IEC 60335-2-52

Edition 4.1 2026-11

INTERNATIONAL STANDARD

CONSOLIDATED VERSION

Household and similar electrical appliances - Safety -
Part 2-52: Particular requirements for oral hygiene appliances

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ICS 13.120; 97.170

ISBN 978-2-8327-1626-7

IEC 60335-2-52:2021-11+AMD1:2026-11 CSV (en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Household and similar electrical appliances - Safety - Part 2-52: Particular requirements for oral hygiene appliances

FOREWORD

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

IEC 60335-2-52 edition 4.1 contains the fourth edition (2013-11) [documents 61/6368/FDIS and 61/6418/RVD] and its amendment 1 (2026-11) [documents 61/7656/FDIS and 61/7697/RVD].

In this Redline version, a vertical bar appears in the margin wherever the technical content has been modified by amendment 1. Additions are shown in green text, and deletions are shown in red strikethrough text. A separate Final version with all changes accepted is included in this publication.

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IEC 60335-2-52 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2002, Amendment 1: 2008 and Amendment 2:2017. This edition constitutes a technical revision.

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

a) the text has been aligned with IEC 60335-1:2020;
b) some notes have been converted to normative text (Clause 1, 11.7, 22.101);
c) clarification of requirements for battery-operated appliances (Clause 1, 11.7, B.11.1);
d) application of test probe 19 has been introduced (8.1.1, 20.2);
e) the stability test has been updated to cover hand-held parts of battery-operated appliances when placed on their charging stand (20.1);
f) a drop test is introduced for hand-held parts of an appliance (21.101);
g) additional strength tests for detachable power supply parts are introduced (21.102);
h) Table B.2 and Table B.3 updated to reflect smaller cell capacities for battery-operated appliances covered by this Part 2 standard.

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

Draft	Report on voting
61/6368/FDIS	61/6418/RVD

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

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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/standardsdev/publications.

A list of all parts in the IEC 60335 series, published under the general title *Household and similar electrical appliances – Safety*, can be found on the IEC website.

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 oral hygiene 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;

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– 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 document and its amendment 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.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may 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.

The following differences exist in the countries indicated below.

– 6.1: Class 0 appliances are allowed (Japan).
– 6.1: Appliances may have other classifications (USA).
– 7.12.1: Additional instructions are required (USA).
– 11.7: The duration and number of cycles are different (USA).
– 19.101: The test is different (USA).
– 22.36: Hand-held parts may be class 0 construction (Japan).

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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 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.

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

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NOTE 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 2 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.

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.

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1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of electric oral hygiene appliances for household and similar purposes, their **rated voltage** being not more than 250 V, including direct current (DC) supplied appliances and **battery-operated appliances**.

Examples of appliances that this standard is applicable to are

– oral irrigators;
– toothbrushes.

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

– 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.

Attention is drawn to the fact that

– for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements 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.

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This standard does not apply to appliances for medical purposes (IEC 60601).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

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

ISO 20127:2025, *Dentistry - Physical properties of powered toothbrushes*

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

3.1 Definitions relating to physical characteristics

3.1.9 *Addition:*
operation of the appliance under the following conditions:

Oral irrigators are operated with the reservoir filled with water having a temperature of approximately 45 °C, to the level specified in the instructions. In the absence of such instructions, the reservoir is filled to the maximum level.

Other appliances are operated without load.

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3.6 Definitions relating to parts of an appliance

3.6.101
brush head
working end of a toothbrush to which **filaments** are attached

[SOURCE: ISO 20127:2025, 3.1, modified – "an electrically powered" has been deleted.]

3.6.102
filament
single strand within the **brush head**

[SOURCE: ISO 20127:2025, 3.2]

3.6.103
tuft
group of **filaments**, in intimate contact with each other at the plane of securing material, attached to the **brush head**

[SOURCE: ISO 20127:2025, 3.5, modified – "gathered together and" has been replaced by "in intimate contact with each other at the plane of securing material,".]

4 General requirement

This clause of Part 1 is applicable.

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5 General conditions for the tests

This clause of Part 1 is applicable.

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6 Classification

This clause of Part 1 is applicable except as follows.

