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INTERNATIONAL STANDARD

COMMENTED VERSION

**Household and similar electrical appliances - Safety -
Part 2-23: Particular requirements for hair care and similar appliances**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Household and similar electrical appliances - Safety -
Part 2-23: Particular requirements for ~~appliances for skin or~~ hair care and
similar appliances 1**

FOREWORD

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This commented version (CMV) of the official standard IEC 60335-2-23:2026 edition 7.0 allows the user to identify the changes made to the previous IEC 60335-2-23:2016+AMD1:2019 CSV edition 6.1. Furthermore, comments from IEC TC 61 experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

IEC 60335-2-23 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This seventh edition cancels and replaces the sixth edition published in 2016 and Amendment 1:2019. This edition constitutes a technical revision.

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

- a) alignment with IEC 60335-1:2020;
- b) conversion of some notes to normative text (Clause 1, 11.101, 20.1);
- c) change in standard title and relocation of skin care appliances, such as facial saunas and foot care appliances, to IEC 60335-2-115 (Clause 1, 3.1.9, 3.5.103, 6.1, 7.12, 8.1.4, 11.8, 15.2, 21.1);
- d) clarification of testing of appliances with PTC heating elements (10.1, 10.2);
- e) clarification of the application of test probe 18 for appliances for use in hairdressing salons (8.1.1, 20.2, B.22.3, B.22.4);
- f) addition of accessible surface temperature limits including marking of hot surfaces (7.1, 7.6, 7.12, 7.14, 7.15, 11.3, 11.8);
- g) clarification of placement of the appliance in the test corner (19.2);
- h) addition of moisture resistance and strength tests for detachable power supply parts (6.2, 21.102, 21.103, 24.2).

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

Draft	Report on voting
61/7533/FDIS	61/7542/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 part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments unless that edition precludes it; in that case, the latest edition that does not preclude it is used. It was established on the basis of the sixth edition (2020) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Particular requirements for hair care and similar appliances.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

NOTE 2 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;

- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

NOTE 3 The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations can need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances - Safety*, 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.

INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

Guidance documents concerning the application of the safety requirements for appliances can be accessed via TC 61 supporting documents on the IEC website

<https://www.iec.ch/tc61/supportingdocuments>

This information is given for the convenience of users of this International Standard and does not constitute a replacement for the normative text in this standard.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules ~~may~~ can differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

~~NOTE 1 – For example, if appliances within the scope of this Part 2 include an ion generator, then IEC 60335-2-65 is applicable as far as is reasonable.~~

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

~~NOTE 2 1~~ This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

~~NOTE 3 2~~ ~~Horizontal and generic standards~~ Horizontal publications, basic safety publications and group safety publications covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. ~~For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.~~ **2**

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

NOTE 3 Standards dealing with non-safety aspects of household appliances are:

- IEC standards published by TC 59 concerning methods of measuring performance;
- CISPR 11, CISPR 14-1 and relevant IEC 61000-3 series standards concerning electromagnetic emissions;
- CISPR 14-2 concerning electromagnetic immunity;
- IEC standards published by TC 111 concerning environmental matters. **3**

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of electric appliances for the care of ~~skin or~~ the hair of persons or animals and similar appliances **4**, intended for household and similar purposes, their **rated voltage** being not more than 250 V including direct current (DC) supplied appliances and **battery-operated appliances**. **5**

~~NOTE 101~~—Examples of appliances that are within the scope of this standard are

- curling combs;
- curling irons;
- ~~– curling rollers with separate heaters;~~ **6**
- ~~– facial saunas;~~ **7**
- hairdryers;
- hair straighteners;
- hand dryers;
- **heaters for detachable curlers;**
- ~~– water filled foot care appliances without massage function;~~ **8**
- permanent-wave appliances.

~~NOTE 102~~—Appliances covered by this standard ~~may~~ can incorporate steam-producing or spray-producing devices.

NOTE 101 Hand dryers can have a feature to redirect the air so that it can be used to dry the face or hair.

Appliances not intended for normal household use but that nevertheless ~~may~~ can be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard.

~~NOTE 103~~—Examples are appliances for use in hairdressing salons.

This standard deals with the reasonably foreseeable hazards presented by appliances that are encountered by all persons. However, in general, it does not take into account

- persons (including children) whose
 - physical, sensory or mental capabilities; or
 - lack of experience and knowledge
 prevents them from using the appliance safely without supervision or instruction;
- children playing with the appliance.

