

INTERNATIONAL STANDARD



**Household and similar electrical appliances – Safety –
Part 2-31: Particular requirements for range hoods and other cooking fume
extractors**

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INTERNATIONAL STANDARD



**Household and similar electrical appliances – Safety –
Part 2-31: Particular requirements for range hoods and other cooking fume
extractors**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-31: Particular requirements for range hoods and other cooking fume extractors

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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

This commented version (CMV) of the official standard IEC 60335-2-31:2024 edition 6.0 allows the user to identify the changes made to the previous IEC 60335-2-31:2012+AMD1:2016+AMD2:2018 CSV edition 5.2. Furthermore, comments from IEC TC 61 experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

IEC 60335-2-31 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This sixth edition cancels and replaces the fifth 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, 22.8, 22.101, 22.102);
- c) update of the installation requirements for the heating test to include down-draft systems (11.2);
- d) addition of accessible surface temperature limits (11.3, 11.8);
- e) introduction of IEC TR 62854 to determine compliance in case of doubt (22.14);
- f) clarification of remote operation requirements for range hoods and other cooking fume extraction appliances (22.40, 22.49, 22.51);
- g) clarification of 30.101 with respect to grease filters and odour extraction filters.

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

Draft	Report on voting
61/7090/FDIS	61/7105/RVD

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

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/standardsdev/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 range hoods and other cooking fume extractors.

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 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.

IMPORTANT – The "colour inside" logo on the cover page of this document 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.

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.

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 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~~ 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 and generic standards 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. ~~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. **1**

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-31: Particular requirements for range hoods and other cooking fume extractors

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of electric **range hoods** and other cooking fume extractors intended for installing above, beside, behind or under household cooking ranges, hobs and similar cooking appliances, their **rated voltage** being not more than 250 V **including direct current (DC) supplied appliances**. **2**

NOTE 101 The cooking appliance can be supplied by electricity or other fuels, such as gas.

Appliances not intended for normal household use but that nevertheless ~~may~~ **can** be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, 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 knowledgeprevents them from using the appliance safely without supervision or instruction;
- children playing with the appliance.

~~NOTE 102~~ Attention is drawn to the fact that

- for appliances incorporating electrostatic air filters, IEC 60335-2-65 also applies;
- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements ~~could~~ **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 authorities responsible for buildings and similar authorities.

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

- appliances intended for commercial purposes (IEC 60335-2-99);
- 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 applies except as follows:

Addition:

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

IEC 61231, *International lamp coding system (ILCOS)*

IEC TR 62854:2014, *Sharp edge testing apparatus and test procedure for lighting equipment – Tests for sharpness of edge*

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

3.5 Definitions relating to types of appliances

3.5.101

range hood

motor-operated appliance intended to collect contaminated air from above a hob

Note 1 to entry: The filtered air may be discharged back into the room or ducted away.

3.5.102

down-draft system

ventilation system intended for installation adjacent to household cooking ranges, hobs and similar cooking appliances that draws contaminated air down into an internal exhaust duct

Note 1 to entry: The filtered air may be discharged back into the room or ducted away.

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:*

For **down-draft systems**, the tests specified in Clauses 11 and 13 are carried out at an ambient temperature of $40\text{ °C} \pm 2\text{ °C}$.

5.10 ~~Modification~~ *Addition:*

~~Unless otherwise stated,~~ Appliances are not connected to a duct.

5.101 Down-draft systems intended to be installed ~~above the~~ *close to* a cooking surface are tested as specified for **range hoods**.

6 Classification

This clause of Part 1 is applicable.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 Addition:

Appliances shall be marked on or near the lampholder with the maximum power input of replaceable lamps as follows:

lamp max W

The word "lamp" may be replaced by symbol IEC 60417-5012 (2002-10).

If the voltage rating of the lamp is less than the **rated voltage** of the appliance, the voltage rating of the lamp shall also be marked on or near the lampholder.

Range hoods intended to be used with self-shielded tungsten halogen lamps or metal halide lamps only shall be marked with symbol ~~"Use only with self-shielded tungsten halogen lamps or self-shielded metal halide lamps"~~ IEC 60417-6030 (2009-11) or with the substance of the following:

Use only with self-shielded tungsten halogen lamps or self-shielded metal halide lamps. **3**

Range hoods incorporating a protective shield required in 22.104 shall be marked with ~~symbol~~ ~~"Replace any cracked shield"~~ the pictogram of Figure 101 or with the substance of the following:

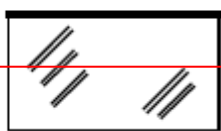
Replace any cracked protective shield **4**

7.6 Addition:



[symbol IEC 60417-6030 (2009-11)]

~~Use only with self-shielded tungsten halogen lamps or self-shielded metal halide lamps~~
use only with self-shielded lamp



~~Replace any cracked shield~~

IEC

7.12 Addition:

The instructions shall state the substance of the following:

- there shall be adequate ventilation of the room when the range hood is used at the same time as appliances burning gas or other fuels (not applicable to appliances that only discharge the air back into the room);
- the details concerning the method and frequency of cleaning;
- there is a fire risk if cleaning is not carried out in accordance with the instructions;
- do not flambé under the range hood;

- CAUTION: Accessible parts may become hot when used with cooking appliances.

The instructions shall state the substance of the following:

- lamp type, shape description and image;
- rated wattage of the intended lamp;
- max wattage of a potential replacement lamp;
- rated voltage or voltage range of lamp or, for pre-heat starting fluorescent lamps starter replacement details;
- the type of lamp cap;
- nominal dimension(s) of lamp.

An ILCOS D code (standard version code specified in IEC 61231) including both the letter and figure sections is considered to provide the required instructions.

NOTE 101 Some examples of the required marking using the ILCOS D code are as follows:

Example 1 (for tungsten filament lamps – incandescent lamps):

Use type lamp (or use in alternative type lamp) IAA/C-40-220/230-240-E27-60 (ILCOS D code in according to standard IEC 61231).

- Tungsten filament lamp – clear pear-shaped lamp
- Max wattage: 40 W
- Voltage range: 220 V – 240 V
- Dimensions: Nominal diameter 60 mm.

Example 2 (for fluorescent lamps):

Use type lamp (or use in alternative type lamp) FBRI-23-230/240-E14-82/127 (ILCOS D code in according to standard IEC 61231).

- Self-ballasted fluorescent reflector lamp – Integral induction type ballast
- Max wattage: 23 W
- Voltage range: 230 V – 240 V
- Dimensions: diameter 82 mm/length 127 mm.

If symbol ~~“Use only with self-shielded tungsten halogen lamps IEC 60417-6030 (2009-11) or self-shielded metal halide lamps”~~ or symbol ~~“Replace any cracked shield”~~ the pictogram of Figure 101 is used, its meaning shall be explained.

7.12.1 Addition:

The installation instructions shall include the substance of the following:

- the air must not be discharged into a flue that is used for exhausting fumes from appliances burning gas or other fuels (not applicable to appliances that only discharge the air back into the room);
- the minimum distance between the supporting surface for the cooking vessels on the hob and the lowest part of the **range hood**. (When the **range hood** is located above a gas appliance, this distance shall be at least 65 cm. If the instructions for installation for the gas hob specify a greater distance, this has to be taken into account. The distance of 65 cm can be reduced for
 - non-combustible parts of **range hoods**, or
 - parts operating at **safety extra low voltage**,
provided these parts do not give access to **live parts** if deformed);
- regulations concerning the discharge of air have to be fulfilled.

If the **range hood** is only intended to be installed over a hob with no more than four hob elements, this shall be stated.

The installation instructions for **range hoods** with **accessible metallic enclosures** of **class II construction** shall include details that indicate the location and maximum permitted lengths for any fixing or mounting screw or other fixing device that penetrates into the **range hood** to attach an accessory such as a fascia or duct fitting.

Where fixing or mounting screws or other fixing devices are used, that penetrate into the **range hood** with an **accessible metallic enclosure** of **class II construction**, to attach an accessory, the instructions shall indicate the required location of these screws or fixing devices and include the substance of the following warning.

Warning: Failure to install the screws or fixing device in accordance with these instructions may result in electrical hazards

The warning shall be in the same part of the instructions that include details of how to mount the equipment.

The installation instructions for **down-draft systems** shall also include ~~the substance of~~ the following:

- ~~— the following warning (for **down-draft systems** not intended to be used with gas hobs):~~
- ~~— CAUTION: This appliance is not intended to be used with gas hobs.~~
- ~~— details of the gas appliance (for **down-draft systems** intended to be used together with gas hobs):~~
- for **down-draft systems** not intended to be used with gas hobs, the substance of the following warning:
CAUTION: This appliance is not intended to be used with gas hobs.
- for **down-draft systems** intended to be used together with gas hobs, details of the gas appliance.

NOTE 101 This information can only be given if the **down-draft system** has been tested in conjunction with the designated appliance.

7.14 Addition:

The height of symbol ~~"Use only with self-shielded tungsten halogen lamps or self-shielded metal halide lamps"~~ or symbol ~~"Replace any cracked shield"~~ IEC 60417-6030 (2009-11) and the pictogram of Figure 101 shall be at least 15 mm.

7.15 Addition:

The marking for maximum power input of a replaceable lamp shall be visible during replacement of the lamp.

Symbol IEC 60417-6030 (2009-11) or the marking "Use only with self-shielded tungsten halogen lamps or self-shielded metal halide lamps" ~~or the marking "Use only with self-shielded tungsten halogen lamps or self-shielded metal halide lamps"~~ shall be visible during replacement of the lamp. ~~Symbol "Replace any cracked shield" or the marking "Replace any cracked shield"~~ The pictogram of Figure 101 or the marking "Replace any cracked protective shield" shall be visible when the appliance is installed as in normal use.

