

AS/NZS 60335.2.31:2020



Australian/New Zealand Standard™

# Household and similar electrical appliances — Safety

Part 2.31: Particular requirements for range hoods and other cooking fume extractors (IEC 60335-2-31 Ed 5.2, MOD)



AS/NZS 60335.2.31:2020

This Joint Australian/New Zealand Standard™ was prepared by Joint Technical Committee EL-002, Safety of Household and Similar Electrical Appliances and Small Power Transformers and Power Supplies. It was approved on behalf of the Council of Standards Australia on 13 November 2020 and by the New Zealand Standards Approval Board on 7 October 2020.

This Standard was published on 27 November 2020.

The following are represented on Committee EL-002:

- Association of Accredited Certification Bodies
- Australian Industry Group
- National Retailers Association (Australia)
- Business New Zealand
- Consumer Electronic Suppliers Association, Australia
- Consumers' Federation of Australia
- Electrical Regulatory Authorities, Australia
- Electrical Compliance Testing Association
- Electrical consultants
- Engineers Australia
- JAS-ANZ
- Testing Interests New Zealand
- WorkSafe, New Zealand
- New Zealand Electric Fence Energizer Manufacturers' Standards Group

This Standard was issued in draft form for comment as DR 20010.

### **Keeping Standards up-to-date**

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:

[www.standards.org.au](http://www.standards.org.au)

[www.standards.govt.nz](http://www.standards.govt.nz)

ISBN 978 1 76113 086 1

Australian/New Zealand Standard™

# Household and similar electrical appliances — Safety

## Part 2.31: Particular requirements for range hoods and other cooking fume extractors (IEC 60335-2-31 Ed 5.2, MOD)

Originated in Australia as AS 3310 — 1984.  
Final Australian edition AS 3310 — 1992.  
Originated in New Zealand as NZS 6306.2:1992.  
Jointly revised and redesignated AS/NZS 3350.2.31:1997.  
Second edition AS/NZS 3350.2.31:2001.  
Jointly revised and redesignated AS/NZS 60335.2.31:2004.  
Jointly revised and redesignated AS/NZS 60335.2.31:2013.  
Jointly revised and redesignated AS/NZS 60335.2.31:2020.



© IEC Geneva Switzerland 2020 — All rights reserved

© Standards Australia Limited/the Crown in right of New Zealand, administered by the New Zealand Standards Executive 2020

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of either the IEC or the publisher, unless otherwise permitted under the Copyright Act 1968 (Cth) or the Copyright Act 1994 (New Zealand). If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please see the contact details on the back cover or the contact us page of the website for further information.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

---

**AS/NZS 60335.2.31:2020**

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –**

**Part 2.31: Particular requirements for range hoods and other cooking fume extractors**

**Foreword**

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-002- Safety of Household and Similar Electrical Appliances and Small Power Transformers to supersede AS/NZS 60335.2.31:2013 two years from the date of publication. Regulatory authorities that reference this Standard in regulation may apply these amendment requirements at a different time. Users of this Standard should consult with these authorities to confirm their requirements.

The objective of this Standard is to provide manufacturers, designers, regulatory authorities, testing laboratories and similar organizations with safety requirements designed to give the user protection against hazards that might occur during normal operation and abnormal operation of the appliance and which may be used as the basis for approval for sale or for connection to the electricity supply mains in Australia and New Zealand.

The principal changes in this edition as compared with the 2013 edition of AS/NZS 60335.2.31 and its amendments are as follows (minor changes are not listed).

- the National variation for height of installation of range hoods has been modified to delete the different between installation above a gas appliance and installation above an electric appliance (7.12.1).

This standard is an adoption with national modifications of the fifth edition of IEC 60335-2-31, *Household and similar electrical appliances – Safety – Part 2-31: Particular requirements for range hoods and other cooking fume extractors* including its amendment 1 (2016) and amendment 2 (2018). It has been varied as indicated to take account of Australian and New Zealand conditions

This part 2 has to be used in conjunction with the latest edition of AS/NZS 60335.1 Household and similar electrical appliances – Safety – Part 1: General requirements and its Amendments. It was established on the basis of AS/NZS 60335.1:2020.

This part 2 supplements or modifies the corresponding clauses of AS/NZS 60335.1 so as to convert it into the Australian/New Zealand Standard: Safety 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 of Part 1 is to be adapted accordingly.

NOTE 1 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.;
- subclauses, notes and annexes that are additional to those in the IEC standard are prefixed with the letters AZ.

NOTE 2 The following print types are used:

- requirements: in roman type;

COPYRIGHT

- *test specifications: in italic type;*
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3.

p NOTE 3 In this document, p is used in the margin to indicate instructions for preparing a consolidated version.

The essential safety requirements in AS/NZS 3820<sup>1</sup> that could be applicable to requirements for range hoods and other cooking fume extractors are covered by this standard.

The national variations to IEC 60335-2-31 Ed 5.2 form the Australian and New Zealand national variations for purposes of the IECEE scheme for recognition of results of testing to standards for safety of electrical equipment (the CB scheme).

