

INTERNATIONAL STANDARD

NORME INTERNATIONALE



AMENDMENT 2 AMENDEMENT 2

**Household and similar electrical appliances – Safety –
Part 2-42: Particular requirements for commercial electric forced convection
ovens, steam cookers and steam-convection ovens**

**Appareils électrodomestiques et analogues – Sécurité –
Partie 2-42: Règles particulières pour les fours électriques à convection forcée,
les cuiseurs à vapeur électriques et les fours combinés vapeur-convection
électriques à usage collectif**



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 97.040.50

ISBN 978-2-8322-4179-0

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FOREWORD

This amendment has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

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

FDIS	Report on voting
61/5325/FDIS	61/5386/RVD

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website 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- withdrawn,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.

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(standards.iteh.ai)

NOTE 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.

<https://standards.iteh.ai/catalog/standards/sist/85f99e69-c57e-43ed-a4b8-8a01012a6386/iec-60335-2-42-2002-amd2-2017>

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.

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.

1 Scope

Add in the second paragraph, the words, “and similar”, after the words, “.....not intended for household”, to read:

“...not intended for household and similar use,....”.

Add the following text after the first paragraph:

This standard deals also with electrically operated commercial **forced convection ovens, steam cookers, steam-convection ovens** intended for use on board ships, for which Annex AA is applicable.

Replace Note 101 by the following:

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

Replace the first dashed item of Note 102 by the following:

- for appliances intended to be used in vehicles or aircrafts, additional requirements may be necessary;

Replace the third dashed item of Note 103 by the following:

- appliances for continuous mass production of food.

2 Normative references (standards.iteh.ai)

Replace the existing text by the following:

<https://standards.iteh.ai/catalog/standards/sist/85f99e69-c57e-43ed-a4b8-19d12e001c09/iec-60335-2-42:2002-amd2-2017>

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-27, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

IEC 60068-2-52, *Environmental testing – Part 2: Tests – Test Kb: Salt mist, cyclic (sodium, chloride solution)*

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

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

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

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

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

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

3 Definitions

Replace the title of Clause 3 but not the clause number by the following:

Terms and definitions

Add the following new definitions:

3.110

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.

3.111

adjacent surface

surface adjacent to a **functional surface** and which can become hot through conduction

7 Marking and instructions

7.1 Replace the text of the addition by the following:

Appliances shall be marked with the **rated pressure**, in kilopascals (kPa), on pressurized parts of the appliance.

If appliances have external **accessible surfaces**, for which temperature rise limits are specified in Table 101 and for which the provisions of footnote b to Table 101 apply, then the appliance shall be marked with symbol IEC 60417-5041 (2002-10), or with the substance of the following:

CAUTION: Hot surfaces.

7.6 Delete symbol 5021 of IEC 60417-1.

Add the following new symbol:



[symbol IEC 60417-5041
(2002-10)]

Caution, hot surface

7.12 Replace the third paragraph of the addition by the following:

If symbols IEC 60417-5021 (2002-10) and IEC 60417-5041 (2002-10) are marked on the appliance, their meaning shall be explained.

Add the following new text to the addition:

The instructions of **steam cookers** and **steam-convection ovens** shall include the substance of the following warning:

WARNING: When opening the door of the **cooking compartment** hot steam can come out.

The instructions shall include the substance of the following:

These appliances are intended to be used for commercial applications, for example in kitchens of restaurants, canteens, hospitals and in commercial enterprises such as bakeries, butcheries, etc., but not for continuous mass production of food.

If the manufacturer wants to limit the use of the appliance to less than the above, this has to be clearly stated in the instructions.

7.12.1 Add to the last sentence of the first paragraph “or a steam cleaner”.

Add the following new subclauses:

7.12.9 Not applicable.

7.14 Addition:

The height of the triangle used with symbol IEC 60417-5041 (2002-10) shall be at least 15 mm.