8 Protection against access to live parts

This clause of Part 1 is applicable except as follows.

8.1.1 Addition:

Test probe 18 is not applicable to parts that according to the instructions are intended to be installed more than 1,8 m above the floor. **5**

8.2 Addition:

After the removal of **detachable parts** during **user maintenance**, the **basic insulation** of internal wiring may be touched provided it is electrically equivalent to the insulation of cords complying with IEC 60227 or IEC 60245.

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.

11.2 Replacement:

Built-in appliances are installed in accordance with the instructions. Other appliances are fixed to a vertical support.

The appliance is located above a hob so that the distance between its lowest point and the hob surface is the minimum distance specified in the instructions. For **down-draft systems**, the appliance is located at the minimum distance to the cooking surface specified in the instructions. **6**
A vertical side wall extending to the top of the **range hood** is placed at right angles to the vertical support, 100 mm from one side of the **range hood**. Dull black-painted plywood approximately 20 mm thick is used for the vertical support, the side wall and for the installation of **built-in range appliances**.

If the **range hood** or **down-draft system** is intended to be ~~installed over~~ used with a hob having four hob elements, the hob shall have two 2 kW electric elements at the back and two 1,5 kW electric elements at the front.

If the **range hood** or **down-draft system** is intended to be ~~installed over~~ used with a hob having six hob elements, the hob shall have three 2 kW electric elements at the back and three 1,5 kW electric elements at the front.

The layout of the hobs used in the tests is shown in ~~Figure 101~~ Figure 102. The hobs are centrally situated with respect to the **range hood**.

Vessels, without lids, containing water are placed on the hob elements. The diameter of the vessels is approximately equal to that of the hob elements. The hob elements are operated to maintain vigorous boiling.

The appliance is also tested without the hob elements in operation.

For appliances delivered for installation with the control and filter boxes separate from the fan, the duct length on input and output shall be 4 times fan diameter. However, if the fan is intended to be mounted on the external structure of a building, the fan is not ducted on the output side.

11.3 Addition:

Where the external **accessible surfaces** are suitably flat and access permits, then the test probe of Figure 103 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. **7**

11.7 ~~Replacement~~ Modification:

Replace the first paragraph with the following: **8**

Appliances are operated until steady conditions are established.

11.8 Modification:

Replace the first paragraph with the following:

During the test, the temperature rises are monitored continuously and shall not exceed the values shown in Table 3 and Table 101. **9**

Addition:

The temperature rise limit for external enclosures, external **accessible surfaces** and wood does not apply when the hob elements are in operation. When the appliance is tested without the hob elements in operation, only the temperature rises of the external enclosures, external **accessible surfaces** and wood are measured, the temperature rise limit for wood being 65 K.

Temperature rises of lampholders and the enclosure are also determined with the fan motor switched off and lights switched on. Enclosure temperatures are not measured within a distance of 35 mm around the lamp glass regardless of its shape.

For **down-draft systems**, the temperature rises shall not exceed the values given in Table 3 reduced by 15 K.

The temperature rise of handles or grips of vents and air shutters shall not exceed the value specified in Table 3 for surfaces of handles, knobs, grips and similar parts which are held for short periods only in normal use. **10**

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

Surface	Temperature rise of external accessible surfaces ^{a, b} K
<i>Bare metal</i>	42
<i>Coated metal ^c</i>	49
<i>Glass and ceramic</i>	56
<i>Plastic and plastic coating > 0,4 mm ^{d, e}</i>	62
NOTE The temperature rise limits of handles, knobs, grips, keyboards, keypads and similar parts are specified in Table 3.	
^a Within 25 mm from air outlets, the above limits are increased by 5 K. ^b Temperature rise on surfaces that are inaccessible to a 75 mm diameter probe having a hemispherical end. ^c Metal is considered coated when a coating having a minimum thickness of 90 µm made of enamel, powder or non-substantially plastic coating is used. ^d The temperature rise limit of plastic also applies for plastic material having a metal finish of thickness less than 0,1 mm. ^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.	

12 ~~Void~~ Charging of metal-ion batteries

This clause of Part 1 is applicable. **11**

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.

15 Moisture resistance

This clause of Part 1 is applicable except as follows.

15.1.1 Addition:

*The outer part of fans intended to be installed in the external structure of a building is subjected to the test of IEC 60529:1989, 14.2.4 a), the part of the fan not mounted on the outside surface being protected against spray from the oscillating tube. The test is carried out with the appliance in the rest position and then in operation while supplied at **rated voltage**, shutters or similar devices being in the open position.*

15.2 Addition:

*A vessel with 0,5 l ~~water containing approximately 1 % NaCl~~ of the spillage solution is poured steadily over a period of 15 s over critical parts of a **down-draft system**. **12***

16 Leakage current and electric strength

This clause of Part 1 is applicable.

17 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.

18 Endurance

This clause of Part 1 is not applicable.

19 Abnormal operation

This clause of Part 1 is applicable except as follows.

19.1 Addition:

Appliances are also subjected to the test of 19.101.

19.13 Addition:

During the test of 19.101, the temperature of the motor windings shall not exceed the values specified in Table 8. The appliance shall not deform to such an extent that parts fall from it.

19.101 *Appliances are operated above a hob as specified in Clause 11, but without vessels and with only the two outer hob elements at the back being energized.*

20 Stability and mechanical hazards

This clause of Part 1 is applicable except as follows.

20.2 Addition:

Filters are considered to be **detachable parts** and shall be removed unless a **tool** is required for removal. **13**

Test probe 18 is not applicable to parts that according to the instructions are intended to be installed more than 1,8 m above the floor. **14**

20.101 If a part of a **range hood** or **down-draft system** can be moved automatically, there shall be no risk of entrapment or injury.

Compliance is checked by the following test.

*The appliance is operated at **rated voltage** and is operated to open and close the driven part.*

The driven part shall

- a) *decelerate to a speed lower than 15 mm/s in the last 50 mm of the movement, as it approaches any position in which entrapment ~~may~~ can occur; or*
- b) *when IEC 61032 probe 32 is placed at any potential entrapment point across the width and height of the opening:*

- stop and reverse direction before contacting the probe; or
- if the probe is touched by the driven part:
 - not exert a force on the probe exceeding a value of 100 N; or
 - not subject the probe to a shear force.

If compliance relies on the operation of an **electronic circuit**, the test is repeated under the following conditions applied separately:

- the fault conditions in a) to g) of 19.11.2, are applied one at a time to the **electronic circuit**;
- the electromagnetic phenomena tests of 19.11.4.2 and 19.11.4.5 are applied in turn to the appliance. The tests are carried out with surge protective devices disconnected, unless they incorporate spark gaps. 15

The driven part shall

- a) decelerate to a speed lower than 15 mm/s in the last 50 mm of the movement, as it approaches any position in which entrapment ~~may~~ can occur; or
- b) when IEC 61032 probe 32 is placed at any potential entrapment point across the width and height of the opening:
 - stop and reverse direction before contacting the probe; or
 - if the probe is touched by the driven part:
 - not exert a force on the probe exceeding a value of 100 N; or
 - not subject the probe to a shear force.

21 Mechanical strength

This clause of Part 1 is applicable.

22 Construction

This clause of Part 1 is applicable except as follows.

22.8 Replacement:

For appliances having compartments to which access is gained during **user maintenance**, the electrical connections, other than those of **interconnection cords** intended to be disconnected before cleaning or **user maintenance**, shall be arranged so that they are not subjected to pulling during cleaning or other **user maintenance**.

Compliance is checked by inspection and by the following test.

Detachable parts are removed. It shall not be possible to grasp wiring ~~likely to~~ that can be touched in such a way that the connections are subjected to undue stress.

In case of doubt, the wiring is subjected to a pull of 10 N, applied without jerks three times in succession, in the most unfavourable direction ~~likely to~~ that can occur during **user maintenance**. There shall be no appreciable displacement of the connections.

NOTE 101 ~~Interconnection cords intended to be disconnected before cleaning or user maintenance are not subjected to the test.~~

22.14 Modification:

Replace the last paragraph with the following:

Compliance is checked by inspection and, in case of doubt, by the test described in IEC TR 62854:2014, Clause 2 and Clause 5. 16

22.40 *Addition:*

Range hoods and other cooking fume extractors are considered to be appliances that can operate continuously, automatically or remotely without giving rise to a hazard.

22.49 Not applicable.

22.51 Not applicable. 17

22.101 *Appliances shall be constructed so that they can be fixed securely to a wall or other support. Brackets and similar means shall be of metal that shall not be liable to creep or deform.*

~~Compliance is checked by inspection.~~

~~NOTE~~ Keyhole slots, hooks and similar means, without any further means to prevent the appliance from being inadvertently lifted off the support, are not considered to be adequate means for fixing the appliance securely.

Compliance is checked by inspection.

22.102 Appliances shall be constructed so that parts liable to accumulate deposits of grease can be cleaned without moving adjacent cooking appliances. **Parts located behind a filter are not considered to be parts that have to be cleaned.**

Compliance is checked by inspection.

~~NOTE~~ ~~Parts located behind a filter are not considered to be parts that have to be cleaned.~~

22.103 Where fixing or mounting screws or other fixing devices that penetrate into the **range hood** with an **accessible metallic enclosure** of **class II construction** are used to attach an accessory to the **range hood**, there shall be

- pre-formed holes in the **range hood** enclosure and accessory if it is supplied by the **range hood** manufacturer, or
- markings on the **range hood** enclosure and accessory if it is supplied by the **range hood** manufacturer to indicate the correct location for the screws or fixing devices.

Where markings are used, the markings shall be clearly visible and legible during installation.

Where the fixing or mounting screw or other fixing device penetrates into the **range hood** enclosure in areas where **live parts** are present, there shall be no hazard due to screws or fixing devices piercing the wiring or insulation of **live parts** or making contact with **live parts** inside the **range hood**.

