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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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61/3929/CDV

**COMMITTEE DRAFT FOR VOTE (CDV)
PROJET DE COMITÉ POUR VOTE (CDV)**

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Proposed horizontal standard Norme horizontale suggérée <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the TC/SC secretary Les autres CE/SC sont requis d'indiquer leur intérêt, si nécessaire, dans ce CDV à l'intention du secrétaire du CE/SC					
Functions concerned Fonctions concernées <input checked="" type="checkbox"/> Safety Sécurité <input type="checkbox"/> EMC CEM <input type="checkbox"/> Environment Environnement <input type="checkbox"/> Quality assurance Assurance qualité					

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Titre : La version française sera diffusée ultérieurement.

Title : IEC 60335-2-53 Ed 4.0: Household and similar electrical appliances - Safety - Part 2-53: Particular requirements for sauna heating appliances and infrared cabins

Note d'introduction

Ce document est diffusé conformément aux décisions prises au cours des réunions TC 61 de Jeju Island – voir 61/3211/RM

Tel Aviv – voir 61/xxxx/RM

Historique:

61/3043/DC et 61/3110A/INF
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61/3843/DC et 61/3889A/INF
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61/3845/DC et 61/3891A/INF

Introductory note

This document is circulated according to the decisions taken at the meetings of TC 61 in Jeju Island – see 61/3211/RM

Tel Aviv – see 61/3927/RM

History:

61/3043/DC and 61/3110A/INF
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61/3845/DC and 61/3891A/INF

ATTENTION VOTE PARALLÈLE CEI – CENELEC	ATTENTION IEC – CENELEC PARALLEL VOTING
L'attention des Comités nationaux de la CEI, membres du CENELEC, est attirée sur le fait que ce projet de comité pour vote (CDV) de Norme internationale est soumis au vote parallèle. Les membres du CENELEC sont invités à voter via le système de vote en ligne du CENELEC.	The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) for an International Standard is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.

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CONTENTS

FOREWORD	3
INTRODUCTION	6
1 Scope	7
2 Normative references	7
3 Definitions	3
4 General requirement	3
5 General conditions for the tests	4
6 Classification	4
7 Marking and instructions	4
8 Protection against access to live parts	7
9 Starting of motor-operated appliances	7
10 Power input and current	7
11 Heating	7
12 Void	8
13 Leakage current and electric strength at operating temperature	8
14 Transient overvoltages	8
15 Moisture resistance	9
16 Leakage current and electric strength	9
17 Overload protection of transformers and associated circuits	9
18 Endurance	9
19 Abnormal operation	9
20 Stability and mechanical hazards	11
21 Mechanical strength	11
22 Construction	12
23 Internal wiring	14
24 Components	14
25 Supply connection and external flexible cords	14
26 Terminals for external conductors	15
27 Provision for earthing	15
28 Screws and connections	15
29 Clearances, creepage distances and solid insulation	15
30 Resistance to heat and fire	15
31 Resistance to rusting	15
32 Radiation, toxicity and similar hazards	15
Annexes	17
Annex AA (normative) Sauna room for testing sauna heating appliances	17
Annex BB (normative) Estimation of the infrared radiation	19
Bibliography	21
Figure 101 – Temperature/relative humidity characteristic during normal operation	16
Figure 102 – Temperature/relative humidity characteristic during abnormal operation	16
Figure AA.1 – Sauna room	18
Table 101 – Volume of sauna room	9

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –****Part 2-53: Particular requirements for sauna heating appliances and
infrared cabins**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60335-2-53 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This fourth edition cancels and replaces the third edition published in 2002 including its Amendment 1 (2007). It constitutes a technical revision.

The principal changes in this edition as compared with the fifth edition of IEC 60335-2-53 are as follows (minor changes are not listed):

- the scope is changed to cover infrared cabins
- additional requirements for recessed sauna heaters are added

The text of this standard is based on the following documents:

FDIS	Report on voting
61/xxxx/FDIS	61/xxxx/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 publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 fifth edition (2010) 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 sauna heating 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.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result date¹⁾ indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

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 0I appliances are allowed (Japan).
- 11.2: The temperature rises in front of the sauna heater are not measured (USA).
- 11.8: The temperature rise limits are different (USA).
- 13.2: Leakage current tests are carried out on sauna heaters having a supply cord (USA).

