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Date: 01 January 2021

Origin: International

Latest date for receipt of comments: 24 February 2021

Project No. 2020/02923

Responsible committee: CPL/61 Safety of household and similar electrical appliances

Interested committees:

Title: Draft BS EN IEC 60335-2-36 Household and similar electrical appliances - Safety. Part 2-36: Particular requirements for commercial electric cooking ranges, ovens, hobs and hob elements.

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- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



61/6158/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:
IEC 60335-2-36 ED7

DATE OF CIRCULATION:
2021-01-01

CLOSING DATE FOR VOTING:
2021-03-26

SUPERSEDES DOCUMENTS:
61/6147/RR

IEC TC 61 : SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

SECRETARIAT:

United States of America

SECRETARY:

Ms Randi Myers

OF INTEREST TO THE FOLLOWING COMMITTEES:

PROPOSED HORIZONTAL STANDARD:



Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC

☐ ENVIRONMENT

☐ QUALITY ASSURANCE

☒ SAFETY

☐ SUBMITTED FOR CENELEC PARALLEL VOTING

☒ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

Household and similar electrical appliances - Safety - Part 2-36: Particular requirements for commercial electric cooking ranges, ovens, hobs and hob elements

PROPOSED STABILITY DATE: 2024

NOTE FROM TC/SC OFFICERS:

This document is circulated according to the decisions taken at the meeting of TC 61 in 2020/Web - see 61/5998A/DA.

History Refer to:

61/6078/DC and 61/6098A/INF in 61 (2020Web/Secretariat) 09 item 13b.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-36: Particular requirements for commercial electric cooking ranges, ovens, hobs and hob elements

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 60335-2-36 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This seventh edition cancels and replaces the sixth edition published in 2017. This edition constitutes a technical revision.

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

– the text has been aligned with Part 1 Ed 6;

– some notes have been converted to normative text or deleted (1, 7.1, 7.15, 11.4, 13.3, 21.101, 22.101, 27.2, 30.101);

– conciliate the text of IEC 60335-2-36 with the one of other standards under IEC/TC61/MT32;

– in 15.1.1 is a new technical proposal to clarify the testing procedure;

– introduced a clarification on the test conditions in 19.1 and 23.3;

13 – introduced clarifications in the requirements in 25.3.

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

FDIS	Report on voting
61/XX/FDIS	61/XX/RVD

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

17 The language used for the development of this International Standard is English

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

19 This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its
20 amendments. It was established on the basis of the sixth edition (2020) of that standard.

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

22 This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert
23 that publication into the IEC standard: Safety requirements for commercial electric cooking
24 ranges, ovens, hobs and hob elements.

25 When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as
26 far as is reasonable. When this standard states “addition”, “modification” or “replacement”, the
27 relevant text in Part 1 is to be adapted accordingly.

28 NOTE 2 The following numbering system is used:

- 29 – subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- 30 – unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including
31 those in a replaced clause or subclause;
- 32 – additional annexes are lettered AA, BB, etc.

33 NOTE 3 The following print types are used:

- 34 – requirements: in roman type;
- 35 – *test specifications: in italic type;*
- 36 – notes: in small roman type.

37 Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the
38 associated noun are also in bold.

39 The committee has decided that the contents of this document will remain unchanged until the
40 stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to
41 the specific document. At this date, the document will be

- 42 • reconfirmed,
- 43 • withdrawn,
- 44 • replaced by a revised edition, or
- 45 • amended.

46 The National Committees are requested to note that for this publication the stability date is
47 2024.

48 THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND
49 WILL BE DELETED AT THE PUBLICATION STAGE.

50 NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing
51 organizations may need a transitional period following publication of a new, amended or revised IEC publication in

52 which to make products in accordance with the new requirements and to equip themselves for conducting new or
53 revised tests.

54 It is the recommendation of the committee that the content of this publication be adopted for implementation nationally
55 not earlier than 12 months or later than 36 months from the date of publication.