6.1 *Modification:*

Appliances shall be **class II** or **class III**.

6.2 *Addition:*

Appliances shall be at least IPX7.

This classification does not apply to:

– parts that are intended to be fixed and **detachable power supply parts** with pins for insertion into socket outlets that are at least IPX4; or
– **class III appliances** or parts of **class III construction**, including hand-held parts, that are at least IPX4.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

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7.12 *Modification*:

In the fourth paragraph, delete "(including children)*".*

Addition:

The instructions for electric toothbrushes that are intended to be used by all children shall contain the substance of the following:

> This toothbrush is suitable to be used for children.

If electric toothbrushes are intended for children of specific age range, the instructions shall state the intended age range for the toothbrush, and a warning shall be provided against the use of the toothbrush by children under that age range. The instructions for electric toothbrushes intended to be used by children and shaped or decorated like a toy shall include the substance of the following:

> This is not a toy. This is an electrical appliance and must be regularly inspected and maintained by an adult to ensure that it is in correct working order.

NOTE 101 Examples of such enclosures are those representing animals, characters, people or scale models.

7.12.1 *Addition:*

The installation instructions shall state that parts that have to be fixed must be fixed so that they cannot fall into water, unless they are of IPX7 construction.

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8 Protection against access to live parts

This clause of Part 1 is applicable except as follows.

8.1.1 *Addition:*

For toothbrushes, in addition to the use of test probe 18, test probe 19 of IEC 61032 is also applied as specified for test probe 18.

9 Starting of motor-operated appliances

This clause of Part 1 is not applicable.

10 Power input and current

This clause of Part 1 is applicable.

11 Heating

This clause of Part 1 is applicable except as follows.

11.3 *Addition:*

Where the external ***accessible surfaces*** *are suitably flat and access permits, then the test probe of Figure 101 is used to measure the temperature rises of external* ***accessible surfaces*** *specified in Table 101. The probe is applied with a force of 4 N ± 1 N to the surface in such a*

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way that the best possible contact between the probe and the surface is ensured. The measurement is performed after a contact period of 30 s.

The probe may be held in place using a laboratory stand clamp or similar device. Any measuring instrument giving the same results as the probe may be used.

11.7 *Modification:*

Appliances are operated for five cycles, each cycle comprising an operating period of 3 min and a rest period of 1 min. During the rest period, the reservoir of oral irrigators is refilled. If the reservoir empties during the operating period, it is refilled and the test is continued.

*For appliances incorporating **integral batteries** or **separable batteries** not disconnected from the appliance for charging purposes:*

– *the **battery** that has been **fully discharged** is charged for 1 h, while the appliance is operated as specified, if allowed by the construction of the appliance;*
– *the **battery** that has been **fully discharged** is charged, for a duration of 24 h or until it is **fully charged** whichever is shorter, without the **battery-operated appliance** performing its intended function.*

11.8 *Modification:*

During the test, the temperature rises are monitored continuously and shall not exceed the values shown in Table 3 and Table 101.

*The temperature rise of **accessible surfaces** of hand-held parts of appliances shall not exceed the limits specified for handles which are continuously held in normal use.*

*The temperature rise of **accessible surfaces** of hand-held parts of toothbrushes intended to be used by children shall not exceed 23 K.*

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Addition:

Table 101 – Maximum temperature rises of external accessible surfaces under normal operating conditions

Surface	***Temperature rise of external accessible surfaces, other than surfaces of hand-held parts*** *K*
Bare metal	*38*
Coated metal [a]	*42*
Glass and ceramic	*51*
Plastic and plastic coating > 0,4 mm [b, c]	*58*
NOTE The temperature rise limits of knobs, grips, keyboards, keypads and similar parts are specified in Table 3.	
[a] *Metal is considered coated when a coating having a minimum thickness of 90 µm made of enamel or non-substantially plastic coating is used.*	
[b] *The temperature rise limit of plastic also applies for plastic material having a metal finish of thickness less than 0,1 mm.*	
[c] *When the thickness of the plastic coating does not exceed 0,4 mm, the temperature rise limits of the coated metal or of glass and ceramic material apply.*	

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