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

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/16

Rozpracovanie prekladom.

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EUROPÄISCHE NORM

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Supersedes EN 60335-2-15:2002

English Version

**Household and similar electrical appliances - Safety - Part 2-15:  
Particular requirements for appliances for heating liquids  
(IEC 60335-2-15:2012 , modified)**

Appareils électrodomestiques et analogues - Sécurité -  
Partie 2-15: Exigences particulières pour les appareils de  
chauffage des liquides  
(IEC 60335-2-15:2012 , modifiée)

Sicherheit elektrischer Geräte für den Hausgebrauch und  
ähnliche Zwecke - Teil 2-15: Besondere Anforderungen für  
Geräte zur Flüssigkeitserhitzung  
(IEC 60335-2-15:2012 , modifiziert)

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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## European foreword

This document (EN 60335-2-15:2016) consists of the text of IEC 60335-2-15:2012 prepared by IEC/TC 61 "Safety of household and similar electrical appliances", together with the common modifications prepared by CLC/TC 61 "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be implemented (dop) 2016-10-12  
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting (dow) 2018-10-12  
with this document have to be withdrawn

This document supersedes EN 60335-2-15:2002.

This Part 2-15 is to be used in conjunction with EN 60335-1:2012 and its amendments.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60335-2-15:2012 are prefixed "Z".

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

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

## Endorsement notice

The text of the International Standard IEC 60335-2-15:2012 was approved by CENELEC as a European Standard with agreed common modifications.

## COMMON MODIFICATIONS

### 1 Scope

#### *Replacement*

This clause of Part 1 is replaced by the following.

This European Standard deals with the safety of electrical appliances for heating liquids for household and similar purposes, their **rated voltage** being not more than 250 V.

NOTE Z101 Some appliances may be used for heating food.

NOTE Z102 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 intended to be used by laymen in shops and other premises for normal housekeeping purposes, are within the scope of this standard.

NOTE Z103 Examples of such appliances are

- glue pots with a water jacket,
- livestock feed boilers,
- sterilizers.

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

NOTE Z104 Examples of appliance for household environment are appliances for typical housekeeping functions used in the household environment that may also be used by non expert users for typical housekeeping functions:

- in shops and other similar working environments;
- in farm houses;
- by clients in hotels, motels and other residential type environments;
- in bed and breakfast type environments.

NOTE Z105 Household environments include the dwelling and its associated buildings, the garden, etc.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in household and similar environments.

However, in general, it does not take into account **children** playing with appliances and their **use** by **very young children**.

It does not take into account the **use** of the following appliances by **children**:

- pressure cookers;
- glue pots with a water jacket;
- livestock feed boilers;
- sterilizers;
- **soy milk makers**;
- wash boilers.

It does not take into account the **use** of the following appliances by **young children** without supervision:

- cooking pans;
- slow cookers;
- **steam cookers**;
- tea makers;
- **rice cookers**;
- coffee makers;
- kettles;
- egg boilers;
- milk heaters.

NOTE Z106 **Feeding bottle heaters** and yoghurt makers may be used by **young children**.

It is recognized that **very vulnerable people** may have needs beyond the level addressed in this standard.

NOTE Z107 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, the national water supply authorities and similar authorities.

NOTE Z108 This standard does not apply to

- frying pans and deep fat fryers (EN 60335-2-13),
- storage water heaters (EN 60335-2-21),
- instantaneous water heaters (EN 60335-2-35),
- surface-cleaning appliances employing liquids or steam (EN 60335-2-54),
- portable immersion heaters (EN 60335-2-74),
- commercial dispensing appliances and vending machines (EN 60335-2-75),
- appliances for medical purposes (EN 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 (EN 60335-2-98).

NOTE Z109 Attention is drawn to the fact that in many countries requirements for pressure vessels are applied to pressure cookers.

## 7 Marking and instructions

This clause of Part 1 is applicable except as follows:

### 7.1 **Add the following:**

When the provisions of footnote b to Table Z101 apply, the appliance shall be marked with

- the substance of “CAUTION: Hot surface”, or
- symbol IEC 60417-5041.

The warning shall be put on the surface of the appliance having the highest temperature and shall be visible during normal use.