56

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 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.

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 2-36: Particular requirements for commercial electric cooking ranges, ovens, hobs and hob elements

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electrically operated commercial **cooking and baking ranges**, ovens, **hobs, hob elements** and similar appliances ~~not intended for household and similar use~~, their **rated voltage** being not more than 250 V for single-phase appliances connected between one phase and neutral and 480 V for other appliances.

These appliances are not intended for household and similar purposes. They are used for commercial processing of food in areas not open to the public, for example in kitchens of restaurants, canteens, hospitals and in commercial enterprises such as bakeries and butcheries.

~~NOTE 101 – These appliances are used for the commercial processing of food, for example in kitchens of restaurants, canteens, hospitals and in commercial enterprises such as bakeries, butcheries, etc.~~

The electrical part of appliances making use of other forms of energy is also within the scope of this standard.

As far as is practicable, this standard deals with the common hazards presented by these types of appliances.

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;
- in many countries, additional requirements are specified for pressure appliances.

~~NOTE 102 – 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.~~

This standard does not apply to

- appliances designed 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 continuous mass production of food

~~NOTE 103 – This standard does not apply to~~

- ~~– appliances designed 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 continuous mass production of food;~~
- steam cookers, forced and steam convection ovens (IEC 60335-2-42);

- 147 – **appliances for keeping food and crockery warm** (IEC 60335-2-49);
- 148 – commercial microwave ovens (IEC 60335-2-90).

149 2 Normative references

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

151 *Addition:*

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

153 ISO 185, *Grey cast irons – Classifications*

154 ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel – Part 1:*
155 *Bolts, screws and studs with specified property classes – Coarse thread and fine pitch thread*

156 ISO 3506-1, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 1:*
157 *Bolts, screws and studs*

158 ISO 3506-2, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 2:*
159 *Nuts*

160 ISO 3506-3, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 3: Set*
161 *screws and similar fasteners not under tensile stress*

162 ISO 3506-4, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 4:*
163 *Tapping screws*

164 3 Terms and definitions

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

166 3.1 Definitions relating to physical characteristics

167 3.1.4 Addition:

168 Note 1 to entry: The **rated power input** is the sum of the power inputs of all the individual elements in the appliance
169 that can be on at one time; where **there are** several such combinations **are** possible, that giving the highest power
170 input is used in determining the **rated power input**.

171 3.1.9 Addition:

172 operation of the appliance under the following conditions:

173 Solid **hob elements** are operated with no load and sheathed **hob elements** are operated with
174 a load made of dull black, cold or hot rolled steel, 9 mm to 10 mm thick, that covers not less
175 than 90 % and not more than 100 % of the element surface. The **hob elements** are operated
176 with the controls set to give the temperatures as set out below, the temperature being measured
177 at the geometrical centre or the hottest point of the solid element or load, if the element is
178 unevenly heated.

179 Stepped controls are set to the first position that gives a temperature equal to or greater
180 than 275 °C. Cycling controls are set so that the mean value of the temperature over the cycle
181 is 275 °C ± 5 °C. If this temperature cannot be reached, the control is set at the maximum.

182 Non-induction heating sources beneath a glass-ceramic or similar material are operated with a
183 pan or pans containing initially cold water, the pan(s) being filled to a height of 60 mm ± 10 mm.
184 The pan or pans are of aluminium, of ordinary quality, not brightly polished, with a base

concavity not exceeding 0,1 mm. The pan or pans shall cover the **cooking zone** to the greatest extent possible.

The pan or pans are covered with a lid. The controls are set at maximum until the water boils and then adjusted to maintain boiling. Water is added to maintain the water level during boiling.

Induction heating sources beneath a glass-ceramic or similar material are operated with the pan or pans recommended by the manufacturer.

If one pan is used, it shall cover as closely as possible, but not less than, the full area of the **cooking zone**. The pan is positioned centrally.

