or clearances below the value specified in 27.1 and small chips which do not adversely affect the protection against electric shock or the protection against the 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 accessory are ignored if the accessory complies with this document even if this part is omitted. If a decorative cover is backed by an inner cover, fracture of the decorative cover is ignored if the inner cover withstands the test after removal of the decorative cover.

Portable accessories are tested according to 24.5 at the declared temperature.

Annex H
(informative)

Additional tests and requirements for accessories intended to be used in ambient temperatures above +40 °C up to and including +70 °C

H.1 Overview

As given in the scope, plugs and socket-outlets complying with the main part of this document 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.

This Annex H provides a methodology for de-rating the operating current of an accessory when used in ambient temperatures above +40 °C up to and including +70 °C.

H.2 General requirements on tests

Socket-outlets and plugs shall be tested using plugs and socket-outlets of the same system, having the same rated current and the same number of poles.

The following additional tests shall be conducted on 3 new specimens.

H.3 Markings

It is recommended that accessories in compliance with the requirements of Annex H are marked with a value t_a as determined in H.5.2 if the value of t_a is +40 °C or higher. The marked t_a value shall be in increments of 5 °C and rounded down to the lower value e.g. +40 °C, +45 °C, +50 °C, etc.

EXAMPLE: t_a measured value 47 °C, declared and marked value t_a 45 °C.

For products declared as suitable for use at an ambient temperature above +40 °C, instructions supplying information about the temperature t_a and/or the de-rated current at given ambient temperatures shall be available in the manufacturer's instructions.

Depending on the application, appropriate current limiting devices may be needed to protect the circuit and in this case the information shall be available in the manufacturer's instructions.

Markings are checked by inspection and by the test of 8.8.

H.4 Construction of accessories

If the accessory is equipped with membranes (grommets), the test of 13.22 shall be performed at (+70 ± 2) °C.

H.5 Determination of t_a and the rated and de-rated current in relation to the ambient temperature

H.5.1 General

Each accessory is wired and installed according to Clause 19, and placed in a heating cabinet.

H.5.2 Determination of the maximum ambient temperature (t_a) for operation of the accessory at the rated current

The value of t_a is determined as follows:

Each accessory is loaded at rated current and the temperature in the heating cabinet is adjusted until the highest value of the temperature measured of any terminal is maintained at (+70 ± 2)°C for a period of 30 min.

The adjusted value of the heating cabinet required to maintain the highest measured temperature of the terminals at (+70 ± 2) °C for 30 min is defined as t_a.

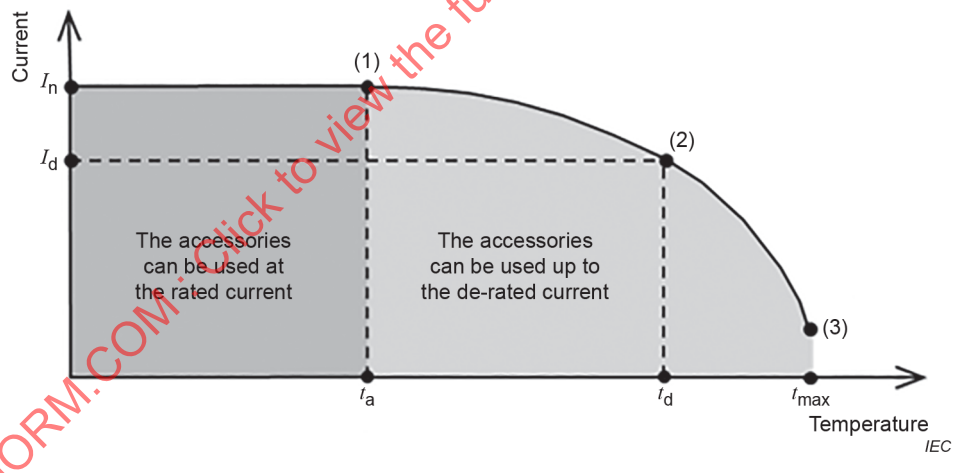
H.5.3 Determination of the de-rated operating currents for ambient temperatures above t_a

The temperature of the heating cabinet is then increased by steps of maximum 5 °C, the test current being reduced in order to keep the highest measured temperature at the terminals constant at (70 ± 2) °C.

For each step, the measured de-rated operating current (I_d) is recorded.

This procedure is continued until the highest measured temperature at the terminals and the heating cabinet is maintained at (70 ± 2) °C for a period of 30 min.

An example is shown in Figure H.1.