**7.6 Add the following::**

[symbol IEC 60417-5041]

Caution, hot surface

**7.10 Replace** the text beginning by "Devices used to start/stop operational..." and ending in the paragraph starting with "An ON/OFF switch, if any,..." included NOTE Z1 and NOTE Z2 by the following:

The accessible switch required by 22.40 shall be distinguished from other manual devices by means of shape, or size, or surface texture, or position, etc.

An indication that the device has been operated shall be given by:

- a tactile feedback, or
- an audible and visual feedback.

NOTE Z1 The sound of the motor or sound of an actuator switching ON/OFF is regarded as audible feedback. The stopping of the typical function (e.g. stopping of the vibration on the body of the appliance or of a part of it) is regarded as tactile means.

NOTE Z2 Devices used to start/stop operational functions mean devices that are operated by the user to start/stop the intended function of the appliance.

A selector switch with an off-position clearly identifiable is allowed.

An ON/OFF switch, if any, is considered a suitable device to stop operational functions. A plug is not considered a suitable device to stop operational functions, as it can be difficult to be reached by vulnerable persons.

**7.12 Replace** the third and fourth paragraph of Part 1 with the following:

The instructions for pressure cookers, glue pots with a water jacket, livestock feed boilers, sterilizers, soy milk makers, wash boilers shall include the substance of the following:

This appliance shall not be used by children. Keep the appliance and its cord out of reach of children.

The instructions for cooking pans, slow cookers, **steam cookers**, **rice cookers**, coffee-makers, kettles, egg boilers, milk heaters, tea makers shall include the substance of the following:

This appliance can be used by children aged from 8 years and above if they have been given supervision or instruction concerning use of the appliance in a safe way and if they understand the hazards involved. Cleaning and user maintenance shall not be made by children unless they are older than 8 and supervised. Keep the appliance and its cord out of reach of children aged less than 8 years.

The instructions for feeding bottle heaters, yoghurt makers shall include the substance of the following:

This appliance can be used by children aged from 3 years and above if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Cleaning and user maintenance shall not be made by children unless they are aged from 8 years and above and supervised. Keep the appliance and its cord out of reach of children aged less than 3 years.

The instructions shall also include the substance of the following:

Appliances can be used by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance.

If symbol IEC 60417-5041 is marked on the appliance, the instructions shall state that surfaces are liable to get hot during use.

**Add the following after 7.12:**

**7.14 Addition:**

The height of symbol IEC 60417-5041 shall be at least 8 mm.

The height of the warning "CAUTION. Hot surface" shall be at least 4 mm (measured on the capital letters).

## **11 Heating**

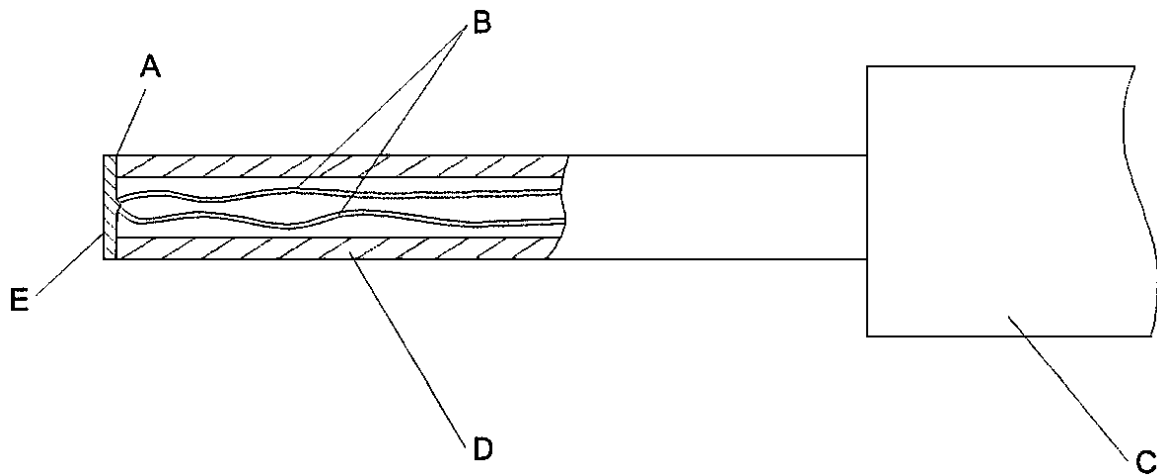
**11.3 Addition:**

*For flat surfaces, temperature rises of the accessible front surface are measured using the probe of Figure Z101. The probe is applied with a force of  $4\text{ N} \pm 1\text{ N}$  to the surface in such a way that the best possible contact between the probe and the surface is ensured.*

NOTE Z101 Any measuring instrument giving the same results as the probe may be used.