Live parts not separated from the fixing or mounting screw or other fixing device by an earthed metal barrier shall not be in an area behind the screw or other fixing device location within the envelope of a cylinder having a diameter of 10 mm and a length of 50 mm.

Compliance is checked by inspection and the following test, if applicable.

*Directly behind the entry point into the **range hood** enclosure of any fixing or mounting screw, or other fixing device, an area encompassed by a 10 mm diameter cylinder of 50 mm length is determined. The axis of the cylinder being aligned with the axis of the entry point that is normal to the surface of the **range hood** enclosure. There shall be no **live parts** within the envelope of the cylinder.*

*Additionally, **live parts** that ~~may~~ *can* encroach on the envelope of the cylinder shall have a force of 5 N applied in the direction towards the cylinder. The **live parts** shall not enter the envelope of the cylinder.*

22.104 Range hoods intended to incorporate tungsten halogen lamps or metal halide lamps shall be fitted with a protective shield. For tungsten halogen lamps, the shield shall be of glass.

This requirement is not applicable for **range hoods** intended to be used with self-shielded tungsten halogen lamps or metal halide lamps only.

Compliance is checked by inspection.

23 Internal wiring

This clause of Part 1 is applicable.

24 Components

This clause of Part 1 is applicable.

25 Supply connection and external flexible cords

This clause of Part 1 is applicable.

26 Terminals for external conductors

This clause of Part 1 is applicable.

27 Provision for earthing

This clause of Part 1 is applicable except as follows.

27.1 Addition:

Metal parts that become accessible during **user maintenance** are considered to be **accessible metal parts**.

28 Screws and connections

This clause of Part 1 is applicable.

29 Clearances, creepage distances and solid insulation

This clause of Part 1 is applicable except as follows.

29.2 Addition:

The microenvironment is pollution degree 3 unless the insulation is enclosed or located so that it is unlikely to be exposed to pollution during normal use of the appliance.

30 Resistance to heat and fire

This clause of Part 1 is applicable except as follows.

30.1 Addition:

The ball pressure test is carried out on the exposed parts of the underside of the appliance at a temperature of at least 105 °C.

30.2.2 Not applicable.

30.101 Appliances shall not incorporate combustible material likely to propagate a fire originating from a cooking surface.

Compliance is checked as follows.

Grease filters of non-metallic material ~~intended for the absorption of grease~~ shall meet the requirements specified in ISO 9772 for category HBF material, except that the thickness of the specimen is that of the filter. It ~~may~~ can be necessary to support the specimen during the test.

Lamp diffusers and external air-guides having a total mass not exceeding 0,35 kg are subjected to the glow-wire test of IEC 60695-2-11 at a temperature of 550 °C. The glow-wire test is not carried out on parts of material classified at least HB40 according to IEC 60695-11-10, provided that the test sample was no thicker than the relevant part.

*Other **accessible parts** of the enclosure are subjected to the needle-flame test of **normative Annex E**.*

*Internal air-ducts and parts within them, such as fans and odour extraction filters, are subjected to the needle-flame test of **normative Annex E**, droplets of material being ignored.*

NOTE Odour extraction filters are generally placed downstream from the grease filter. **18**

*Grease filters are not subjected to the needle-flame test of **normative Annex E**.*

31 Resistance to rusting

This clause of Part 1 is applicable.

32 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.

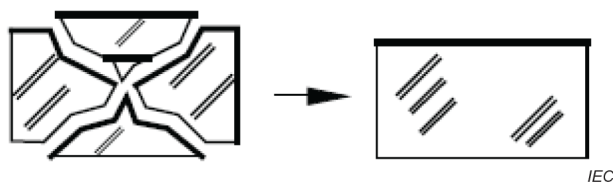
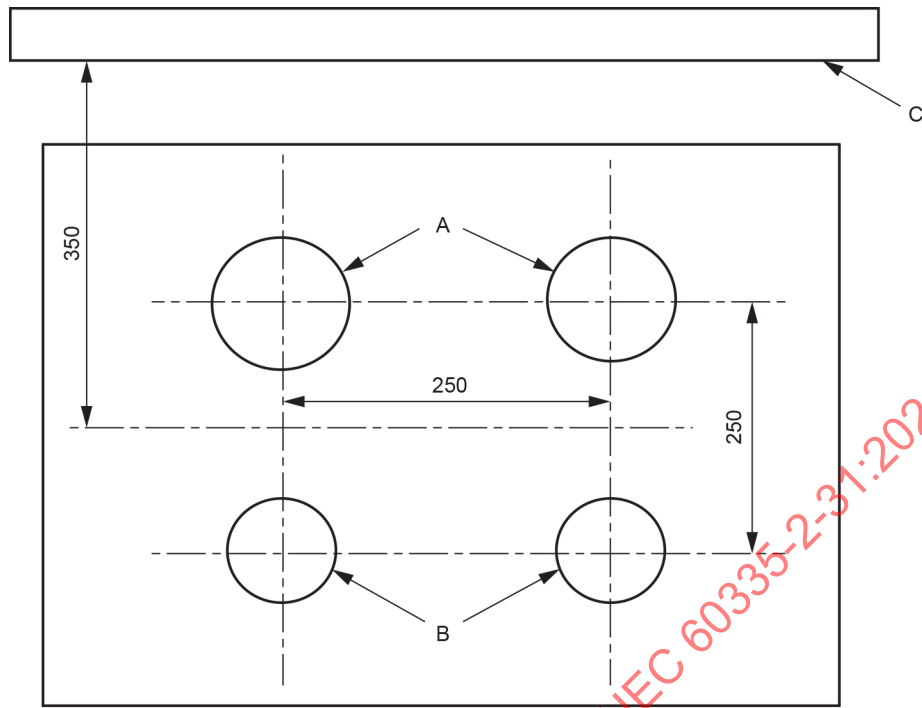


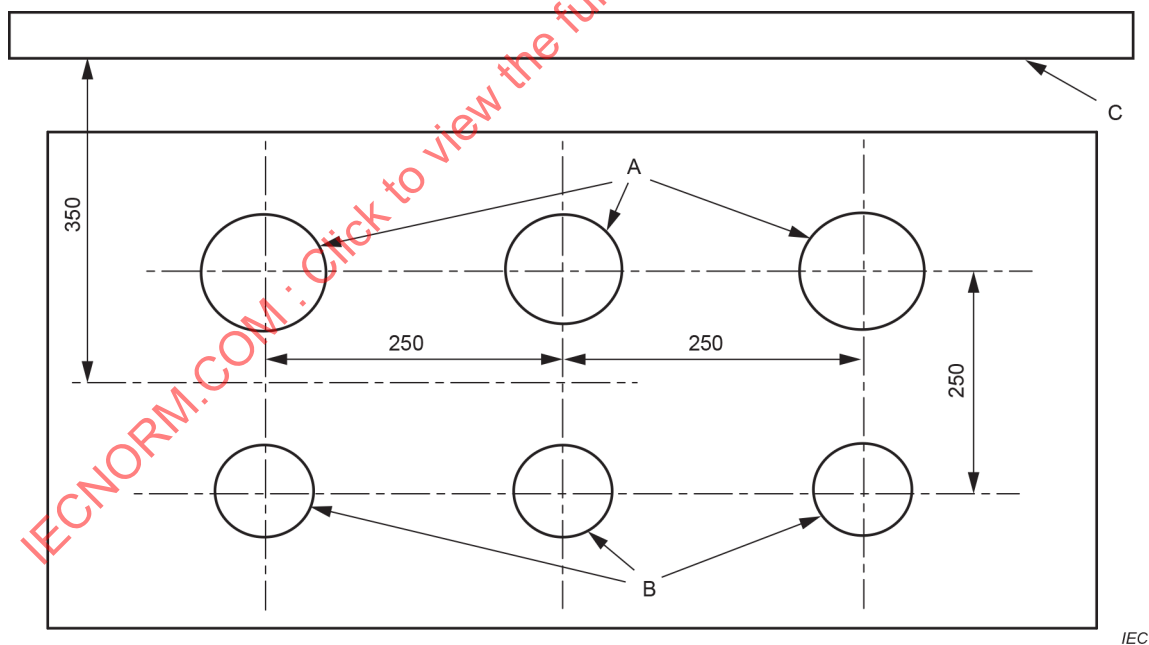
Figure 101 – "Replace any cracked protective shield" pictogram

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Dimensions in millimetres



a) Four element hob

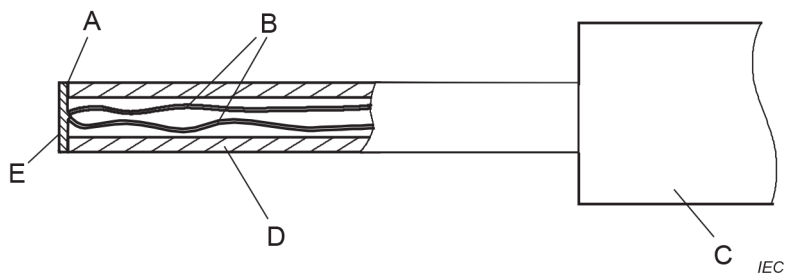


b) Six element hob

Key

- A electric hob element, 2 kW
- B electric hob element, 1,5 kW
- C vertical support for the range hood

Figure 101 102 – Hob layout for the heating test



Key

- A adhesive
- B thermocouple wires 0,3 mm diameter to IEC 60584-1 Type K
- 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 flat tinned copper disc: 5 mm diameter, 0,5 mm thick with flat contact face

Figure 103 – Probe for measuring surface temperatures

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Annexes

The annexes of Part 1 are applicable.

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Bibliography

The bibliography of Part 1 is applicable except as follows.

