

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Household and similar electrical appliances – Safety –
Part 2-15: Particular requirements for appliances for heating liquids**

**Appareils électrodomestiques et analogues – Sécurité –
Partie 2-15: Exigences particulières pour les appareils de chauffage des liquides**

[IEC 60335-2-15:2024](https://standards.iteh.ai/catalog/standards/iec/9c0c4a5e-32b5-4790-a2ed-04f65b16bc09/iec-60335-2-15-2024)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-15: Particular requirements for appliances for heating liquids

FOREWORD

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IEC 60335-2-15 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This seventh edition cancels and replaces the sixth edition published in 2012, Amendment 1:2016 and Amendment 2:2018. 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, 8.1.2, 11.7.104, 15.2, 15.101);
- c) introduction of surface temperature limits (3.6.102, 7.1, 7.6, 7.12, 7.14, 7.15, 11.1, 11.3, 11.101);

- d) addition of instructions for appliances with liquid containers made from polycarbonate material and kettles (7.12);
- e) introduction of test probe 18 and clarification of the application force for test probes in 20.103;
- f) improvement of spillage test for coffee-makers with a removable coffee pot and addition of test for appliances with a surface that will support a cup of vessel (15.2);
- g) specified that kettles are to be tested with NaCl instead of the spillage solution (15.2);
- h) addition of spillage tests for built-in appliances (15.104, 15.105);
- i) addition of compliance criteria for impact testing on glass containers of kettles, coffee-makers and tea makers (21.1);
- j) addition of requirements for the strength of kettle handles (21.101, 21.102);
- k) clarification of requirements for drain holes (22.6);
- l) added requirements for remote operation (22.49, 22.51);
- m) clarification of test method evaluation of appliance couplers for cordless appliances (22.103);
- n) clarification of requirements for pressure cookers (22.108, 22.108.1, 22.108.2, 22.109);
- o) revision of requirements for the maximum rotation angle of a frothing or hot water nozzle (22.115, R.2.2.5, R.2.2.9);
- p) addition of requirements for programmable electronic circuits that limit the number of heating elements and motors able to operate at the same time (22.116, R.2.2.5, R.2.2.9).

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

Draft	Report on voting
61/7289/FDIS	61/7332/RVD

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

<https://standards.iteh.ai/catalog/standards/iec/9c0c4a5e-32b5-4790-a2ed-04f65b16bc09/iec-60335-2-15-2024>

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/publications.

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 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 appliances for heating liquids.

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.

- 1: In AU and NZ, there are additional construction and abnormal requirements for all-in-one appliances that do not have pressure cooker functions
- 19.101: The test is not applicable (Japan).
- 25.8: A supply cord having a cross-sectional area of 0,75 mm² is not allowed for appliances having a rated current exceeding 6 A (Japan).
- 25.8: Longer supply cords are allowed (Japan).

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.

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.

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 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.

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 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.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-15: Particular requirements for appliances for heating liquids

1 Scope

This clause of Part 1 is replaced by the following.

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

Some appliances in this standard are used for heating food.

Examples of appliances that are within the scope of this standard are:

- coffee-makers;
- cooking pans;
- egg boilers;
- **feeding-bottle heaters**;
- kettles and other appliances for boiling water, having a **rated capacity** not exceeding 10 l;
- milk heaters;
- pressure cookers having a **rated cooking pressure** not exceeding 140 kPa and a **rated capacity** not exceeding 10 l;
- **rice cookers**;
- slow cookers;
- **steam cookers**;
- **soy milk makers**;
- tea makers;
- wash boilers;
- yoghurt makers.

Appliances can have more than one function.

Appliances intended for normal household and similar use and that can also be used by laypersons in shops, in light industry and on farms, are within the scope of this standard. Examples of such appliances are glue pots with a water jacket, livestock feed boilers and sterilizers.

If the appliance is intended to be used professionally to process food for commercial consumption, the appliance is not considered to be for household and similar use only.

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.

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, the national water supply authorities and similar authorities;
 - additional national requirements for pressure vessels are specified for pressure cookers.

This standard does not apply to

- frying pans and deep fat fryers (IEC 60335-2-13);
- storage water heaters (IEC 60335-2-21);
- instantaneous water heaters (IEC 60335-2-35);
- surface-cleaning appliances employing liquids or steam (IEC 60335-2-54);
- portable immersion heaters (IEC 60335-2-74);
- commercial dispensing appliances and vending machines (IEC 60335-2-75);
- appliances for medical purposes (IEC 60601);
- appliances intended exclusively for industrial 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);
- appliances for high-frequency heating;
- pressure sterilizers;
- humidifiers for household and similar use (IEC 60335-2-98).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

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

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

3.1 Definitions relating to physical characteristics

3.1.9 *Modification:* **normal operation**

Replace the first paragraph with the following:

operation of the appliance under the conditions specified in 3.1.9.101 to 3.1.9.107

3.1.9.101 Kettles, thermal pots, urns and other appliances for boiling water, cooking pans, glue pots, milk heaters, slow cookers, sterilizers, wash boilers and yoghurt makers are operated with their container filled with the **rated capacity** of water, any lid being closed. The quantity of water in slow cookers is maintained above 50 % of their **rated capacity**.