Add the following Figure Z101:



**Key**

- A adhesive
- B thermocouple wires 0,3 mm diameter to EN 60584-1 Type K (chrome alumel)
- C handle arrangement permitting a contact force of  $4\text{ N} \pm 1\text{ N}$
- D polycarbonate tube: inside diameter 3 mm, outside diameter 5 mm
- E tinned copper disc: 5 mm diameter, 0,5 mm thick

NOTE The contact face of the disc is to be flat.

**Figure Z101 – Probe for measuring flat surface temperatures**

**11.8 Modification:**

**Replace** the first paragraph of Part 1 by the following: “During the test, the temperature rises measured with thermocouples are monitored continuously and shall not exceed the values shown in Table 3 and the temperature rises measured with the probe of Figure Z101 or thermocouples shall not exceed the values of Table Z101 in accordance with 11.Z101 and 11.Z102”.

In Table 3, **delete** the row “External enclosure of **motor-operated appliances**, except handles held in normal use” and the corresponding footnotes.

Add the following Table Z101:

**Table Z101 – Maximum temperature rises of external enclosures under normal operating conditions**

<b>Surface<sup>d</sup></b>	<b>Temperature rise<sup>a, b</sup></b> K
<i>Bare metal</i>	45
<i>Coated metal<sup>e</sup></i>	55
<i>Glass and ceramic</i>	60
<i>Plastic and plastic coating &gt; 0,3 mm<sup>c</sup></i>	65

<sup>a</sup> In addition to surfaces described under 11.Z101 the following surfaces or elements shall not be taken into consideration:

- hot functional surface: surface which is intentionally heated by an internal heat source and which has to be hot to carry out the function for which the equipment is intended to be used;
- vessels that contain hot liquids and that become hot through conduction by a heated part of the appliance (e.g. coffee pots in percolator type coffee makers and kettles);
- handles or control knobs including keypads, keyboards and the like;
- surfaces of heated cavities or surfaces adjacent to the functional areas inside the compartment.

<sup>b</sup> When, due to the construction or dimensional limitations of the appliance, the required values cannot be met, the maximum temperature rise shall not be higher than twice the values indicated. In such cases, a warning shall be marked on the appliance.

<sup>c</sup> The temperature rise limit of plastic also applies for plastic material having a metal finish of thickness less than 0,1 mm.

<sup>d</sup> When the thickness of the plastic coating does not exceed 0,3 mm, the temperature rise limits of the coated metal or of glass and ceramic material apply.

<sup>e</sup> Metal is considered coated when a coating having a minimum thickness of 80 µm made by enamel or non substantially plastic coating is used.

**Add the following new subclauses:**

**11.Z101** For coffee makers, milk heaters, egg boilers, cooking pans, slow cookers, steam cookers, pressure cookers, wash boilers, rice cookers, glue pots with a water jacket, livestock feed boilers, sterilizers, **soy milk makers**, tea makers, kettles and other appliances for boiling water, having a rated capacity not exceeding 10 l, the temperature rise limits in Table Z101 apply.

The appliance is supplied at **rated voltage** and operated under **normal operation**.

Temperature rises are not measured on

- the lids,
- surfaces within 25 mm from
  - the edge of the lid,
  - the ventilation openings,
  - the edge of the hot functional surface,
- enclosure at a distance within 25 mm from the heating element,
- underside surfaces that are not accessible with probe 41 of EN 61032. The probe is applied without appreciable force.

**11.Z102** For **feeding-bottle heaters** and yoghurt makers the temperature rise limits in Table Z101 apply.

The appliance is supplied at **rated voltage** and operated under **normal operation**.