(1) I_n the ambient temperature t_a, the accessories can be used at the rated current I_n

(2) I_n the ambient temperature t_d, the accessories can be used up to the de-rated current I_d

(3) t_{max} is 70 °C, the accessories' maximum ambient temperature of use

Figure H.1 – Schematic drawing of a de-rating curve with an example of a de-rated current I_d at the operating ambient temperature t_d

De-rating current value at elevated temperature of a product can be given by graph shown in Figure H.1 or at fixed values in increments of 5 K.

H.6 Test to evaluate the long-term behaviour of the accessories in ambient temperatures above +40 °C up to and including +70 °C

The tests are conducted in a heating cabinet as described in 16.1 under the following conditions:

For switched socket-outlets, before starting the test below, each pole of the switch is wired with an electrical indicator supplied with a voltage between 40 V and 50 V to easily evaluate that it is operating as intended during the test.

The specimens are placed in a heating cabinet for seven days at 100 °C. For socket-outlets, the test is carried out without a plug inserted.

The specimens are then taken out of the cabinet and kept at room temperature in a relative humidity between 45 % and 55 % for at least four days (96 h).

The specimens shall show no crack visible with normal or corrected vision without additional magnification, nor shall the material have become sticky or greasy, this being judged as follows:

– with the forefinger wrapped in a dry piece of rough cloth the specimen is pressed with a force of 5 N;

– no traces of the cloth shall remain on the specimen and the material of the specimen shall not stick to the cloth.

Then a plug with the same rated current as the socket-outlet is fully inserted and withdrawn 3 times, the socket-outlet lid is opened and closed each time.

In the case of switched socket-outlets the switches of the socket-outlets shall be operated for 20 operations before the plug insertion and withdrawal sequence. The rate of operation shall be approximately 30 operations per minute.

During and after this test the switched socket-outlets shall operate properly.

After the test, the specimens shall show no damage which would lead to non-compliance with this document.

The tests of 10.5, 22.2, 22.3, 23.2, 23.4, 24.2 and 24.9 of the main body text of this document shall be performed in addition as 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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IEC 60884-2-6:1997, *Plugs and socket-outlets for household and similar purposes – Part 2-6: Particular requirements for switched socket-outlets with interlock for fixed electrical installations*

IEC 60998 (all parts), *Connecting devices for low-voltage circuits for household and similar purposes*

IEC 60998-2-1, *Connecting devices for low-voltage circuits for household and similar purposes – Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units*

IEC 60998-2-2, *Connecting devices for low-voltage circuits for household and similar purposes – Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units*

IEC 60998-2-3, *Connecting devices for low-voltage circuits for household and similar purposes – Part 2-3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units*

IEC 60999 (all parts), *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units*

IEC 60999-1, *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm^2 up to 35 mm^2 (included)*

IEC 61140, *Protection against electric shock – Common aspects for installation and equipment*

IEC 61242, *Electrical accessories – Cable reels for household and similar purposes*

IEC 61540, *Electrical accessories – Portable residual current devices without integral overcurrent protection for household and similar use (PRCDs)*

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INTERNATIONAL STANDARD

Plugs and socket-outlets for household and similar purposes – Part 2-7: Particular requirements for cord extension sets

IEC 60884-2-7:2025-02(en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD AND SIMILAR PURPOSES –

Part 2-7: Particular requirements for cord extension sets

FOREWORD

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IEC 60884-2-7 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 2011, and Amendment 1:2013. 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/1548/FDIS	23B/1562/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 cord extension sets.

Where this document states "addition", "modification" or "replacement", the relevant requirement, test specifications or explanatory matter in IEC 60884-1:2022 shall be adapted accordingly.

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

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

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 in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD AND SIMILAR PURPOSES –

Part 2-7: Particular requirements for cord extension sets

1 Scope

Replacement:

This part of IEC 60884 applies to cord extension sets, rewirable and non-rewirable, with or without earthing contact, with a rated voltage greater than 50 V but not exceeding 440 V and a rated current not exceeding 16 A, intended for household and similar purposes, either indoors or outdoors.

NOTE 1 In the following countries, cord extension sets only for equipment of class II are not allowed: DE, DK and UK.

This document does not apply to cord extension sets with means for reeling.

Cord extension sets intended to be used as socket-outlets for furniture are additionally covered by IEC 60884-2-8.

This document also applies to cord extension sets which are intended to be used in a cable reel, and which therefore become cable reels with a detachable flexible cable. For the combination of the cord extension set, the reel requirements and tests of IEC 61242 apply in addition.

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

NOTE 2 In the following country, cord extension sets comprising a socket-outlet for class II equipment are not permitted; socket-outlets in cord extension sets shall always be Class I as defined in IEC 61140: UK.

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 with the following exceptions:

Addition:

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

IEC 60884-2-8:—, *Socket-outlets for furniture*[1]

[1] Under preparation. Stage at the time of publication: IEC CDV 60884-2-8:2024.