Addition:

IEC 60050-845:2020, *International Electrotechnical Vocabulary (IEV) – Part 845: Lighting*

IEC 60335-2-65, *Household and similar electrical appliances – Safety – Part 2-65: Particular requirements for air-cleaning appliances*

IEC 60335-2-99, *Household and similar electrical appliances – Safety – Part 2-99: Particular requirements for commercial electric hoods*

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List of comments

- 1 This revision is for alignment with IEC 60335-1:2020.
 - 2 This revision is for alignment with IEC 60335-1:2020.
 - 3 This marking is updated to refer to the IEC 60417 symbol.
 - 4 The construction requiring this marking is as specified in Subclause 22.104.
 - 5 Appliances located above 1,8 m are not considered to be within reach of children up to 14 years in age according to IEC Guide 117, so test probe 18 is not applied.
 - 6 Because down-draft systems are not mounted above the hob surface, they are placed as close to the hob surface as allowed by the installation instructions.
 - 7 Limits on the temperature rise of external accessible surfaces are introduced to address the risk of thermal injury from contact with external accessible surfaces based on IEC Guide 117 for Temperatures of touchable hot surfaces.
 - 8 This revision maintains the requirements for appliance outlets and socket outlets as specified in IEC 60335-1:2020.
 - 9 Limits on the temperature rise of external accessible surfaces are introduced to address the risk of thermal injury from contact with external accessible surfaces based on IEC Guide 117 for Temperatures of touchable hot surfaces.
 - 10 This addition clarifies that these parts are considered to be held for short periods only.
 - 11 This revision is for alignment with IEC 60335-1:2020.
 - 12 This revision is for alignment with IEC 60335-1:2020.
 - 13 As defined, detachable parts include those parts that are removed or opened in accordance with the instructions, even if a tool is required for their removal. However, if a tool is required to remove the filter, it is not removed when determining accessibility of dangerous moving parts.
 - 14 Appliances located above 1,8 m are not considered to be within reach of children up to 14 years in age according to IEC Guide 117, so test probe 18 is not applied.
 - 15 Where the tests of Subclauses 19.11.4.1 to 19.11.4.7 are referenced for evaluation of electronic circuits relied upon for compliance with requirements typically in Clauses 20, 22 and 24, this requirement is added to align with Subclause 19.11.4 of the Part 1 standard.
 - 16 The sharp edge tester specified in IEC TR 62854 is to be used in case of doubt to determine if an exposed edge is considered to be a sharp edge.
 - 17 Additional requirements for remote operation were added to IEC 60335-1:2020. However, the remote operation requirements in Subclauses 22.40, 22.49 and 22.51 are not applicable for appliances covered by this Part 2 standard because they are not considered to give rise to a hazard when operated continuously, automatically or remotely.
 - 18 The note is added to differentiate between odour extraction filters and grease filters.
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INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Household and similar electrical appliances – Safety –
Part 2-31: Particular requirements for range hoods and other cooking fume
extractors**

**Appareils électrodomestiques et analogues – Sécurité –
Partie 2-31: Exigences particulières pour les hottes de cuisine et autres
extracteurs de fumées de cuisson**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –****Part 2-31: Particular requirements for range hoods
and other cooking fume extractors**

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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IEC 60335-2-31 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This sixth edition cancels and replaces the fifth 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, 22.8, 22.101, 22.102);

- c) update of the installation requirements for the heating test to include down-draft systems (11.2);
- d) addition of accessible surface temperature limits (11.3, 11.8);
- e) introduction of IEC TR 62854 to determine compliance in case of doubt (22.14);
- f) clarification of remote operation requirements for range hoods and other cooking fume extraction appliances (22.40, 22.49, 22.51);
- g) clarification of 30.101 with respect to grease filters and odour extraction filters.

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

Draft	Report on voting
61/7090/FDIS	61/7105/RVD

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

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/standardsdev/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 range hoods and other cooking fume extractors.

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 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.

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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.

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 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 and generic standards 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 2-31: Particular requirements for range hoods and other cooking fume extractors

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of electric **range hoods** and other cooking fume extractors intended for installing above, beside, behind or under household cooking ranges, hobs and similar cooking appliances, their **rated voltage** being not more than 250 V including direct current (DC) supplied appliances.

NOTE 101 The cooking appliance can be supplied by electricity or other fuels, such as gas.

Appliances not intended for normal household use but that nevertheless can be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, 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 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 incorporating electrostatic air filters, IEC 60335-2-65 also applies;
- 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 authorities responsible for buildings and similar authorities.

This standard does not apply to

- appliances intended for commercial purposes (IEC 60335-2-99);
- 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 applies except as follows:

Addition:

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

IEC 61231, *International lamp coding system (ILCOS)*

IEC TR 62854:2014, *Sharp edge testing apparatus and test procedure for lighting equipment – Tests for sharpness of edge*

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

3.5 Definitions relating to types of appliances

3.5.101

range hood

motor-operated appliance intended to collect contaminated air from above a hob

Note 1 to entry: The filtered air may be discharged back into the room or ducted away.

3.5.102

down-draft system

ventilation system intended for installation adjacent to household cooking ranges, hobs and similar cooking appliances that draws contaminated air down into an internal exhaust duct

Note 1 to entry: The filtered air may be discharged back into the room or ducted away.

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:*

For **down-draft systems**, the tests specified in Clauses 11 and 13 are carried out at an ambient temperature of $40\text{ °C} \pm 2\text{ °C}$.

5.10 *Addition:*

Appliances are not connected to a duct.

5.101 Down-draft systems intended to be installed close to a cooking surface are tested as specified for **range hoods**.

6 Classification

This clause of Part 1 is applicable.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 Addition:

Appliances shall be marked on or near the lampholder with the maximum power input of replaceable lamps as follows:

lamp max W

The word "lamp" may be replaced by symbol IEC 60417-5012 (2002-10).

If the voltage rating of the lamp is less than the **rated voltage** of the appliance, the voltage rating of the lamp shall also be marked on or near the lampholder.

Range hoods intended to be used with self-shielded tungsten halogen lamps or metal halide lamps only shall be marked with symbol IEC 60417-6030 (2009-11) or with the substance of the following:

Use only with self-shielded tungsten halogen lamps or self-shielded metal halide lamps.

Range hoods incorporating a protective shield required in 22.104 shall be marked with the pictogram of Figure 101 or with the substance of the following:

Replace any cracked protective shield

7.6 Addition:



[symbol IEC 60417-6030
(2009-11)]

use only with self-shielded
lamp

7.12 Addition:

The instructions shall state the substance of the following:

- there shall be adequate ventilation of the room when the range hood is used at the same time as appliances burning gas or other fuels (not applicable to appliances that only discharge the air back into the room);
- the details concerning the method and frequency of cleaning;
- there is a fire risk if cleaning is not carried out in accordance with the instructions;
- do not flambé under the range hood;
- CAUTION: Accessible parts may become hot when used with cooking appliances.

The instructions shall state the substance of the following:

- lamp type, shape description and image;
- rated wattage of the intended lamp;
- max wattage of a potential replacement lamp;
- rated voltage or voltage range of lamp or, for pre-heat starting fluorescent lamps starter replacement details;
- the type of lamp cap;
- nominal dimension(s) of lamp.

An ILCOS D code (standard version code specified in IEC 61231) including both the letter and figure sections is considered to provide the required instructions.

NOTE 101 Some examples of the required marking using the ILCOS D code are as follows:

Example 1 (for tungsten filament lamps – incandescent lamps):

Use type lamp (or use in alternative type lamp) IAA/C-40-220/240-E27-60 (ILCOS D code in according to standard IEC 61231).

- Tungsten filament lamp – clear pear-shaped lamp
- Max wattage: 40 W
- Voltage range: 220 V – 240 V
- Dimensions: Nominal diameter 60 mm.

Example 2 (for fluorescent lamps):

Use type lamp (or use in alternative type lamp) FBRI-23-230/240-E14-82/127 (ILCOS D code in according to standard IEC 61231).

- Self-ballasted fluorescent reflector lamp – Integral induction type ballast
- Max wattage: 23 W
- Voltage range: 230 V – 240 V
- Dimensions: diameter 82 mm/length 127 mm.

If symbol IEC 60417-6030 (2009-11) or the pictogram of Figure 101 is used, its meaning shall be explained.

7.12.1 Addition:

The installation instructions shall include the substance of the following:

- the air must not be discharged into a flue that is used for exhausting fumes from appliances burning gas or other fuels (not applicable to appliances that only discharge the air back into the room);
- the minimum distance between the supporting surface for the cooking vessels on the hob and the lowest part of the **range hood**. (When the **range hood** is located above a gas appliance, this distance shall be at least 65 cm. If the instructions for installation for the gas hob specify a greater distance, this has to be taken into account. The distance of 65 cm can be reduced for
 - non-combustible parts of **range hoods**, or
 - parts operating at **safety extra low voltage**,provided these parts do not give access to **live parts** if deformed);
- regulations concerning the discharge of air have to be fulfilled.

If the **range hood** is only intended to be installed over a hob with no more than four hob elements, this shall be stated.

The installation instructions for **range hoods** with **accessible metallic enclosures** of **class II construction** shall include details that indicate the location and maximum permitted lengths for any fixing or mounting screw or other fixing device that penetrates into the **range hood** to attach an accessory such as a fascia or duct fitting.

Where fixing or mounting screws or other fixing devices are used, that penetrate into the **range hood** with an **accessible metallic enclosure** of **class II construction**, to attach an accessory, the instructions shall indicate the required location of these screws or fixing devices and include the substance of the following warning.

Warning: Failure to install the screws or fixing device in accordance with these instructions may result in electrical hazards

The warning shall be in the same part of the instructions that include details of how to mount the equipment.

The installation instructions for **down-draft systems** shall also include the following:

- for **down-draft systems** not intended to be used with gas hobs, the substance of the following warning:

CAUTION: This appliance is not intended to be used with gas hobs.