~~NOTE 104~~—Attention is drawn to the fact that

- it is recognized that persons having very extensive and complex disabilities can have needs beyond the level addressed in this standard.
- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements ~~may~~ can be necessary;
- in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour and similar authorities.

~~NOTE 105~~—This standard does not apply to

- appliances intended exclusively for industrial purposes;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);
- shavers, hair clippers and similar appliances (IEC 60335-2-8);
- ~~— blankets, pads, clothing and similar flexible heating appliances (IEC 60335-2-17);~~
- ~~— appliances for skin exposure to optical radiation (IEC 60335-2-27);~~
- ~~— sauna heating appliances (IEC 60335-2-53);~~
- cosmetic and beauty care appliances incorporating lasers and intense light sources (IEC 60335-2-113);
- ~~— water filled foot massagers (IEC 60335-2-32);~~
- appliances intended for ~~medical purposes (IEC 60601)~~ skin care (IEC 60335-2-115).

~~NOTE 106~~—A water-filled **foot care appliance** with water jets is not considered to have a massage function. **9**

2 Normative references

This clause of Part 1 is applicable except as follows:

Addition:

ISO 7010:~~2011~~2019, *Graphical symbols - Safety colours and safety signs - Registered safety signs*

IEC 60584-1, *Thermocouples - Part 1: EMF specifications and tolerances*

Bibliography

The bibliography of Part 1 is applicable except as follows.

Addition:

IEC 60335-2-8, *Household and similar electrical appliances - Safety - Part 2-8: Particular requirements for shavers, hair-clippers and similar appliances*

~~IEC 60335-2-17, Household and similar electrical appliances - Safety - Part 2-17: Particular requirements for blankets, pads, clothing and similar flexible heating appliances~~

~~IEC 60335-2-27, Household and similar electrical appliances - Safety - Part 2-27: Particular requirements for appliances for skin exposure to ultraviolet and infrared radiation~~

~~IEC 60335-2-32, Household and similar electrical appliances - Safety - Part 2-32: Particular requirements for massage appliances~~

~~IEC 60335-2-53, Household and similar electrical appliances - Safety - Part 2-53: Particular requirements for sauna heating appliances and infrared cabins~~

~~IEC 60335-2-65, Household and similar electrical appliances - Safety - Part 2-65: Particular requirements for air-cleaning appliances~~

IEC 60335-2-113, *Household and similar electrical appliances - Safety - Part 2-113: Particular requirements for ~~cosmetic and~~ beauty care appliances incorporating lasers and intense light sources*

IEC 60335-2-115, *Household and similar electrical appliances - Safety - Part 2-115: Particular requirements for skin care appliances*

List of comments

- 1 The title of this standard is updated, as skin care products are now included under IEC 60335-2-115.
- 2 This revision is for alignment with IEC 60335-1:2020.
- 3 This revision is for alignment with IEC 60335-1:2020.
- 4 The scope of this standard is updated, as skin care products are now included under IEC 60335-2-115.
- 5 This revision is for alignment with IEC 60335-1:2020.
- 6 This product example is removed due to ambiguity regarding its equivalence with heaters for detachable curlers.
- 7 This product example is now covered by IEC 60335-2-115.
- 8 This product example is now covered by IEC 60335-2-115.
- 9 This list is updated, as skin care products are now included under IEC 60335-2-115.
- 10 This revision maintains the normal operation while charging as specified in IEC 60335-1:2020.
- 11 These texts are now covered by IEC 60335-2-115.
- 12 This definition is now covered by IEC 60335-2-115.
- 13 Functional surfaces on heating appliances are hot by design. Their definition is necessary since they are excluded from Table 101 limit as noted in table footnote a.
- 14 This change maintains the second paragraph in IEC 60335-1:2020 explaining the difference between a class III construction with a detachable power supply part and a class III appliance.
- 15 Hair straighteners is added in this category as similar products such as curling irons are classified as class II or Class III.
- 16 This is now covered by IEC 60335-2-115.
- 17 This is a common requirement for detachable power supply parts in a flexible cord.
- 18 Functional and adjacent surfaces of heating appliances are known to be hot due to the intended function of the appliance. Identification of other hot surfaces is required when the temperatures in Table 101 are exceeded as noted in table footnote b.
- 19 It is common to require the meaning of symbols used in place of marking text to be explained in the instructions.
- 20 This is now covered by IEC 60335-2-115.
- 21 This is now covered by IEC 60335-2-115.
- 22 This instruction is introduced so that manufacturers can state whether the appliance is intended only to be used in hairdressing salons, in which case test probe 18 is not applied.
- 23 Functional and adjacent surfaces of heating appliances are known to be hot due to the intended function of the appliance. Identification of other hot surfaces is required when the temperatures in Table 101 are exceeded as noted in table footnote b.