¹⁾ National committees are requested to note that for this publication the maintenance result date is 2013.

- 16.2: Leakage current tests are carried out on sauna heaters having a supply cord (USA).
- 19.1: The volume of the sauna room is different (USA).
- 19.5: The test is also carried out on appliances intended to be permanently connected to fixed wiring (Norway).
- 19.102: The test is not applicable (USA).
- 22.101: The mass of rocks is different (USA).
- 22.103: The requirement is not applicable (USA).
- 24.102: The 125 °C limit is not applicable (USA).
- 25.7: The supply cords are different (USA).
- Annex AA: The sauna room is different (USA).

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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.

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.

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.

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 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 Horizontal and generic standards 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.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-53: Particular requirements for sauna heating appliances and infrared cabins

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard 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 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 A humidifier may be part of a **sauna heating appliance** or may be incorporated in the **sauna heater**. The **sauna heating appliance** or **sauna heater** may 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 knowledgeprevents 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 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.

39 **Addition:**

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

42 **3 Definitions**

43 This clause of Part 1 is applicable except as follows.

44 **3.1.9 Replacement:**

45 **normal operation**
46 operation of the appliance under the following conditions

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

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

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

55 **3.101**
56 **sauna heater**
57 appliance incorporating heating elements having a container filled with appropriate rocks

58 **3.102**
59 **sauna heating appliance**
60 appliance comprising a **sauna heater**, controls, **protective devices** and control board

61 **3.103**
62 **prefabricated sauna**
63 assembly comprising a sauna room and a **sauna heating appliance**

64 **3.104**
65 **infrared emitter**
66 assembly that emits infrared radiation

67 **3.105**
68 **infrared emitting unit**
69 appliance comprising at least one **infrared emitter**, controls, **protective devices** and control
70 board

71 **3.106**
72 **prefabricated infrared cabin**
73 assembly comprising a cabin and at least one **infrared emitting unit**

74 **3.107**
75 **fireguard**
76 part of the enclosure of an **infrared emitter** through which the **infrared emitter** is normally
77 visible and which is intended to guard against direct access to the **infrared emitter**

78 **4 General requirement**

79 This clause of Part 1 is applicable.

80 5 General conditions for the tests

81 This clause of Part 1 is applicable except as follows.

82 5.2 Addition:

83 *If the appliance comprises more than one **sauna heater** or more than one **infrared emitter**,*
84 *these are tested together.*

85 5.3 Addition:

86 *For appliances where both sauna and humidifying operation is possible, the tests for sauna*
87 *operation are made first, followed immediately by the tests for humidifying. The thermostats*
88 *and humidity controls, if any, are initially set to their maximum setting.*

89 **5.101** *If a ventilating fan operates independently of the heating element, the tests are carried*
90 *out with or without the fan in operation, whichever is more unfavourable.*

91 **5.102** *When a combination of **sauna-heating appliances** and **infrared emitting units** is to be*
92 *tested, the tests are carried out under the most unfavourable conditions.*

93 6 Classification

94 This clause of Part 1 is applicable except as follows.

95 6.1 Modification:

96 Appliances shall be **class I**, **class II** or **class III**.

97 6.2 Addition:

98 Appliances, controls, **protective devices** and control boards intended to be mounted inside a
99 sauna room shall be at least IPX4.

100 Electrical components of **prefabricated saunas** shall be at least IPX4.

101 **Infrared emitters**, controls and **protective devices** intended to be mounted inside a cabin
102 shall be at least IPX2.

103 **Infrared emitters**, controls and **protective devices** intended to be mounted inside a cabin in
104 combination with a **sauna-heating appliance** shall be at least IPX4.

105 7 Marking and instructions

106 This clause of Part 1 is applicable except as follows.

107 7.1 Addition:

108 **Sauna heaters** and **infrared emitters** shall be marked with symbol ISO 7000-0790 or with the
109 substance of the following:

110 **Read operators manual**

111 They shall also be marked with

112 – the minimum distance between the top of the heater and the ceiling of the sauna room;