- for **down-draft systems** intended to be used together with gas hobs, details of the gas appliance.

NOTE 101 This information can only be given if the **down-draft system** has been tested in conjunction with the designated appliance.

7.14 Addition:

The height of symbol IEC 60417-6030 (2009-11) and the pictogram of Figure 101 shall be at least 15 mm.

7.15 Addition:

The marking for maximum power input of a replaceable lamp shall be visible during replacement of the lamp.

Symbol IEC 60417-6030 (2009-11) or the marking "Use only with self-shielded tungsten halogen lamps or self-shielded metal halide lamps" shall be visible during replacement of the lamp. The pictogram of Figure 101 or the marking "Replace any cracked protective shield" shall be visible when the appliance is installed as in normal use.

8 Protection against access to live parts

This clause of Part 1 is applicable except as follows.

8.1.1 Addition:

Test probe 18 is not applicable to parts that according to the instructions are intended to be installed more than 1,8 m above the floor.

8.2 Addition:

After the removal of **detachable parts** during **user maintenance**, the **basic insulation** of internal wiring may be touched provided it is electrically equivalent to the insulation of cords complying with IEC 60227 or IEC 60245.

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.

11.2 Replacement:

Built-in appliances are installed in accordance with the instructions. Other appliances are fixed to a vertical support.

The appliance is located above a hob so that the distance between its lowest point and the hob surface is the minimum distance specified in the instructions. For **down-draft systems**, the appliance is located at the minimum distance to the cooking surface specified in the instructions. A vertical side wall extending to the top of the **range hood** is placed at right angles to the vertical support, 100 mm from one side of the **range hood**. Dull black-painted plywood approximately 20 mm thick is used for the vertical support, the side wall and for the installation of **built-in range appliances**.

If the **range hood** or **down-draft system** is intended to be used with a hob having four hob elements, the hob shall have two 2 kW electric elements at the back and two 1,5 kW electric elements at the front.

If the **range hood** or **down-draft system** is intended to be used with a hob having six hob elements, the hob shall have three 2 kW electric elements at the back and three 1,5 kW electric elements at the front.

The layout of the hobs used in the tests is shown in Figure 102. The hobs are centrally situated with respect to the **range hood**.

Vessels, without lids, containing water are placed on the hob elements. The diameter of the vessels is approximately equal to that of the hob elements. The hob elements are operated to maintain vigorous boiling.

The appliance is also tested without the hob elements in operation.

For appliances delivered for installation with the control and filter boxes separate from the fan, the duct length on input and output shall be 4 times fan diameter. However, if the fan is intended to be mounted on the external structure of a building, the fan is not ducted on the output side.

11.3 Addition:

Where the external **accessible surfaces** are suitably flat and access permits, then the test probe of Figure 103 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 Modification:

Replace the first paragraph with the following:

Appliances are operated until steady conditions are established.

11.8 Modification:

Replace the first paragraph with the following:

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

Addition:

*The temperature rise limit for external enclosures, external **accessible surfaces** and wood does not apply when the hob elements are in operation. When the appliance is tested without the hob elements in operation, only the temperature rises of the external enclosures, external **accessible surfaces** and wood are measured, the temperature rise limit for wood being 65 K.*

Temperature rises of lampholders and the enclosure are also determined with the fan motor switched off and lights switched on. Enclosure temperatures are not measured within a distance of 35 mm around the lamp glass regardless of its shape.

*For **down-draft systems**, the temperature rises shall not exceed the values given in Table 3 reduced by 15 K.*

The temperature rise of handles or grips of vents and air shutters shall not exceed the value specified in Table 3 for surfaces of handles, knobs, grips and similar parts which are held for short periods only in normal use.

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

Surface	Temperature rise of external accessible surfaces ^{a, b} K
Bare metal	42
Coated metal ^c	49
Glass and ceramic	56
Plastic and plastic coating > 0,4 mm ^{d, e}	62
NOTE The temperature rise limits of handles, knobs, grips, keyboards, keypads and similar parts are specified in Table 3.	
^a Within 25 mm from air outlets, the above limits are increased by 5 K. ^b Temperature rise on surfaces that are inaccessible to a 75 mm diameter probe having a hemispherical end. ^c Metal is considered coated when a coating having a minimum thickness of 90 µm made of enamel, powder or non-substantially plastic coating is used. ^d The temperature rise limit of plastic also applies for plastic material having a metal finish of thickness less than 0,1 mm. ^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.	

12 Charging of metal-ion batteries

This clause of Part 1 is applicable.

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.

15 Moisture resistance

This clause of Part 1 is applicable except as follows.

15.1.1 Addition:

*The outer part of fans intended to be installed in the external structure of a building is subjected to the test of IEC 60529:1989, 14.2.4 a), the part of the fan not mounted on the outside surface being protected against spray from the oscillating tube. The test is carried out with the appliance in the rest position and then in operation while supplied at **rated voltage**, shutters or similar devices being in the open position.*

15.2 Addition:

*A vessel with 0,5 l of the spillage solution is poured steadily over a period of 15 s over critical parts of a **down-draft system**.*

16 Leakage current and electric strength

This clause of Part 1 is applicable.

17 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.

18 Endurance

This clause of Part 1 is not applicable.

19 Abnormal operation

This clause of Part 1 is applicable except as follows.

19.1 Addition:

Appliances are also subjected to the test of 19.101.

19.13 Addition:

During the test of 19.101, the temperature of the motor windings shall not exceed the values specified in Table 8. The appliance shall not deform to such an extent that parts fall from it.

19.101 *Appliances are operated above a hob as specified in Clause 11, but without vessels and with only the two outer hob elements at the back being energized.*

20 Stability and mechanical hazards

This clause of Part 1 is applicable except as follows.

20.2 Addition:

Filters are considered to be **detachable parts** and shall be removed unless a **tool** is required for removal.

Test probe 18 is not applicable to parts that according to the instructions are intended to be installed more than 1,8 m above the floor.

20.101 If a part of a **range hood** or **down-draft system** can be moved automatically, there shall be no risk of entrapment or injury.

Compliance is checked by the following test.

*The appliance is operated at **rated voltage** and is operated to open and close the driven part.*

The driven part shall

- a) *decelerate to a speed lower than 15 mm/s in the last 50 mm of the movement, as it approaches any position in which entrapment can occur; or*
- b) *when IEC 61032 probe 32 is placed at any potential entrapment point across the width and height of the opening:*

- stop and reverse direction before contacting the probe; or
- if the probe is touched by the driven part:
 - not exert a force on the probe exceeding a value of 100 N; or
 - not subject the probe to a shear force.

If compliance relies on the operation of an **electronic circuit**, the test is repeated under the following conditions applied separately:

- the fault conditions in a) to g) of 19.11.2, are applied one at a time to the **electronic circuit**;
- the electromagnetic phenomena tests of 19.11.4.2 and 19.11.4.5 are applied in turn to the appliance. The tests are carried out with surge protective devices disconnected, unless they incorporate spark gaps.

The driven part shall

- a) decelerate to a speed lower than 15 mm/s in the last 50 mm of the movement, as it approaches any position in which entrapment can occur; or
- b) when IEC 61032 probe 32 is placed at any potential entrapment point across the width and height of the opening:
 - stop and reverse direction before contacting the probe; or
 - if the probe is touched by the driven part:
 - not exert a force on the probe exceeding a value of 100 N; or
 - not subject the probe to a shear force.

21 Mechanical strength

This clause of Part 1 is applicable.

22 Construction

This clause of Part 1 is applicable except as follows.

22.8 Replacement:

For appliances having compartments to which access is gained during **user maintenance**, the electrical connections, other than those of **interconnection cords** intended to be disconnected before cleaning or **user maintenance**, shall be arranged so that they are not subjected to pulling during cleaning or other **user maintenance**.

Compliance is checked by inspection and by the following test.

Detachable parts are removed. It shall not be possible to grasp wiring that can be touched in such a way that the connections are subjected to undue stress.

In case of doubt, the wiring is subjected to a pull of 10 N, applied without jerks three times in succession, in the most unfavourable direction that can occur during **user maintenance**. There shall be no appreciable displacement of the connections.

22.14 Modification:

Replace the last paragraph with the following:

Compliance is checked by inspection and, in case of doubt, by the test described in IEC TR 62854:2014, Clause 2 and Clause 5.

22.40 *Addition:*

Range hoods and other cooking fume extractors are considered to be appliances that can operate continuously, automatically or remotely without giving rise to a hazard.

22.49 Not applicable.

22.51 Not applicable.

22.101 Appliances shall be constructed so that they can be fixed securely to a wall or other support. Brackets and similar means shall be of metal that shall not be liable to creep or deform. Keyhole slots, hooks and similar means, without any further means to prevent the appliance from being inadvertently lifted off the support, are not considered to be adequate means for fixing the appliance securely.

Compliance is checked by inspection.

22.102 Appliances shall be constructed so that parts liable to accumulate deposits of grease can be cleaned without moving adjacent cooking appliances. Parts located behind a filter are not considered to be parts that have to be cleaned.

Compliance is checked by inspection.

22.103 Where fixing or mounting screws or other fixing devices that penetrate into the **range hood** with an **accessible metallic enclosure** of **class II construction** are used to attach an accessory to the **range hood**, there shall be

- pre-formed holes in the **range hood** enclosure and accessory if it is supplied by the **range hood** manufacturer, or
- markings on the **range hood** enclosure and accessory if it is supplied by the **range hood** manufacturer to indicate the correct location for the screws or fixing devices.

Where markings are used, the markings shall be clearly visible and legible during installation.

Where the fixing or mounting screw or other fixing device penetrates into the **range hood** enclosure in areas where **live parts** are present, there shall be no hazard due to screws or fixing devices piercing the wiring or insulation of **live parts** or making contact with **live parts** inside the **range hood**.

