

# 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 ELECTROTECHNICAL COMMISSION

### HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

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

#### FOREWORD

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**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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://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](http://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 ~~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 knowledge prevents 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:

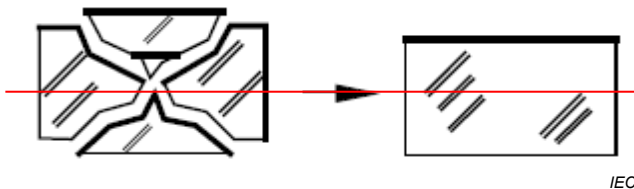
Replace any cracked protective shield **4**

### 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~~

### 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.