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

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

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60335-2-53:2011+AMD1:2017+AMD2:2021 CSV. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60335-2-53 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2011, Amendment 1:2017 and Amendment 2:2021. 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, 7.1, 7.14, 19.101, 19.104, 22.101, 22.104);
c) clarification and addition of requirements for sauna heaters with a thermal storage function (Clause 1, 3.1.9, 3.5.101, 3.8.103, 5.3, 7.1, 7.12, 10.1, 10.2, 13.1, 19.1, 19.105);
d) addition of test probe 19 for accessibility of live parts and moving parts not more than 850 mm above the floor (8.1.1, 8.1.3, 20.2);
e) addition of surface temperatures for external accessible surfaces outside the sauna room or infrared cabin (11.3, 11.8);
f) clarifications related to the use of the terms "control" and "protective device" (3.5.102, 3.6.102, 5.9, 6.2. 7.7, 7.12.1, 22.105, 24.102, Figure 101).

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

Draft	Report on voting
61/7626/FDIS	61/7661/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/standardsdev/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) with amendment 1 (2025) 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 sauna heating appliances and infrared cabins.

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 following differences exist in the countries indicated below.

– 6.1: Class 0I appliances are allowed (Japan);

– 19.101: Sauna heating appliances provided with a programmable timer are considered to be appliances that are used by remote operation (Finland).

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 **sauna heating appliances** within the scope of this part 2 include a humidifier unit, then IEC 60335-2-98 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.~~

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 **sauna heating appliances** and **infrared emitting units** having a **rated power input** not exceeding 20 kW, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

The appliances covered by this standard are intended for use in the home and in public saunas located in blocks of flats, hotels and similar locations.

~~NOTE 101 **Sauna heating appliances** may be of the thermal storage type.~~

This standard also applies to **prefabricated saunas**, **prefabricated infrared cabins** and **sauna heaters** provided with a thermal storage function.

This standard also deals with the safety of electric **sauna heating appliances** provided with a humidifier unit~~, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances~~. The room air is humidified by evaporating or atomising water.

NOTE ~~102~~ 101 A humidifier ~~may~~ can be part of a **sauna heating appliance** or ~~may~~ can be incorporated in the **sauna heater**. The **sauna heating appliance** or **sauna heater** ~~may~~ can be operated with or without the humidifier.

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.

~~NOTE 103~~ Attention is drawn to the fact that

– 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 104~~ This standard does not apply to

– 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);
– appliances intended to cause perspiration to only a part of the human body;
– sweating baths where the head of the user remains outside the heated space;
– tents and other collapsible sauna baths;
– room heaters (IEC 60335-2-30);
– humidifiers intended for use with heating, ventilation, or air-conditioning systems (IEC 60335-2-88);
– humidifiers (IEC 60335-2-98);
– appliances intended for medical purposes (IEC 60601).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60335-1:2020, *Household and similar electrical appliances - Safety - Part 1: General requirements*
IEC 60335-1:2020/AMD1:2025

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

ISO 3864-1, *Graphical symbols - Safety colours and safety signs - Part 1: Design principles for safety signs ~~in workplaces~~ and ~~public areas~~ safety markings*

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

3.1 Definitions relating to physical characteristics

3.1.9 ~~*Replacement*~~ *Modification:*

~~**normal operation**~~

Replace the first paragraph with the following:

operation of the appliance under the following conditions:

Sauna heating appliances, **sauna heaters**, **infrared emitters** and **infrared emitting units** are installed in the sauna room specified in normative Annex AA and in accordance with the instructions. The volume of the sauna room is the minimum value specified in the instructions.

The rock container is filled in accordance with the instructions. If the capacity of the rock container is adjustable, the container is filled with the most unfavourable quantity of rocks. If the rock container has a lid, the lid is positioned in accordance with the instructions.

Prefabricated saunas and **prefabricated infrared cabins** are installed in accordance with the instructions.

Sauna heaters provided with a thermal storage function are first operated with the lid or similar means closed for the **thermal storage period**. The appliance is then operated with the lid or similar means opened.

3.5 Definitions relating to types of appliances

3.5.101
sauna heater
appliance incorporating heating elements having a container filled with appropriate rocks

Note 1 to entry: A **sauna heater** of the thermal storage type is provided with a lid or similar means for limiting thermal energy transfer to a sauna room and is supplied from the mains during the **thermal storage period**.

Note 2 to entry: A **sauna heater** can also be provided with a humidifier.

3.5.102
sauna heating appliance
appliance comprising a **sauna heater**, controls, ~~**protective devices**~~ user interface and **control board**