Live parts not separated from the fixing or mounting screw or other fixing device by an earthed metal barrier shall not be in an area behind the screw or other fixing device location within the envelope of a cylinder having a diameter of 10 mm and a length of 50 mm.

Compliance is checked by inspection and the following test, if applicable.

*Directly behind the entry point into the **range hood** enclosure of any fixing or mounting screw, or other fixing device, an area encompassed by a 10 mm diameter cylinder of 50 mm length is determined. The axis of the cylinder being aligned with the axis of the entry point that is normal to the surface of the **range hood** enclosure. There shall be no **live parts** within the envelope of the cylinder.*

*Additionally, **live parts** that can encroach on the envelope of the cylinder shall have a force of 5 N applied in the direction towards the cylinder. The **live parts** shall not enter the envelope of the cylinder.*

22.104 **Range hoods** intended to incorporate tungsten halogen lamps or metal halide lamps shall be fitted with a protective shield. For tungsten halogen lamps, the shield shall be of glass.

This requirement is not applicable for **range hoods** intended to be used with self-shielded tungsten halogen lamps or metal halide lamps only.

Compliance is checked by inspection.

23 Internal wiring

This clause of Part 1 is applicable.

24 Components

This clause of Part 1 is applicable.

25 Supply connection and external flexible cords

This clause of Part 1 is applicable.

26 Terminals for external conductors

This clause of Part 1 is applicable.

27 Provision for earthing

This clause of Part 1 is applicable except as follows.

27.1 Addition:

Metal parts that become accessible during **user maintenance** are considered to be **accessible metal parts**.

28 Screws and connections

This clause of Part 1 is applicable.

29 Clearances, creepage distances and solid insulation

This clause of Part 1 is applicable except as follows.

29.2 Addition:

The microenvironment is pollution degree 3 unless the insulation is enclosed or located so that it is unlikely to be exposed to pollution during normal use of the appliance.

30 Resistance to heat and fire

This clause of Part 1 is applicable except as follows.

30.1 Addition:

The ball pressure test is carried out on the exposed parts of the underside of the appliance at a temperature of at least 105 °C.

30.2.2 Not applicable.

30.101 Appliances shall not incorporate combustible material likely to propagate a fire originating from a cooking surface.

Compliance is checked as follows.

Grease filters of non-metallic material shall meet the requirements specified in ISO 9772 for category HBF material, except that the thickness of the specimen is that of the filter. It can be necessary to support the specimen during the test.

Lamp diffusers and external air-guides having a total mass not exceeding 0,35 kg are subjected to the glow-wire test of IEC 60695-2-11 at a temperature of 550 °C. The glow-wire test is not carried out on parts of material classified at least HB40 according to IEC 60695-11-10, provided that the test sample was no thicker than the relevant part.

*Other **accessible parts** of the enclosure are subjected to the needle-flame test of normative Annex E.*

Internal air-ducts and parts within them, such as fans and odour extraction filters, are subjected to the needle-flame test of normative Annex E, droplets of material being ignored.

NOTE Odour extraction filters are generally placed downstream from the grease filter.

Grease filters are not subjected to the needle-flame test of normative Annex E.

31 Resistance to rusting

This clause of Part 1 is applicable.

32 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.

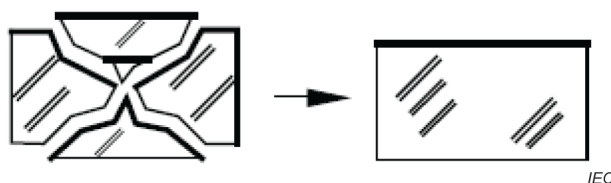
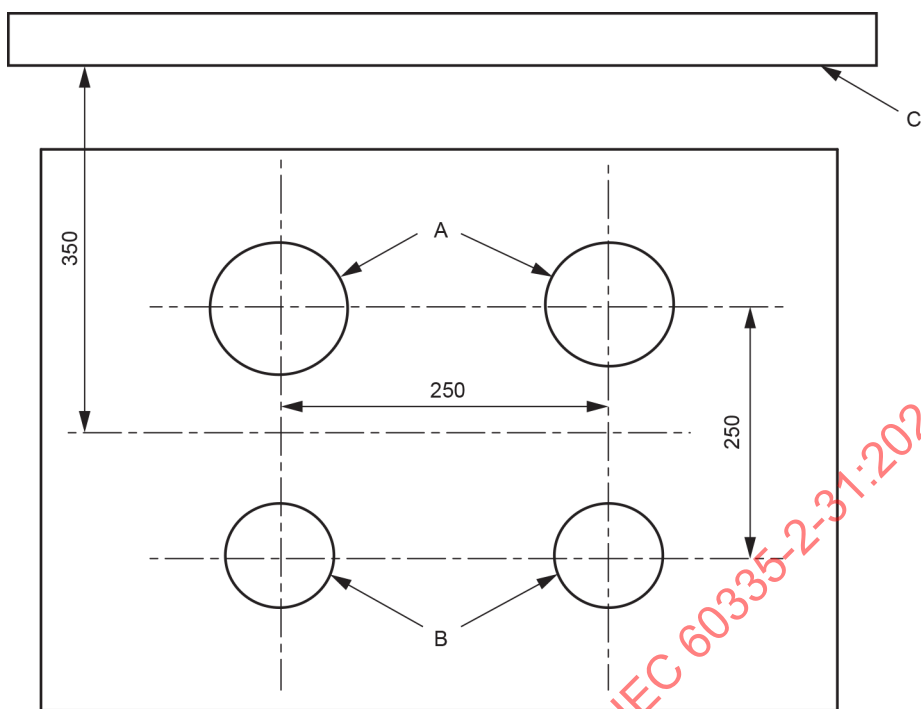
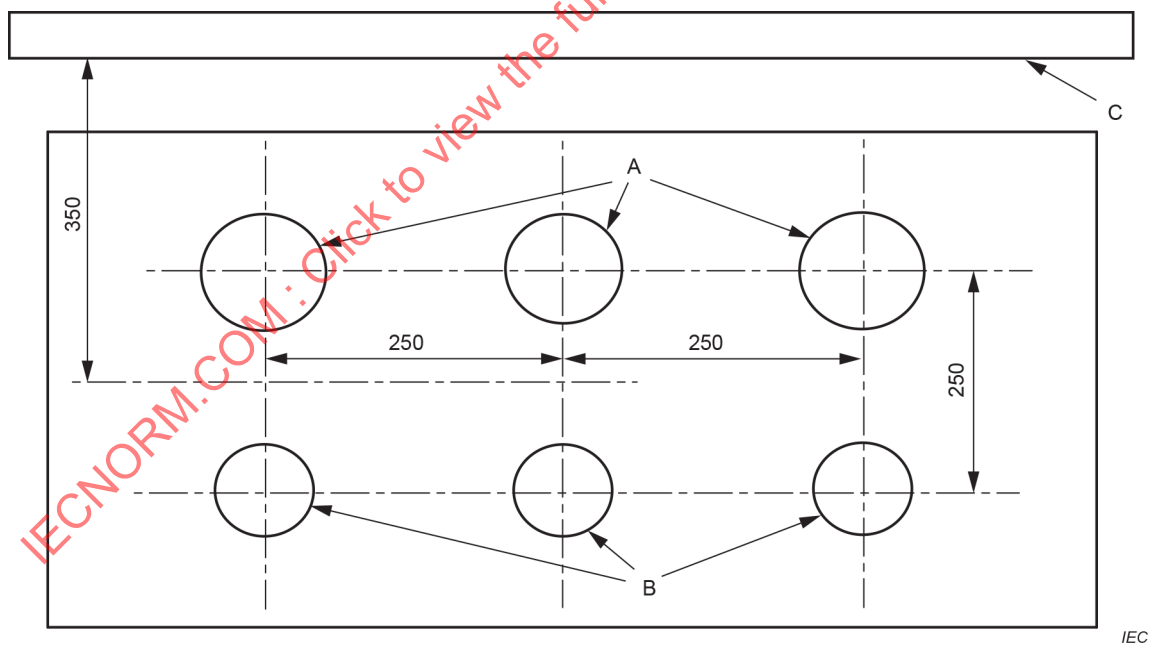


Figure 101 – "Replace any cracked protective shield" pictogram

Dimensions in millimetres



a) Four element hob

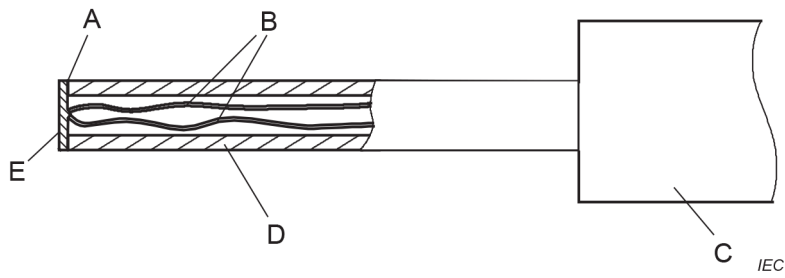


b) Six element hob

Key

- A electric hob element, 2 kW
- B electric hob element, 1,5 kW
- C vertical support for the **range hood**

Figure 102 – Hob layout for the heating test



Key

- A adhesive
- B thermocouple wires 0,3 mm diameter to IEC 60584-1 Type K
- 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 flat tinned copper disc: 5 mm diameter, 0,5 mm thick with flat contact face

Figure 103 – Probe for measuring surface temperatures

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Annexes

The annexes of Part 1 are applicable.

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Bibliography

The bibliography of Part 1 is applicable except as follows.