For non-circular **cooking zones** a combination of the smallest number of pans is chosen to cover as much as possible the area of the **cooking zone**.

The pan or pans in each case are filled with initially cold frying oil to a height of 30 mm ± 5 mm. The controls are set at maximum until the temperature of the oil attains a value of 180 °C and then adjusted to maintain the oil at a temperature of 180 °C ± 15 °C. The oil temperature is measured 10 mm above the centre of the bottom of the vessel.

A further test is made using initially cold water, the pan(s) being filled to a height of 60 mm ± 10 mm. The pan or pans are covered with a lid. The controls are set **to at** maximum until the water boils and then adjusted to maintain boiling. Water is added to maintain the water level during boiling.

The condition providing the most unfavourable results (oil or water) is used.

Ovens are operated with no load and with the controls set so that the mean value of the temperature over the thermostat cycle at the geometric centre of the usable space in the interior of the oven is maintained at 240 °C ± 4 °C. Stepped controls are set so that this temperature is 240 °C ± 15 °C. For ovens that are capable of attaining temperatures in excess of 290 °C, the controls are set so that the temperature is 50 °C ± 4 °C below the maximum temperature attainable. For ovens that are unable to attain a temperature of 240 °C, the controls are set **to at** maximum.

Griddle plates are operated with no load and with the controls set so as to give the temperatures set out below, the temperature being measured at the hottest point of each controlled cooking surface. Stepped controls are set to the first position that gives a temperature equal to or greater than 275 °C. Cycling controls are set so that the mean value of the temperature over the cycle is 275 °C ± 5 °C. If this temperature cannot be reached, the control is set **to at** maximum.

Motors incorporated in the appliance are operated **in the intended manner** under the most unfavourable conditions that can be expected in normal use, taking into account the manufacturer's instructions.

3.5 Definitions relating to types of appliances

3.5.101

cooking and baking range

single cooking or baking appliance incorporating one or more ovens together with one or more **hob elements** or **griddle plates** or a combination of these

Note 1 to entry: An appliance incorporating a forced convection oven, steam-convection oven or microwave oven is considered to be an appliance incorporating another appliance (see also 5.102).

3.5.102

hob

hob surface and one or more **hob elements**

Note 1 to entry: It may be a separate appliance or part of a **cooking and baking range**.

Note 2 to entry: A **hob** may also incorporate a **griddle plate**.

3.5.103**installation wall**

special fixed construction containing supply facilities for appliances installed in conjunction with it

3.6 Definitions relating to parts of an appliance**3.6.101****heating unit**

any part of the appliance that fulfils an independent cooking or heating function

Note 1 to entry: Examples are **hob elements**, **griddle plates** or ovens.

Note 2 to entry: If an oven incorporates more than one heating element or groups of elements that are so controlled that one element or group cannot be switched on while another element or group is energized, each of the elements or groups of elements is to be considered as a separate **heating unit** and tested accordingly.

3.6.102**hob element**

heating unit designed to accommodate a vessel or vessels on its upper surface

Note 1 to entry: A **hob element** may consist of an **induction heating source** or a non-induction heating source beneath a surface of glass-ceramic or similar material.

3.6.103**hob surface**

horizontal part of the appliance to which the **hob elements** are attached

~~Note 1 to entry: It may be a separate appliance or part of a **cooking range**.~~

~~Note 2 to entry: A **hob** may also incorporate a **griddle plate**.~~

3.6.104**cooking zone**

area marked on a **hob surface** of glass-ceramic or similar material where the vessel is intended to be placed

3.6.105**induction heating source**

heating source that operates by inducing eddy currents in a vessel positioned on the **hob element**

3.6.106**griddle plate**

heating unit having a cooking surface on which the food is intended to be placed directly

3.6.107**pan detector**

device incorporated in a **hob element** that prevents its operation unless a vessel is placed on the **cooking zone**

Note 1 to entry: A **pan detector** is not considered to be a **thermostat** or **protective device**.

3.6.108**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.