7.15 Replace the text of the addition by the following:

The marking specified for external **accessible surfaces** shall be visible when the appliance is operated as in normal use, including when actuating any switch, adjusting any control or opening a lid or door. It shall not be placed on a **functional surface** or **adjacent surface**.

Modification:

iTeh STANDARD PREVIEW

(standards.iteh.ai)

For **fixed appliances**, the marking of the name or trademark or identification mark of the manufacturer or responsible vendor and the model or type reference shall be marked on the appliance and, if not visible when the appliance is installed as in normal use, shall be included in the instructions or on an additional label that can be fixed near the appliance after installation.

NOTE 101 An example of such a **fixed appliance** is a **built-in appliance**.

11 Heating

Add the following new subclause:

11.3 Addition:

Where the external **accessible surfaces** are suitably flat and access permits, then the test probe of Figure 104 is used to measure the temperature rises of external **accessible surfaces** specified in Table 101. 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. The measurement is performed after a contact period of 30 s.

The probe may be held in place using a laboratory stand clamp or similar device. Any measuring instrument giving the same results as the probe may be used.

11.7 Add the following new text after Note 101 of the replacement:

Steady conditions are considered to exist 60 min after reaching the temperatures defined for **normal operation**.

When an appliance is assembled in combination with, equipped with or incorporating accessories or other appliances, the interaction shall be covered if they are provided to operate simultaneously as stated by the manufacturer or by a common control.

11.8 Add the following new text to the addition:

During the test, the temperature rises are monitored continuously and shall not exceed the values shown in Table 3 and Table 101.

Table 101 – Maximum temperature rises for specified external accessible surfaces under normal operating conditions

Surface ^a	Temperature rise of external accessible surfaces ^b K
Bare metal	48
Coated metal ^c	59
Glass and ceramic	65
Plastic and plastic coating > 0,4 mm ^{d, e}	74
<p>^a Temperature rises are not measured on:</p> <ul style="list-style-type: none"> – the underside of appliances intended to be used on a working surface or floor; – the rear surface of appliances; – surfaces that are inaccessible to a 75 mm diameter probe having a hemispherical end; – the area around a heated cavity door opening as shown in Figure 105; – functional surfaces and adjacent surfaces. <p>^b The temperature rise on external accessible surfaces up to a distance of 100 mm from adjacent surfaces of the appliance, (see Figure 103) may exceed the limits by up to 25 K, but the relevant part shall then be marked with symbol IEC 60417-5041 (2002-10) or the equivalent text.</p> <p>^c Metal is considered coated when a coating having a minimum thickness of 90 µm made by enamel or non-substantially plastic coating is used.</p> <p>^d The temperature rise limit of plastic also applies for plastic material having a metal finish of thickness less than 0,1 mm.</p> <p>^e When the thickness of the plastic coating does not exceed 0,4 mm, the temperature rise limits of coated metal for underlying metal apply or the temperature rise limits for glass or ceramic material for underlying glass or ceramic material apply.</p>	

13 Leakage current and electric strength at operating temperature

13.2 Replace the text of the modification by the following:

Instead of the permissible leakage current for **stationary class I appliances**, the following applies:

- for cord and plug connected appliances 0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever is higher.
- for other appliances 0,75 mA or 1 mA per kW **rated power input** of the appliance with no maximum, whichever is higher.

For **portable class I appliances**, instead of the permissible leakage current, the following applies:

- for cord and plug connected appliances 0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever is higher.

15 Moisture resistance

15.2 In the first paragraph of the test specification of the replacement, add “using a spillage solution comprising water containing approximately 1 % NaCl and 0,6 % rinsing agent.

Add the following as a new second paragraph of the test specification of the replacement:

Any commercially available non-ionic rinsing agent may be used, but if there is any doubt with regards to the test results, the rinsing agent shall have the following properties:

- viscosity 17 mPa·s
- pH 2,2 (1 % in water).

and its composition shall be:

Substance	Parts by mass %
Plurafac ® LF 221 ¹	15,0
Cumene sulfonate (40 % solution)	11,5
Citric acid (anhydrous)	3,0
Deionized water	70,5

In the existing fourth paragraph of the test specification, replace “cold water containing approximately 1 % NaCl” by “the solution”.