---

<sup>1</sup> AS/NZS 3820 *Essential safety requirements for electrical equipment*

The text of the International Standard IEC 60335-2-31 Ed 5.2 was approved as a joint Australia/New Zealand Standard with the agreed national variations as given below.

### AUSTRALIAN NATIONAL VARIATIONS

The following national variations to this Part 2 are additional to those listed in the national variations to AS/NZS 60335.1:2020.

#### 7 Marking and instructions

- p **7.12** *Replace the first dashed item in the first paragraph of the addition by the following:*

Range hoods and other cooking fume extractors may adversely affect the safe operation of appliances burning gas or other fuels (including those in other rooms) due to back flow of combustion gases. These gases can potentially result in carbon monoxide poisoning. After installation of a range hood or other cooking fume extractor, the operation of flued gas appliances should be tested by a competent person to ensure that back flow of combustion gases does not occur.

- p **7.12.1** *Replace the second dashed item in the first paragraph of the addition by the following*

– the minimum distance between the supporting surface for the cooking vessels on the hob and the lowest part of the **range hood**. This distance shall be at least 60 cm. If the instructions for installation specify a greater distance, this has to be taken into account. The distance of 60 cm can be reduced for

- non-combustible parts of **range hoods**, except grease filters, or
- parts operating at **safety extra low voltage**,

provided these parts do not give access to **live parts** if deformed;

### NEW ZEALAND NATIONAL VARIATIONS

The following national variations to this Part 2 are additional to those listed in the national variations to AS/NZS 60335.1:2020.

#### 7 Marking and instructions

- p **7.12** *Replace the first dashed item in the first paragraph of the addition by the following:*

Range hoods and other cooking fume extractors may adversely affect the safe operation of appliances burning gas or other fuels (including those in other rooms) due to back flow of combustion gases. These gases can potentially result in carbon monoxide poisoning. After installation of a range hood or other cooking fume extractor, the operation of open flued gas appliances should be tested by a competent person to ensure that back flow of combustion gases does not occur.

- p **7.12.1** *Replace the second dashed item in the first paragraph of the addition by the following*

– the minimum distance between the supporting surface for the cooking vessels on the hob and the lowest part of the **range hood**. This distance shall be at least 60 cm. If the instructions for installation specify a greater distance, this has to be taken into account. The distance of 60 cm can be reduced for

- non-combustible parts of **range hoods**, except grease filters, or
- parts operating at **safety extra low voltage**,

provided these parts do not give access to **live parts** if deformed;

**Annex ANZ  
(normative)**  
**Normative references to international publications with their corresponding joint  
Australia/New Zealand publications**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by national variations the relevant joint Australia/New Zealand publications applies if the national variations are needed to ensure the safety of the appliance for Australia/New Zealand conditions. These international publications are indicated by (mod). If an international publication is not so indicated, then either it or the listed Australia/New Zealand publication may be used.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>AS/NZS</u>	<u>Year</u>
IEC 61231		<i>International lamp coding system (ILCOS)</i>	61231	



## CONTENTS

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

## 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

#### **DISCLAIMER**

**This Consolidated version is not an official IEC Standard and has been prepared for user convenience. Only the current versions of the standard and its amendment(s) are to be considered the official documents.**

**This Consolidated version of IEC 60335-2-31 bears the edition number 5.2. It consists of the fifth edition (2012-11) [documents 61/4453/FDIS and 61/4506/RVD], its amendment 1 (2016-04) [documents 61/5110/FDIS and 61/5140/RVD] and its amendment 2 (2018-08) [documents 61/5565/CDV and 61/5647A/RVC]. The technical content is identical to the base edition and its amendments.**

**This Final version does not show where the technical content is modified by amendments 1 and 2. A separate Redline version with all changes highlighted is available in this publication.**

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

The principal changes in this edition as compared with the fourth edition of IEC 60335-2-31 are as follows (minor changes are not listed):

- added requirements to address range hood installation (7.12.1 and 22.103);
- added construction requirement to address risk of entrapment in rangehoods or down-draft system (20.101);
- deleted reference to ISO 13732-1 from Bibliography.

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

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments. It was established on the basis of the fifth edition (2010) of that standard.

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

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Safety requirements for 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 the base publication and its amendments will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

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

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, can be found on the IEC website.

The following differences exist in the countries indicated below.

- 7.12: Warnings are required to be marked on the range hood (USA).
- 7.12.1: Additional requirements are specified for range hoods intended to be placed above gas hobs (Sweden).
- 8.2: The insulation of internal wiring need not be equivalent to IEC 60227 or IEC 60245 (USA).
- 11.2: The test method is different (USA).
- 19.101: The test method is different (USA).
- 20.2: The addition applies only to disposable filters (USA).
- 22.101: Additional fixing means are not required if screws can be tightened in keyhole slots (USA).
- 22.102: Parts located behind a filter are considered to be parts that have to be cleaned (Sweden).
- 30.101: The method of evaluating filters is different (USA).

## INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules may differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE 2 Horizontal and generic standards covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

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

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard 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.

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 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 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 61231, *International lamp coding system (ILCOS)*