IEC 60335-2-60

Edition 4.0 2017-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Household and similar electrical appliances – Safety – Part 2-60: Particular requirements for whirlpool baths and whirlpool spas

Appareils électrodomestiques et analogues – Sécurité – Partie 2-60: Exigences particulières pour les baignoires et les spas à système de brassage d'eau

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Appareils électrodomestiques et analogues – Sécurité – Partie 2-60: Exigences particulières pour les baignoires et les spas à système de brassage d'eau

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-60: Particular requirements for whirlpool baths and whirlpool spas

FOREWORD

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International Standard IEC 60335-2-60 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This bilingual version (2019-11) corresponds to the monolingual English version, published in 2017-12.

This fourth edition cancels and replaces the third edition published in 2002 including its Amendment 1 (2004) and its Amendment 2 (2008). This edition constitutes a technical revision.

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

– requirements for transportable whirlpool spas have been added (3.103, 5.101, 6.1, 7.12.1, 22.106, 25.1, 25.5, 25.7);

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– some notes have been deleted or converted to normative text (22.101, 22.102, 22.103, 22.105);
– the text has been aligned with Ed 5.2 of Part 1.

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

FDIS	Report on voting
61/5552/FDIS	61/5588/RVD

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

The French version of this standard has not been voted upon.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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.

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 whirlpool baths and whirlpool spas.

NOTE 2 When “Part 1” is mentioned in this standard, it refers to IEC 60335-1.

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 3 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 4 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.

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The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result 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 5 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 I portable appliances are allowed (USA).
– 7.12.1: The statement concerning earthed appliances is not required (USA).
– 7.12.1: The statement concerning appliances supplied through a RCD is not required for cord connected whirlpool spas (Canada, USA)
– 22.35: Current limits apply instead of voltage limits (USA).
– 22.101: The test is different (USA).
– 22.103: The test is carried out ten times (USA).
– 25.1: Class I appliances may have a supply cord fitted with a plug (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.

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.

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

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 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.

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HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-60: Particular requirements for whirlpool baths and whirlpool spas

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric **whirlpool baths** for indoor use and **whirlpool spas**, for household and similar purposes, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

This standard also applies to appliances for circulating air or water in conventional baths.

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 hotels, fitness centres and similar places, are within the scope of this standard.

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 101 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 water supply authorities, the national authorities responsible for the protection of labour and similar authorities.

NOTE 102 This standard does not apply to

– equipment for water circulation in swimming and motion exercise pools;
– cleaning appliances for swimming pools;
– appliances intended for medical 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).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60364-7-701, *Low-voltage electrical installations – Requirements for special installations or locations – Locations containing a bath or shower*

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3 Terms and 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:

Whirlpool baths for indoor use and **whirlpool spas** are filled with water to the maximum level allowed by the construction.

For separate appliances intended to be used with a conventional bath, the bath is filled with water to a depth of approximately 200 mm or to the maximum level specified in the instructions, whichever is more unfavourable.

3.5.1
portable appliance

Addition:

Note 1 to entry: **Transportable whirlpool spas** are not considered to be **portable appliances**.

3.5.101
transportable whirlpool spa
whirlpool spa that is intended be set up and disassembled from time to time for the purpose of moving it to different areas for use

3.5.102
whirlpool bath
appliance used by persons to immerse themselves in water and which incorporates provisions for blowing air or water circulation and which may have provisions for water heating, the appliance intended to be drained after use

3.5.103
whirlpool spa
appliance used by one or more persons at the same time to immerse themselves in water and which incorporates provisions for blowing air or water circulation and provisions for water heating, the appliance not intended to be drained after use

3.6.4
live part

Modification:

Note 1 to entry: Parts are considered to be **live parts** even if they comply with 8.1.4.

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.

5.7 *Addition:*

If the tests are influenced by the temperature of the water, it is maintained at 40 °C or at the maximum value allowed by the control, whichever is greater.

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5.101 ***Transportable whirlpool spas*** *are tested as* ***portable appliances****.*

6 Classification

This clause of Part 1 is applicable except as follows.

6.1 *Modification:*

Portable appliances shall be **class II** or **class III**. **Stationary appliances** shall be **class I**, **class II** or **class III**.

Transportable whirlpool spas having metal parts in contact with water shall be **class I** or **class III**.

6.2 *Addition:*

Whirlpool baths and **whirlpool spas** shall be at least IPX5. Other appliances shall be at least IPX4. Parts of appliances intended for mounting within the dwelling but outside the zones specified in IEC 60364-7-701 shall be at least IPX0.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.12 *Addition:*

The instructions shall provide details concerning cleaning and other maintenance.

The instructions for **portable appliances** shall state that no part of the appliance is to be located above the bath during use.

The instructions for **whirlpool spas** shall provide information concerning

– maintenance of water purity, especially pH values and chlorine concentrations;
– cleaning and disinfection;
– use and installation of a cover;
– disposal of water;
– precautions to avoid damage due to water freezing;
– precautions to avoid damage when the appliance is left empty for an extended period.

7.12.1 *Addition:*

The installation instructions shall state the substance of the following:

– parts containing live parts, except parts supplied with safety extra-low voltage not exceeding 12 V, must be inaccessible to a person in the bath;
– earthed appliances must be permanently connected to fixed wiring except for **transportable whirlpool spas** with earthing, which must only be plugged directly into an earthed socket-outlet of the fixed wiring;
– parts incorporating electrical components, except remote control devices, must be located or fixed so that they cannot fall into the bath;
– the appliance must be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA.

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The installation instructions shall give details on how to follow the wiring rules, for example specifying that parts are installed in the correct zone and that equipotential bonding is carried out.

If the appliance is intended to be fixed by screws or other permanent fixing devices, the installation instructions shall give details on how to fix the appliance.

NOTE 101 This instruction is not necessary if the method of fixing is obvious.

The installation instructions for **whirlpool spas** shall state that

– the floor has to be capable of supporting the expected load;
– an adequate drainage system has to be provided to deal with overflow water.

8 Protection against access to live parts

This clause of Part 1 is applicable except as follows.

8.1.4 *Modification:*

Any energized part is considered to be a **live part**.

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.

11.8 *Addition:*

If the appliance incorporates a heating element, the water temperature at the inlet of the ***whirlpool bath*** *or* ***whirlpool spa*** *shall not exceed 50 °C.*

12 Void

13 Leakage current and electric strength at operating temperature

This clause of Part 1 is applicable.

14 Transient overvoltages

This clause of Part 1 is applicable.

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