In the existing fifth paragraph of the test specification, replace the third occurrence of “water” by “the solution”.

<https://standards.iteh.ai/catalog/standards/sist/85f99e69-c57e-43ed-a4b8-8a016a2dac8e/iec-60335-2-42-2002-amd2-2017>

In the existing eighth paragraph of the test specification, delete “(without salt)”.

15.3 Delete this subclause.

16 Leakage current and electric strength

16.2 Replace the text of the modification by the following:

Instead of the permissible leakage current for **stationary class I appliances**, the following applies:

- for cord and plug connected appliances 0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever is higher;
- for other appliances 0,75 mA or 1 mA per kW **rated power input** of the appliance with no maximum, whichever is higher.

For **portable class I appliances**, instead of the permissible leakage current, the following applies:

- for cord and plug connected appliances 0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever is higher.

¹ Plurafac ® LF 221 is the trade name of a product supplied by BASF. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of this product.

19 Abnormal operation

19.4 *Delete this subclause.*

20 Stability and mechanical hazards

20.2 *Replace the text of the addition by the following:*

The requirement concerning moving parts of the appliance does not apply to parts necessary to implement the tilting operation such as handles or wheels.

22 Construction

22.102 *Replace the requirement with the following:*

Lights, switches or push-buttons for the indication of danger, alarm or similar situations shall be coloured red.

22.106 *Replace the requirement by the following:*

Appliances intended to be connected to the water mains shall have means for safe collection and/or drainage of water. The level to which manually filled water containers have to be filled shall be so located as to be readily visible when filling and that no other hazardous situation for the user could occur.

Add the following new subclause:

22.114 **Void**

<https://standards.iteh.ai/catalog/standards/sist/85f99e69-c57e-43ed-a4b8-2022-000000000000/iec-60335-2-42-2002-amd2-2017>

22.116 *Replace the test specification by the following:*

Compliance is checked by inspection, by measurement of the dimensions after removal of detachable parts and by manual test.

25 Supply connection and external flexible cords

25.3 *Replace the first paragraph of the addition by the following:*

Appliances with a mass greater than 40 kg, intended for permanent connection to fixed wiring and not provided with rollers, castors or similar means shall be constructed so that the connection can be done after the appliance has been installed in accordance with the manufacturer's instructions.

28 Screws and connections

Replace the existing text by the following:

This clause of Part 1 is applicable except as follows.

28.1 *Addition:*

Screws made of carbon steel and alloy steel shall be made in accordance with ISO 898-1.

Screws made of corrosion-resistant stainless-steel shall be made in accordance with ISO 3506-1, or ISO 3506-2, or ISO 3506-3, or ISO 3506-4.

28.4 Addition:

Screws that make mechanical connections and electrical connections shall be so designed that the contact pressure does not change appreciably through loosening of the screwed assembly parts during operational stress and contact corrosion.

Screws that make mechanical connections and provide earthing continuity shall be so designed that the contact pressure does not change appreciably through loosening of the screwed assembly parts due to operational stress and contact corrosion. They shall be designed so that a minimum contact pressure remains.

Compliance is checked by inspection and by measuring the assembling torques for screwed connections providing earthing continuity by applying a torque as specified in Table 102 to turn the screw in the fastening direction. The screw shall not turn.

The screw shall not have been unfastened prior to performing this test.