Coffee-makers are operated in accordance with their instructions with the water container filled to its **rated capacity** and bean container, if any, filled with coffee beans. The warming plate and all other energy consuming functions, if any, are switched on.

Appliances with a heated surface intended to keep the liquid warm are operated with or without the container, whichever is the more unfavourable.

3.1.9.102 Egg boilers and **steam cookers** are operated with their containers filled with the maximum quantity of water specified in the instructions.

3.1.9.103 Feeding-bottle heaters are operated with a bottle of heat-resistant glass, round or hexagonal in shape, having a mass between 190 g and 200 g and a capacity of approximately 225 ml, unless a particular bottle is specified, in which case that bottle is used. The bottle is filled to approximately its **rated capacity** of water or 200 ml, whichever is less, and is placed in the **feeding-bottle heater**. The heater is filled with water to the level specified in the instructions or, in the absence of instructions, to the maximum level.

3.1.9.104 Livestock feed boilers are operated with the lid closed; the container being filled with half its **rated capacity** of water.

3.1.9.105 Pressure cookers are operated in accordance with the instructions but with the container filled with water to a depth of 25 mm.

3.1.9.106 Rice cookers are operated with the rice container filled with water to the level of maximum **rated capacity**. Water is added to maintain the level during boiling as necessary.

When operated in the keep-warm mode, the **rice cooker** is operated with the rice container empty.

3.1.9.107 Soy milk makers are operated with the container filled with soy beans in accordance with the instructions and water to the **rated capacity**.

3.1.101

rated capacity

capacity assigned to the appliance by the manufacturer

3.1.102

rated cooking pressure

pressure assigned to the appliance by the manufacturer

3.5 Definitions relating to types of appliances

3.5.101

espresso coffee-maker

coffee-maker in which water is heated and forced through the ground coffee by steam pressure or by means of a pump

Note 1 to entry: **Espresso coffee-makers** can have an outlet for supplying steam or hot water.

3.5.102

feeding-bottle heater

appliance for heating prepared baby food in a feeding-bottle, heat being transferred by means of water

Note 1 to entry: **Feeding-bottle heaters** can have a control to set the temperature or time to a predetermined level.

3.5.103

cordless kettle

kettle incorporating a heating element and which is connected to the supply only when placed on its associated stand

3.5.104

steam cooker

appliance in which food is heated by steam generated at atmospheric pressure

3.5.105

rice cooker

appliance for cooking rice that is placed in a **detachable container**, the container being placed within the appliance when cooking

Note 1 to entry: **Rice cookers** can have a keep warm function.

Note 2 to entry: **Rice cookers** can cook food other than rice.

3.5.106

induction rice cooker

rice cooker that heats the rice container by means of eddy currents

Note 1 to entry: The eddy currents are induced in the rice container or lid or rice container and lid by the electromagnetic field of a coil.

3.5.107

cordless appliance

appliance incorporating a heating element and which is connected to the supply only when placed on its associated stand

3.5.108

dynamic pressure cooker

pressure cooker which reduces the pressure by a dynamic action of an elastic part

3.5.109

soy milk maker

appliance with heating, pulverising and agitating functions that are intended to make soy milk

3.6 Definitions relating to parts of an appliance

3.6.101

decorative door

part of an appliance having the same function as a cabinet door

3.6.102

functional surface

surface that is intentionally heated by an internal heat source and has to be hot to carry out the function for which the appliance is intended

Note 1 to entry: An example is the heated sheath of a tubular heating element.

3.7 Definitions relating to safety components

3.7.101

pressure regulator

control that maintains the pressure at a particular value during normal use

3.7.102

pressure-relief device

control that limits the pressure under abnormal operating conditions

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.

5.2 Addition:

[IEC 60335-2-15:2024](https://standards.iteh.ai/catalog/standards/iec/9c0c4a5e-32b5-4790-a2ed-04f65b16bc09/iec-60335-2-15-2024)

If the test of 15.101 has to be carried out, three additional samples are required.

The tests of 21.101 and 21.102 may be carried out on separate appliances.

5.3 Addition:

The test of 19.101 is carried out after the other tests.

The tests of 22.102, 22.110 and 22.111 are carried out during the test of Clause 11.

5.101 Induction rice cookers are tested as motor-operated appliances.

6 Classification

This clause of Part 1 is applicable except as follows.

6.2 Addition:

Wash boilers and livestock feed boilers shall be at least IPX3.