



**NSAI**  
Standards

Irish Standard  
I.S. EN 60335-2-53:2011

Household and similar electrical  
appliances - Safety -- Part 2-53:  
Particular requirements for sauna  
heating appliances and infrared cabins  
(IEC 60335-2-53:2011 (EQV))

## I.S. EN 60335-2-53:2011

*Incorporating amendments/corrigenda issued since publication:*

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

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<b>NSAI</b> 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie  W NSAI.ie	<b>Sales:</b> T +353 1 857 6730 F +353 1 857 6729 W standards.ie
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EUROPEAN STANDARD

**EN 60335-2-53**

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2011

ICS 97.100.10

Supersedes EN 60335-2-53:2003 + A1:2007

English version

**Household and similar electrical appliances -  
Safety -  
Part 2-53: Particular requirements for sauna heating appliances and  
infrared cabins  
(IEC 60335-2-53:2011)**

Appareils électrodomestiques et  
analogues -  
Sécurité -  
Partie 2-53: Règles particulières pour les  
appareils de chauffage de saunas et les  
cabines infrarouges  
(CEI 60335-2-53:2011)

Sicherheit elektrischer Geräte für den  
Hausgebrauch und ähnliche Zwecke -  
Teil 2-53: Besondere Anforderungen für  
Saunaheizgeräte und Infrarot-Kabinen  
(IEC 60335-2-53:2011)

This European Standard was approved by CENELEC on 2011-05-25. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## I.S. EN 60335-2-53:2011

EN 60335-2-53:2011

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### Foreword

The text of document 61/4135/FDIS, future edition 4 of IEC 60335-2-53, prepared by IEC/TC 61 "Safety of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60335-2-53:2011.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2012-06-16
- date on which national standards  
conflicting with the EN have to be withdrawn (dow) 2014-05-25

This European Standard supersedes EN 60335-2-53:2003 + A1:2007.

The principal changes in EN 60335-2-53:2011 as compared with EN 60335-2-53:2003 are as follows (minor changes are not listed):

- the scope is changed to cover infrared cabins;
- additional requirements for recessed sauna heaters are added;
- requirements of electronic interlocks are added (22.108).

This Part 2 has to be used in conjunction with EN 60335-1:2012, Household and similar electrical appliances – Safety – Part 1: General requirements.

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

This Part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Safety requirements for electric 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 of 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.;
- subclauses, notes and annexes that are additional to those in the IEC standard are prefixed with the letter Z.

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.

There are no special national conditions causing a deviation from this European Standard, other than those listed in Annex ZA to EN 60335-1.

There are no national deviations from this European Standard, other than those listed in Annex ZB to EN 60335-1.

p NOTE In this document, p is used in the margin to indicate instructions for preparing the printed version.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

## **Introduction**

p Add:

An investigation by CENELEC TC 61 has shown that all risks from products within the scope of this standard are fully covered by the Low Voltage Directive, 2006/95/EC. For products having mechanical moving parts, a risk assessment in accordance with the Machinery Directive, 2006/42/EC, has shown that the risks are mainly of electrical origin and consequently this directive is not applicable. However, the relevant essential safety requirements of the Machinery Directive are covered by this standard together with the principal objectives of the Low Voltage Directive.

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## **Endorsement notice**

The text of the International Standard IEC 60335-2-53:2011 was approved by CENELEC as a European Standard without any modification.

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## **Bibliography**

p Add the following notes to the standards mentioned:

IEC 60335-2-30	NOTE	Harmonized as EN 60335-2-30.
IEC 60335-2-88	NOTE	Harmonized as EN 60335-2-88.
IEC 60335-2-98	NOTE	Harmonized as EN 60335-2-98.

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p Add:

**Annex ZC**  
(normative)

**Normative references to international publications  
with their corresponding European publications**

*Addition:*

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 3864-1	-	Graphical symbols - Safety colours and safety signs - Part 1: Design principles for safety signs and safety markings	-	-

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### **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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- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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 and its Amendment 1 (2007). It constitutes a technical revision.

The principal changes in this edition as compared with the third 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;
- requirements of electronic interlocks are added (22.108).

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

FDIS	Report on voting
61/4135/FDIS	61/4157/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 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.

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 publication will remain unchanged until the stability date 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).
- 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).

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## 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.

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.

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).

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