- 24 Functional and adjacent surfaces of heating appliances are known to be hot due to the intended function of the appliance. Identification of other hot surfaces is required when the temperatures in Table 101 are exceeded as noted in table footnote b.
- 25 Appliances only for use in hairdressing salons are not considered to be within reach of children up to 14 years in age according to IEC Guide 117, so test probe 18 is not applied.
- 26 This is now covered by IEC 60335-2-115.
- 27 This revision is introduced to consider products equipped with timers or appliances that automatically transition to an alternative operating mode with reduced power consumption.
- 28 This requirement is made considering the different power inputs of PTC heating elements. Using the arithmetic mean value (AMV) ensures consistent and repeatable results.
- 29 This revision is introduced to consider products equipped with timers or appliances that automatically transition to an alternative operating mode with reduced input current.
- 30 This requirement is made considering the different current inputs of PTC heating elements. Using the arithmetic mean value (AMV) ensures consistent and repeatable results.
- 31 Limits on the temperature rise of external accessible surfaces are introduced to address the risk of thermal injury from contact with external accessible surfaces based on IEC Guide 117 for Temperatures of touchable hot surfaces.
- 32 This revision maintains the requirements for appliance outlets and socket outlets and the test duration for charging of battery-operated appliances as specified in IEC 60335-1:2020.
- 33 This modification is for alignment with IEC 60335-1:2020 and aligns the test duration for operation of battery-operated appliances with that of mains operated appliances.
- 34 Limits on the temperature rise of external accessible surfaces are introduced to address the risk of thermal injury from contact with external accessible surfaces based on IEC Guide 117 for Temperatures of touchable hot surfaces.
- 35 This addition clarifies that these parts are considered to be held for short periods only.
- 36 This addition specifies the temperature rise limits for parts that are in contact with skin.
- 37 This is now covered by IEC 60335-2-115.
- 38 This revision is for alignment with IEC 60335-1:2020.
- 39 This is now covered by IEC 60335-2-115.
- 40 This revision clarifies that all applicable items shall be applied one at a time.
- 41 This revision clarifies how to position hand-held appliances at the test corner for consistent results.
- 42 This revision provides additional information regarding the procedure for identifying the minimum voltage required to prevent operation of the thermal cut-out.
- 43 Appliances only for use in hairdressing salons are not considered to be within reach of children up to 14 years in age according to IEC Guide 117, so test probe 18 is not applied.
- 44 This is now covered by IEC 60335-2-115.
- 45 Addition of a crushing force test on detachable power supply parts addresses the possibility of the part being stepped upon or something being placed on top of the part.
- 46 Addition of a drop test on detachable power supply parts addresses the possibility of the part being dropped.

- 47 Additional requirements for remote operation were added to IEC 60335-1:2020. These appliances are not considered to be appliances that can operate continuously without giving rise to a hazard, so the remote operation requirements were replaced to remove this alternative.
- 48 Additional requirements for remote operation were added to IEC 60335-1:2020. However, certain appliances or appliance functions covered by this Part 2 Standard are not considered suitable for remote operation because they may have accessible moving parts or are considered to give rise to a hazard if operated continuously, automatically or remotely.
- 49 Additional requirements for remote operation were added to IEC 60335-1:2020. These appliances are not considered to be appliances that can operate continuously without giving rise to a hazard, so the remote operation requirements were replaced to remove this alternative.
- 50 Additional requirements for remote operation were added to IEC 60335-1:2020. These appliances are not considered to be appliances that can operate continuously without giving rise to a hazard, so the remote operation requirements were replaced to remove this alternative.
- 51 Additional mechanical tests for detachable power supply parts now permit this construction to be used in flexible cables.
- 52 The test duration of operation for battery-operated appliances is modified to align with that of mains operated appliances.
- 53 Battery-operated appliance only for use in hairdressing salons are not considered to be within reach of children up to 14 years in age according to IEC Guide 117, so test probe 18 is not applied.
- 54 Battery-operated appliance only for use in hairdressing salons are not considered to be within reach of children up to 14 years in age according to IEC Guide 117, so test probe 18 is not applied.