

# INTERNATIONAL STANDARD

# IEC 60335-2-23

Fifth edition  
2003-01

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## Household and similar electrical appliances – Safety –

### Part 2-23: Particular requirements for appliances for skin or hair care

*Appareils électrodomestiques et analogues – Sécurité –*

*Partie 2-23:  
Règles particulières pour les appareils destinés aux soins  
de la peau ou des cheveux*

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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

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

This part of International Standard IEC 60335 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This fifth edition cancels and replaces the fourth edition published in 1996 and its amendment 1 (2000). It constitutes a technical revision.

The text of this part of 60335 is based on the following documents:

FDIS	Report on voting
61/2205/FDIS	61/2288/RVD

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

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments. It was established on the basis of the fourth edition (2001) 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: Safety requirements for electric appliances for skin or hair care.

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.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

The following differences exist in the countries indicated below.

- 3.1.9: Normal operation is different (USA).
- 6.1: Appliances fitted with a supply cord may be of class 0 or class 0I (Japan and USA).
- 6.2: The addition does not apply (USA).
- Clause 7: Additional markings and instructions are required (USA).
- 11.7: Rest periods are not allowed (USA).
- 11.101: The test is not carried out (USA).
- 19.2: Different methods are used to restrict heat dissipation (USA)
- 19.101: The temperature rise limits are different (USA).
- 21.101: The test is different (USA).
- Clause 22: Hand-held hairdryers are required to incorporate a protective device to comply with an immersion test (USA).
- 22.36: The requirement does not apply (Japan and USA).
- 22.102: The requirement does not apply (USA).
- 24.1.3: The number of cycles of operation is different (USA).
- 25.7: The use of PVC sheathed cords is not restricted by the surface temperature of the enclosure (Australia).
- 25.7: The addition does not apply (Japan).
- 25.7: PVC sheathed cords are not allowed if they could contact surfaces over 121 °C (USA).
- 25.8: The addition does not apply (Japan).
- 25.14: The test is different (USA).
- 25.101: The test is different (USA).

A bilingual version of this publication may be issued at a later date.

The contents of the corrigendum of July 2004 have been included in this copy.

## 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.

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.

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 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.

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.

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.

## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-23: Particular requirements for appliances for skin or hair care

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric appliances for the care of skin or hair of persons or animals and intended for household and similar purposes, their **rated voltage** being not more than 250 V.

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

- curling combs;
- curling irons;
- curling rollers with separate heaters;
- facial saunas;
- hairdryers;
- hand dryers;
- heaters with detachable curlers;
- permanent-wave appliances.

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

Appliances not intended for normal household use but that nevertheless may 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.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in and around the home. However, in general, it does not take into account

- the use of appliances by young children or infirm persons without supervision;
- playing with the appliance by young children.

NOTE 104 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may 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);
- UV and IR radiation appliances (IEC 60335-2-27);
- sauna heating appliances (IEC 60335-2-53);
- appliances intended for medical purposes (IEC 60601).



## 2 Normative references

This clause of Part 1 is applicable except as follows:

*Addition:*

ISO 3864, *Safety colours and safety signs*.

## 3 Definitions

This clause of Part 1 is applicable except as follows.

### 3.1.9 Replacement:

#### normal operation

operation of the appliance under the following conditions

**Helmet-type hairdryers** are operated with the axis of the hood inclined at an angle of 60° to the horizontal or the maximum angle allowed by the construction if this is less. A dull black-painted wooden sphere, 200 mm in diameter, is placed in the hood so that its centre coincides with the axis of the hood, the shortest distance between the sphere and the air-outlet grille being 50 mm.

Hairdryers having a flexible hood attachment are operated with the hood attachment placed over the wire frame of Figure 101, the frame being positioned over the wooden sphere.

NOTE 101 **Helmet-type hairdryers** that are supported by the head are operated as hairdryers having a flexible hood attachment.

**Hand-held hairdryers** are operated with unrestricted airflow directed downwards.

Permanent-wave appliances are operated in the normal position of use, the curling rollers hanging freely.

**Heaters for detachable curlers** are operated in the normal position of use together with the curlers.

Curling irons, curling combs and similar appliances are operated with their major axis horizontal.

Appliances having steam-producing or spray-producing devices are operated with the container empty or filled, whichever is more unfavourable. However, if the appliance is marked to indicate that it is to be used with the container filled, the container is filled. Water is added, when necessary, to compensate for evaporation.

Hand dryers are operated in the normal position of use with unrestricted airflow.

Facial saunas are operated in the normal position of use and filled with water. Water is added, when necessary, to maintain the steam output.

### 3.101

#### helmet-type hairdryer

hairdryer having a rigid hood that is placed over the head in normal use

NOTE The hood may be supported by a stand or have means for attaching to a support.

### 3.102

#### heater for detachable curlers

appliance for heating curling irons or curling rollers that accumulate heat

### 3.103

#### swivel connection

means for connecting the **supply cord** so that the appliance can be rotated continuously without twisting the cord

#### 4 General requirement

This clause of Part 1 is applicable.

#### 5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

##### 5.2 Addition:

NOTE 101 The additional test of 25.14 for **hand-held appliances** is carried out on a separate appliance.

#### 6 Classification

This clause of Part 1 is applicable except as follows.

##### 6.1 Replacement:

Appliances shall be of one of the following classes with respect to protection against electric shock:

- hairdryers, curling irons, curling combs, facial saunas and other steam-producing or spray-producing appliances shall be **class II** or **class III**. However, **fixed hairdryers** intended to be permanently connected to fixed wiring, **helmet-type hairdryers** for hairdressers and steam-producing or spray-producing appliances for hairdressers may be **class I**;
- other appliances shall be **class I**, **class II** or **class III**.

*Compliance is checked by inspection and by the relevant tests.*

##### 6.2 Addition:

Hand dryers shall be at least IPX1.

Curling rollers of permanent-wave appliances shall be at least IPX4.

#### 7 Marking and instructions

This clause of Part 1 is applicable except as follows.

##### 7.1 Addition:

**Portable hairdryers**, curling irons and similar appliances shall be marked with symbol 5582 of IEC 60417-1 combined with the prohibition sign of ISO 3864, except for the specified colours, or with the substance of the following:

WARNING: Do not use this appliance near water.

NOTE 101 This marking may be on a label that is permanently attached to the appliance.

##### 7.6 Addition:



[symbol 5582 of IEC 60417-1]

Suitable for use in a bath or shower