Table 102 – Assembling torques for screwed connections providing earthing continuity

Outer thread diameter of the screw mm	Assembling torque Nm	
	Screwed connections for the mechanical strength of the screws A2-70 according to ISO 3506-1, or ISO 3506-2, or ISO 3506-3, or ISO 3506-4 and 5.8 according to ISO 898-1	Screwed connections for the mechanical strength of the screws > 8.8 according to ISO 898-1
>2,8 and ≤3,6	0,8	1,3
>3,6 and ≤4,2	1,9	3,0
>4,2 and ≤5,3	3,7	6,0
>5,3 and ≤6,3	6,5	10,0
M 8	15,0	25,0
M 10	31,0	50,0

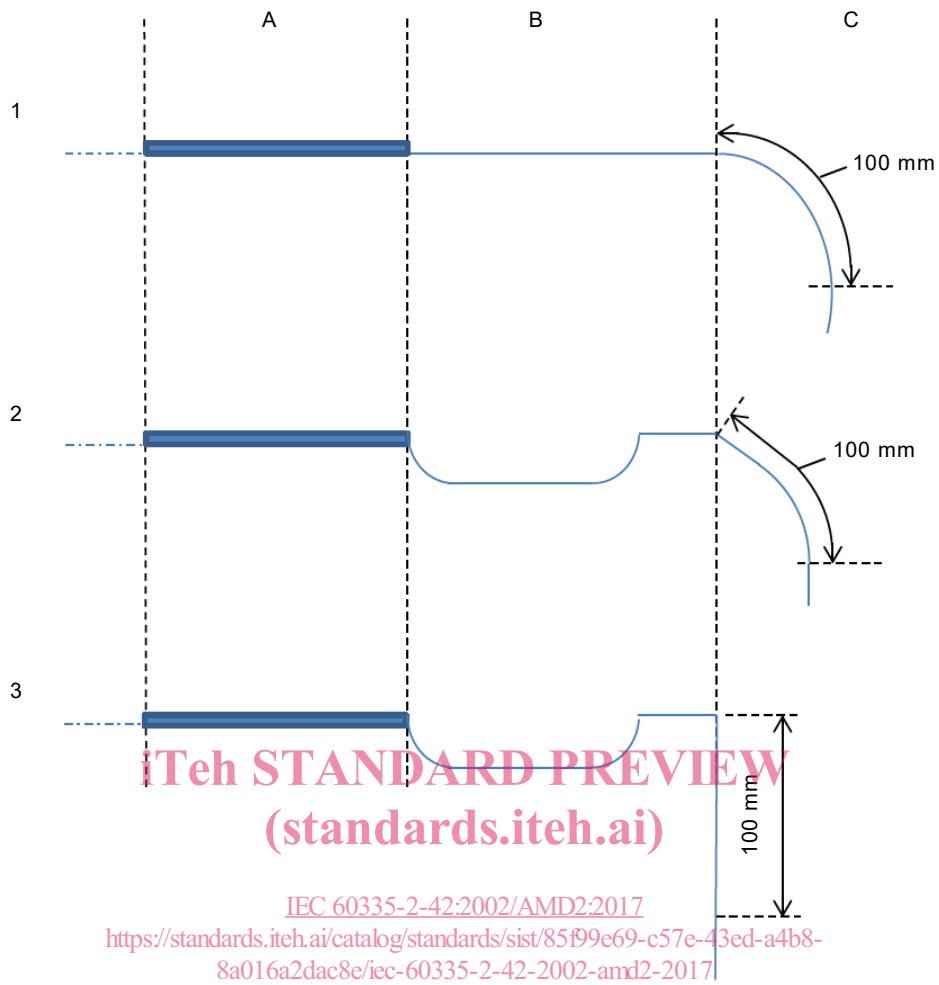
30 Resistance to heat and fire

30.2.1 Replace the text of the modification with the following:

The glow-wire test is carried out at 650 °C. The glow-wire flammability index (GWFI) according to IEC 60695-2-12 shall be at least 650 °C.

Figures

Add the following new figures:



IEC

Key

- A **functional surface**
- B **adjacent surface**
- C **external accessible surface**

Figure 103 – Identification of surfaces for temperature measurement