Addition:

IEC 60050-845:2020, *International Electrotechnical Vocabulary (IEV) – Part 845: Lighting*

IEC 60335-2-65, *Household and similar electrical appliances – Safety – Part 2-65: Particular requirements for air-cleaning appliances*

IEC 60335-2-99, *Household and similar electrical appliances – Safety – Part 2-99: Particular requirements for commercial electric hoods*

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

**APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES –
SÉCURITÉ –****Partie 2-31: Exigences particulières pour les hottes de cuisine
et autres extracteurs de fumées de cuisson****AVANT-PROPOS**

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L'IEC 60335-2-31 a été établie par le comité d'études 61 de l'IEC: Sécurité des appareils électrodomestiques et analogues. Il s'agit d'une Norme internationale.

Cette sixième édition annule et remplace la cinquième édition parue en 2012, l'Amendement 1:2016 et l'Amendement 2:2018. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) le texte a été aligné sur l'IEC 60335-1:2020;
- b) certaines notes ont été converties en texte normatif (Article 1, 22.8, 22.101, 22.102);
- c) les exigences d'installation pour l'essai de chauffage ont été mises à jour afin d'inclure les systèmes d'extraction à flux descendant (11.2) ;
- d) des limites de température ont été ajoutées pour les surfaces accessibles (11.3, 11.8);
- e) une référence à l'IEC TR 62854 a été ajoutée afin de déterminer la conformité en cas de doute (22.14) ;
- f) les exigences de fonctionnement à distance des hottes de cuisine et autres appareils d'extraction des fumées de cuisson ont été clarifiées (22.40, 22.49, 22.51) ;
- g) la vérification des filtres à graisse et des filtres pour l'extraction des odeurs a été clarifiée (30.101).

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
61/7090/FDIS	61/7105/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/standardsdev/publications.

Une liste de toutes les parties de la série IEC 60335, publiées sous le titre général *Appareils électrodomestiques et analogues – Sécurité*, se trouve sur le site web de l'IEC.

La présente partie 2 doit être utilisée conjointement avec la dernière édition de l'IEC 60335-1 et ses amendements sauf si cette édition l'exclut. Dans ce cas, la dernière édition qui n'exclut pas la présente partie 2 est utilisée. Elle a été établie sur la base de la sixième édition (2020) de cette norme.

NOTE 1 L'expression "la Partie 1" utilisée dans la présente norme fait référence à l'IEC 60335-1.

La présente partie 2 complète ou modifie les articles correspondants de l'IEC 60335-1, de façon à transformer cette publication en norme IEC: Exigences particulières pour les hottes de cuisine et autres extracteurs de fumées de cuisson.

Lorsqu'un paragraphe particulier de la Partie 1 n'est pas mentionné dans cette partie 2, ce paragraphe s'applique pour autant que cela soit raisonnable. Lorsque la présente norme mentionne "addition", "modification" ou "remplacement", le texte correspondant de la Partie 1 doit être adapté en conséquence.

NOTE 2 Le système de numérotation suivant est utilisé:

- les paragraphes, tableaux et figures qui s'ajoutent à ceux de la Partie 1 sont numérotés à partir de 101;
- à l'exception de celles qui sont dans un nouveau paragraphe ou de celles qui concernent des notes de la Partie 1, les notes sont numérotées à partir de 101, y compris celles des articles ou paragraphes qui sont remplacés;
- les annexes qui sont ajoutées sont désignées AA, BB, etc.

NOTE 3 Les caractères d'imprimerie suivants sont utilisés:

- exigences: caractères romains;
- *modalités d'essais: caractères italiques*;
- notes: petits caractères romains.

Les termes en **gras** dans le texte sont définis à l'Article 3. Lorsqu'une définition concerne un adjectif, l'adjectif et le nom associé figurent également en gras.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous webstore.iec.ch dans les données relatives au document recherché. À cette date, le document sera

- reconduit,
- supprimé, ou
- révisé.

NOTE 4 L'attention des Comités nationaux est attirée sur le fait que les fabricants d'appareils et les organismes d'essai peuvent avoir besoin d'une période transitoire après la publication d'une nouvelle publication IEC, ou d'une publication amendée ou révisée, pour fabriquer des produits conformes aux nouvelles exigences et pour adapter leurs équipements aux nouveaux essais ou aux essais révisés.

Le comité recommande que le contenu de cette publication soit adopté pour application nationale (obligatoire) au plus tôt 12 mois et au plus tard 36 mois après la date de publication.

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INTRODUCTION

Il a été considéré en établissant cette Norme internationale que l'exécution de ses dispositions était confiée à des personnes expérimentées et ayant une qualification appropriée.

La présente norme reconnaît le niveau de protection internationalement accepté contre les dangers électriques, mécaniques, thermiques, liés au feu et au rayonnement des appareils, lorsqu'ils fonctionnent comme en usage normal en tenant compte des instructions du fabricant. Elle couvre également les situations anormales auxquelles on peut s'attendre dans la pratique et elle tient compte de la façon dont les phénomènes électromagnétiques peuvent affecter le fonctionnement sûr des appareils.

Les documents de recommandations concernant l'application des exigences de sécurité pour les appareils peuvent être consultés dans les documents de support du CE 61, accessibles sur le site web de l'IEC à l'adresse:

<https://www.iec.ch/tc61/supportingdocuments>

Cette information est donnée à l'intention des utilisateurs de la présente Norme internationale et n'a pas pour objet de remplacer le texte normatif de la présente norme.

Cette norme tient compte autant que possible des exigences de l'IEC 60364, de façon à rester compatible avec les règles d'installation quand l'appareil est raccordé au réseau d'alimentation. Cependant, des règles nationales d'installation peuvent être différentes.

Si un appareil relevant du domaine d'application de la présente norme comporte également des fonctions couvertes par une autre partie 2 de l'IEC 60335, la partie 2 correspondante est appliquée à chaque fonction séparément, dans la limite du raisonnable. Si cela est applicable, on tient compte de l'influence d'une fonction sur les autres fonctions.

Lorsqu'une partie 2 ne comporte pas d'exigences complémentaires pour couvrir les risques traités dans la Partie 1, la Partie 1 s'applique.

NOTE 1 Cela signifie que les comités d'études responsables pour les parties 2 ont déterminé qu'il n'était pas nécessaire de spécifier des exigences particulières pour l'appareil en question en plus des exigences générales.

Cette norme est une norme de famille de produits traitant de la sécurité d'appareils et a préséance sur les normes horizontales et génériques couvrant le même sujet.

NOTE 2 Les publications horizontales et les normes génériques, les publications fondamentales de sécurité et les publications groupées de sécurité couvrant un risque ne sont pas applicables parce qu'elles ont été prises en considération lorsque les exigences générales et particulières ont été étudiées pour la série de normes IEC 60335.

Un appareil conforme au texte de la présente norme ne sera pas nécessairement jugé conforme aux principes de sécurité de la norme si, lorsqu'il est examiné et soumis aux essais, il apparaît qu'il présente d'autres caractéristiques qui compromettent le niveau de sécurité visé par ces exigences.

Un appareil utilisant des matériaux ou présentant des modes de construction différents de ceux décrits dans les exigences de cette norme peut être examiné et essayé en fonction de l'objectif poursuivi par ces exigences et, s'il est jugé pratiquement équivalent, il peut être estimé conforme aux principes de sécurité de la norme.

NOTE 3 Les normes traitant des aspects non relatifs à la sécurité des appareils électrodomestiques sont:

- les normes IEC publiées par le comité d'études 59 concernant les méthodes de mesure d'aptitude à la fonction;
- les normes CISPR 11 et CISPR 14-1, ainsi que les normes applicables de la série IEC 61000-3 concernant les émissions électromagnétiques;
- la norme CISPR 14-2 concernant l'immunité électromagnétique;
- les normes IEC publiées par le comité d'études 111 concernant l'environnement.

APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – SÉCURITÉ –

Partie 2-31: Exigences particulières pour les hottes de cuisine et autres extracteurs de fumées de cuisson

1 Domaine d'application

L'article de la Partie 1 est remplacé par le texte suivant.

La présente partie de l'IEC 60335 traite de la sécurité des **hottes de cuisine** électriques et autres extracteurs électriques de fumées de cuisson destinés à être installés au-dessus, à côté, derrière ou sous des cuisinières, tables de cuisson ou appareils de cuisson analogues, dont la **tension assignée** est inférieure ou égale à 250 V, y compris les appareils alimentés en courant continu.

NOTE 101 Les appareils de cuisson peuvent être alimentés à l'électricité ou avec d'autres combustibles, tels que le gaz.

Les appareils non destinés à un usage domestique normal, mais qui peuvent néanmoins constituer une source de danger pour le public, tels que les appareils destinés à être utilisés par des utilisateurs non avertis dans des magasins, chez des artisans et dans des fermes, sont compris dans le domaine d'application de la présente norme.

Dans la mesure du possible, la présente norme traite des dangers courants que présentent les appareils et auxquels sont exposés tous les individus situés à l'intérieur et autour de l'habitation. Cependant, elle ne tient en général pas compte:

- des personnes (y compris des enfants) dont
 - les capacités physiques, sensorielles ou mentales; ou
 - le manque d'expérience et de connaissanceles empêchent d'utiliser l'appareil en toute sécurité sans surveillance ou instruction;
- des enfants qui jouent avec l'appareil.

L'attention est attirée sur le fait que

- pour les appareils qui comportent des filtres à air électrostatiques, l'IEC 60335-2-65 s'applique également;
- pour les appareils destinés à être utilisés dans des véhicules ou à bord de navires ou d'avions, des exigences supplémentaires peuvent être nécessaires;
- dans de nombreux pays, des exigences supplémentaires sont spécifiées par les organismes nationaux de la santé, par les organismes nationaux responsables de la protection des travailleurs, par les organismes nationaux responsables du bâtiment et par des organismes similaires.