## 22 Construction

*Add the following:*

### 22.40 Addition:

Appliances except eggs boilers, **feeding bottle heaters**, yogurt makers and slow cookers shall be fitted with an accessible switch or other means to stop operational functions of the appliance.

## Bibliography

The bibliography of part 1 is applicable except as follows:

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60335-2-13	NOTE Harmonized as EN 60335-2-13.
IEC 60335-2-21	NOTE Harmonized as EN 60335-2-21.
IEC 60335-2-35	NOTE Harmonized as EN 60335-2-35.
IEC 60335-2-54	NOTE Harmonized as EN 60335-2-54.
IEC 60335-2-74	NOTE Harmonized as EN 60335-2-74.
IEC 60335-2-75	NOTE Harmonized as EN 60335-2-75.
IEC 60335-2-98	NOTE Harmonized as EN 60335-2-98.



# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**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**





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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**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**

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## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references.....	8
3 Terms and definitions.....	8
4 General requirement.....	10
5 General conditions for the tests.....	10
6 Classification.....	10
7 Marking and instructions.....	10
8 Protection against access to live parts.....	12
9 Starting of motor-operated appliances.....	13
10 Power input and current.....	13
11 Heating.....	13
12 Void.....	15
13 Leakage current and electric strength at operating temperature.....	15
14 Transient overvoltages.....	15
15 Moisture resistance.....	15
16 Leakage current and electric strength.....	17
17 Overload protection of transformers and associated circuits.....	17
18 Endurance.....	17
19 Abnormal operation.....	17
20 Stability and mechanical hazards.....	19
21 Mechanical strength.....	20
22 Construction.....	20
23 Internal wiring.....	24
24 Components.....	24
25 Supply connection and external flexible cords.....	25
26 Terminals for external conductors.....	25
27 Provision for earthing.....	25
28 Screws and connections.....	25
29 Clearances, creepage distances and solid insulation.....	26
30 Resistance to heat and fire.....	26
31 Resistance to rusting.....	26
32 Radiation, toxicity and similar hazards.....	26
Annexes.....	28
Annex C (normative) Ageing test on motors.....	28
Bibliography.....	29
Figure 101 – Schematic representation of the 30 ml spillage test.....	27

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –****Part 2-15: Particular requirements  
for appliances for heating liquids**

## 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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This part of International Standard IEC 60335 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This sixth edition cancels and replaces the fifth edition published in 2002 including its Amendment 1 (2005) and its Amendment 2 (2008). It constitutes a technical revision.

The principal changes in this edition as compared with the fifth edition of IEC 60335-2-15 are as follows (minor changes are not listed):

- added requirements for soy milk makers;
- added requirements for dynamic pressure cookers;
- expanded requirements for cordless kettles to cover cordless appliances throughout document;



- reorganized 7.12 so that instructions related to generic types of appliances covered by this part are listed first;
- converted notes to normative (5.2, 7.12, 19.101, 22.7, 22.106, 24.1.5, 24.4, 25.101) text;
- deleted Note in 19.102.

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

FDIS	Report on voting
61/4451/FDIS	61/4504/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 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 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.

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 following differences exist in the countries indicated below.

- 19.101: The test is not applicable (Japan).
- 25.8: A supply cord having a cross-sectional area of 0,75 mm<sup>2</sup> is not allowed for appliances having a rated current exceeding 6 A (Japan).
- 25.8: Longer supply cords are allowed (Japan).

## 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.

## 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 International Standard deals with the safety of electrical appliances for heating liquids for household and similar purposes, their **rated voltage** being not more than 250 V.

NOTE 101 Some appliances can be used for heating food.

NOTE 102 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 maker;
- wash boilers;
- yoghurt makers.

Appliances intended for normal household and similar use and that may also be used by laymen in shops, in light industry and on farms, are within the scope of this standard.

NOTE 103 Examples of such appliances are

- glue pots with a water jacket;
- livestock feed boilers;
- 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.

NOTE 104 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, the national water supply authorities and similar authorities.

NOTE 105 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).

NOTE 106 Attention is drawn to the fact that in many countries requirements for pressure vessels are applied to pressure cookers.

## 2 Normative references

This clause of Part 1 is applicable.

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**