La présente norme ne s'applique pas:

- aux appareils destinés à des usages commerciaux (IEC 60335-2-99);
- aux appareils destinés à être utilisés dans des locaux qui présentent des conditions particulières, telles que la présence d'une atmosphère corrosive ou explosive (poussière, vapeur ou gaz).

2 Références normatives

L'article de la Partie 1 s'applique, avec l'exception suivante.

Addition:

IEC 60584-1, *Couples thermoélectriques – Partie 1: Spécifications et tolérances en matière de FEM*

IEC 61231, *Système international de codification des lampes (ILCOS)*

IEC TR 62854:2014, *Appareil et mode opératoire pour la vérification des bords vifs des appareils d'éclairage – Essais de tranchant des bords*

3 Termes et définitions

L'article de la Partie 1 s'applique, avec les exceptions suivantes.

3.5 Définitions relatives aux types d'appareils

3.5.101

hotte de cuisine

appareil à moteur qui a pour fonction de capter l'air vicié au-dessus d'une table de cuisson

Note 1 à l'article: L'air filtré peut être renvoyé dans la pièce ou évacué.

3.5.102

système d'extraction à flux descendant

système de ventilation destiné à être installé à côté de cuisinières, de tables de cuisson ou d'appareils de cuisson analogues, et qui aspire l'air vicié vers le bas dans un conduit interne

Note 1 à l'article: L'air filtré peut être renvoyé dans la pièce ou évacué.

4 Exigences générales

L'article de la Partie 1 s'applique.

5 Conditions générales d'essais

L'article de la Partie 1 s'applique, avec les exceptions suivantes.

5.7 *Addition:*

Pour les **systèmes d'extraction à flux descendant**, les essais spécifiés aux Articles 11 et 13 sont effectués à une température ambiante de $40\text{ °C} \pm 2\text{ °C}$.

5.10 *Addition:*

Les appareils ne sont pas raccordés à un conduit.

5.101 Les **systèmes d'extraction à flux descendant** destinés à être installés près de la surface de cuisson sont soumis à l'essai comme cela est spécifié pour les **hottes de cuisine**.

6 Classification

L'article de la Partie 1 s'applique.

7 Marquage et instructions

L'article de la Partie 1 s'applique, avec les exceptions suivantes.

7.1 Addition:

Les appareils doivent porter, sur la douille ou à proximité de celle-ci, un marquage de la puissance maximale des lampes remplaçables comme suit:

puissance maximale de la lampe W

Le mot "lampe" peut être remplacé par le symbole IEC 60417-5012 (2002-10).

Si les caractéristiques assignées de tension de la lampe sont inférieures à la **tension assignée** de l'appareil, les caractéristiques doivent également être marquées sur la douille ou à proximité de celle-ci.

Les **hottes de cuisine** destinées à être utilisées uniquement avec des lampes tungstène-halogène à écran intégré ou des lampes aux halogénures métalliques à écran intégré doivent porter un marquage sur lequel est apposé le symbole IEC 60417-6030 (2009-11) ou qui comporte en substance le texte suivant:

Utiliser uniquement avec des lampes tungstène-halogène à écran intégré ou des lampes aux halogénures métalliques à écran intégré.

Les **hottes de cuisine** qui incluent un écran de protection comme cela est exigé en 22.104 doivent porter un marquage sur lequel est apposé le pictogramme de la Figure 101 ou qui comporte en substance le texte suivant:

Remplacer tout écran de protection fissuré

7.6 Addition:



[symbole IEC 60417-6030
(2009-11)]

utiliser uniquement avec une
lampe à écran intégré

7.12 Addition:

Les instructions doivent comporter en substance les indications suivantes:

- la pièce doit être correctement ventilée lorsque la hotte de cuisine est utilisée simultanément avec des appareils fonctionnant au gaz ou avec d'autres combustibles (ne s'applique pas aux appareils qui renvoient uniquement l'air dans la pièce);
- des informations détaillées concernant la méthode et la fréquence de nettoyage;
- il existe un risque d'incendie si le nettoyage n'est pas effectué conformément aux instructions;
- ne pas flamber d'aliments sous la hotte de cuisine;
- ATTENTION: Les parties accessibles peuvent devenir chaudes lorsque l'appareil est utilisé avec des appareils de cuisson.

Les instructions doivent comporter en substance les indications suivantes:

- type de lampe, description de la forme et image;
- puissance assignée de la lampe prévue;
- puissance maximale d'une lampe de rechange possible;
- tension assignée ou plage de tensions de la lampe ou, pour les lampes à fluorescence à amorçage avec préchauffage, informations détaillées concernant le remplacement du starter;
- type de culot de la lampe;
- dimension(s) nominale(s) de la lampe.

Un code ILCOS (International Lamp Coding System) D (code de version normalisé spécifié dans l'IEC 61231) incluant à la fois des lettres et des chiffres est considéré comme fournissant les instructions exigées.

NOTE 101 La liste suivante fournit quelques exemples des marquages exigés utilisant le code ILCOS D:

Exemple 1 (pour les lampes à filament de tungstène – lampes à incandescence):

Utiliser une lampe type (ou utiliser une lampe d'un autre type) IAA/C-40-220/240-E27-60 (code ILCOS D conformément à la norme IEC 61231).

- Lampe à filament de tungstène – lampe claire en forme de poire
- Puissance maximale: 40 W
- Plage de tensions: 220 V – 240 V
- Dimensions: Diamètre nominal 60 mm.

Exemple 2 (pour les lampes à fluorescence):

Utiliser une lampe type (ou utiliser une lampe d'un autre type) FBRI-23-230/240-E14-82/127 (code ILCOS D conformément à la norme IEC 61231).

- Lampe à fluorescence à ballast intégré et à réflecteur – ballast type inductif intégré
- Puissance maximale: 23 W
- Plage de tensions: 230 V – 240 V
- Dimensions: diamètre 82 mm/longueur 127 mm.

Si le symbole IEC 60417-6030 (2009-11) ou le pictogramme de la Figure 101 est utilisé, sa signification doit être expliquée.

7.12.1 Addition:

Les instructions d'installation doivent comporter en substance les indications suivantes:

- l'air ne doit pas être envoyé dans un conduit utilisé pour évacuer les fumées des appareils fonctionnant au gaz ou avec d'autres combustibles (ne s'applique pas aux appareils qui renvoient uniquement l'air dans la pièce);
- la distance minimale à respecter entre la surface support des récipients de cuisson de la table de cuisson et la partie la plus basse de la **hotte de cuisine**. (Lorsque la **hotte de cuisine** est placée au-dessus d'un appareil à gaz, cette distance doit être d'au moins 65 cm. Si les instructions d'installation pour la table de cuisson à gaz spécifient une distance plus grande, celle-ci doit être prise en compte. Cette distance de 65 cm peut être réduite pour:
 - les parties non combustibles des **hottes de cuisine**; ou
 - les parties qui fonctionnent à **très basse tension de sécurité**;sous réserve que ces parties ne donnent pas accès aux **parties actives** si elles sont déformées);
- les réglementations concernant l'évacuation de l'air doivent être respectées.

Si la **hotte de cuisine** est destinée à être installée uniquement au-dessus d'une table de cuisson comportant quatre foyers de cuisson au maximum, cela doit être indiqué.

Les instructions d'installation pour les **hottes de cuisine** équipées d'**enveloppes métalliques accessibles** de la **classe II** doivent comporter des détails indiquant l'emplacement et les longueurs maximales autorisées pour toute vis de fixation ou de montage ou pour tout dispositif de fixation qui pénètre dans la **hotte de cuisine** pour fixer un accessoire de type bordure ou raccord de conduit.

Lorsque des vis de fixation ou de montage ou d'autres dispositifs de fixation sont utilisés et pénètrent dans les **hottes de cuisine** équipées d'**enveloppes métalliques accessibles** de la **classe II** pour fixer un accessoire, les instructions doivent indiquer l'emplacement exigé pour ces vis ou dispositifs de fixation et comporter en substance la mise en garde suivante.

Mise en garde: Le non-respect des instructions d'installation des vis ou dispositifs de fixation peut entraîner des dangers électriques

La mise en garde doit se trouver dans la partie des instructions qui contient les informations détaillées concernant le montage de l'appareil.

Les instructions d'installation pour les **systèmes d'extraction à flux descendant** doivent également comporter:

- pour les **systèmes d'extraction à flux descendant** non destinés à être utilisés avec des tables de cuisson à gaz, la mise en garde suivante en substance:

ATTENTION: Cet appareil n'est pas destiné à être utilisé avec des tables de cuisson à gaz.

- pour les systèmes d'extraction à flux descendant destinés à être utilisés avec des tables de cuisson à gaz, les informations détaillées concernant l'appareil à gaz.

NOTE 101 Cette information ne peut être donnée que si le **système d'extraction à flux descendant** a été soumis à l'essai conjointement avec l'appareil indiqué.

7.14 Addition:

La hauteur du symbole IEC 60417-6030 (2009-11) et du pictogramme de la Figure 101 doit être d'au moins 15 mm.

7.15 Addition:

Le marquage de la puissance maximale d'une lampe remplaçable doit être visible lors du remplacement de la lampe.

Le symbole IEC 60417-6030 (2009-11) ou le marquage "Utiliser uniquement avec des lampes tungstène-halogène à écran intégré ou des lampes aux halogénures métalliques à écran intégré" doit être visible lors du remplacement de la lampe. Le pictogramme de la Figure 101 ou le marquage "Remplacer tout écran de protection fissuré" doit être visible quand l'appareil est installé comme en usage normal.

8 Protection contre l'accès aux parties actives

L'article de la Partie 1 s'applique, avec les exceptions suivantes.

8.1.1 Addition:

Le calibre d'essai 18 n'est pas applicable sur les parties dont les instructions précisent qu'elles sont destinées à être installées à plus de 1,8 m du sol.