

Australian/New Zealand Standard™

**Household and similar electrical  
appliances—Safety**

**Part 2.67: Particular requirements for  
floor treatment machines, for  
commercial use**



### **AS/NZS 60335.2.67:2013**

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. It was approved on behalf of the Council of Standards Australia on 21 May 2013 and by the Council of Standards New Zealand on 5 June 2013.

This Standard was published on 20 June 2013.

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The following are represented on Committee EL-002:

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Consumers' Federation of Australia  
Electrical Regulatory Authorities, Australia  
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*This Standard was issued in draft form for comment as DR 12930.*

# Australian/New Zealand Standard™

## Household and similar electrical appliances—Safety

### Part 2.67: Particular requirements for floor treatment machines, for commercial use

Originated as AS/NZS 60335.2.67:2002.  
Jointly revised and redesignated AS/NZS 60335.2.67:2013.  
Reissued incorporating Amendment No. 1 (November 2014).  
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## STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

## AS/NZS 60335.2.67:2013

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –

## Part 2.67: Particular requirements for floor treatment machines, for commercial use

## 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 60335.2.67:2002 three years from the date of publication.

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 text of IEC 60335-2-67 Ed 4, prepared by IEC Technical Committee SC 61J, was submitted to the Standards Australia/Standards New Zealand Combined Procedure (dual public comment and committee vote) for adoption of the IEC standard as a Standards Australia/Standards New Zealand joint standard.

The principal changes in this edition as compared with the 2002 edition of AS/NZS 60335.2.67 and its amendments are as follows (minor changes are not listed).

- the title has been changed for better distinction with regard to AS/NZS 60335.2.72;
- the scope has been revised editorially to avoid misunderstandings;
- terms and definitions has been revised with regard to the requirements revised;
- the standard has been revised in general and updated regarding state-of-the-art, as far as necessary, in particular some changes have been made to Clauses 15, 22 and 25;
- a new Annex BB (LPG requirements) was added;
- a new Annex CC 'Emission of acoustical noise' was added; and
- a new Annex DD 'Emission of vibration' was added.

This Standard is an adoption with national modifications of the fourth edition of IEC 60335-2-67, *Household and similar electrical appliances – Safety – Part 2-67: Particular requirements for floor treatment machines, for commercial use*. It has been varied as indicated to take account of Australian and New Zealand conditions.

The text of IEC 60335-2-67 edition 4 amendment 1, prepared by IEC Technical Committee SC 61J, was submitted to the Standards Australia/Standards New Zealand Combined Procedure (dual public comment and committee vote) for adoption as an amendment to the Standards Australia/Standards New Zealand joint standard AS/NZS 60335.2.67:2013.

This Standard incorporates Amendment No. 1 (November 2014) which applied to formatting of the IEC text in the “including IEC text” version only, and Amendment No.2 (June 2017). The changes required by the amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected. Where an application date other than immediate is applicable to an amendment the date of application

(DOA) and the Date of withdrawal (DOW), if relevant is indicated by the marginal bar against the part affected. Unless otherwise indicated, the application dates of the changes introduced by Amendment No. 2 is (30 June 2019).

A2  
DOA  
30/6/19

This standard is an adoption with national modifications of the fourth edition of IEC 60335-2-67, *Household and similar electrical appliances – Safety – Part 2-67: Particular requirements for floor treatment machines, for commercial use* including its amendment 1 (2016). 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 60335.1:2011.

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 floor treatment machines, for commercial use.

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;

*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 floor treatment machines, for commercial use are covered by this standard.

A2  
DOW  
30/6/19

The national variations to IEC 60335-2-67 Ed 4 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).

A2  
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30/6/19

The national variations to IEC 60335-2-67 Ed 4.1 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).

There are no national variations from the IEC Standard from which this standard is adopted, other than those listed in the national variations to AS/NZS 60335.1.

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

A2  
DOW  
30/6/19

The text of the International Standard IEC 60335-2-67 Ed 4 was approved as a joint Australia/New Zealand Standard with the agreed national variations as given below.

A2  
DOA  
30/6/19

The text of the International Standard IEC 60335-2-67 Ed 4.1 was approved as a joint Australia/New Zealand Standard with the agreed national variations as given below.

### AUSTRALIAN NATIONAL VARIATIONS

There are no national variations to this Part 2 other than those listed in the national variations to AS/NZS 60335.1:2011.

### NEW ZEALAND NATIONAL VARIATIONS

There are no national variations to this Part 2 other than those listed in the national variations to AS/NZS 60335.1:2011.

### 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 60312-1,       |             | <i>Vacuum cleaners for household use –<br/>Part 1: Dry vacuum cleaners – Methods<br/>for measuring the performance</i>             |               |             |
| ISO 6344-2,        |             | <i>Coated abrasives – Grain size analysis –<br/>Part 2: Determination of grain size<br/>distribution of macrogrits P12 to P220</i> |               |             |

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

#### Part 2-67: Particular requirements for floor treatment machines, for commercial use

#### 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.
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- 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.
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#### **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 60335-2-67 bears the edition number 4.1. It consists of the fourth edition (2012-03) [documents 61J/489/FDIS and 61J/498/RVD] and its amendment 1 (2016-04) [documents 61J/628/FDIS and 61J/638/RVD]. The technical content is identical to the base edition and its amendment.**

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

International Standard IEC 60335-2-67 has been prepared by subcommittee 61J: Electrical motor-operated cleaning appliances for commercial use, of IEC technical committee 61: Safety of household and similar electrical appliances.

The principal changes in this edition as compared with the third edition of IEC 60335-2-67 are as follows (minor changes are not listed):

- the title has been changed for better distinction with regard to IEC 60335-2-72;
- the scope has been revised editorially to avoid misunderstandings;
- terms and definitions has been revised with regard to the requirements revised;
- the standard has been revised in general and updated regarding state-of-the-art, as far as necessary, in particular some changes have been made to Clauses 15, 22 and 25;
- a new Annex BB (LPG requirements) was added;
- a new Annex CC 'Emission of acoustical noise' was added; and
- a new Annex DD 'Emission of vibration' was added.

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 floor treatment machines for commercial use.

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.

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.

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 Amendment 1 be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

The committee has decided that the contents of the base publication and its amendment 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.

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## 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 2-67: Particular requirements for floor treatment machines, for commercial use

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of powered floor treatment machines intended for commercial indoor or outdoor use for the following applications:

- scrubbing,
- wet or dry pick-up,
- polishing and dry buffing,
- application of wax, sealing products and powder based detergents,
- shampooing,
- stripping, grinding and scarifying

of floors with an artificial surface.

Their cleaning motion is more lateral or periodic than linear.

NOTE 101 By contrast, the cleaning motion of machines covered by IEC 60335-2-72 is more linear than lateral or periodic.

NOTE 102 This standard applies to machines for **commercial use**. The following list, although not comprehensive, gives an indication of locations that are included in the scope:

- public use areas such as hotels, schools, hospitals;
- industrial locations, for example factories and manufacturing shops;
- retail outlets, for example shops and supermarkets;
- business premises, for example offices and banks;
- all uses other than normal housekeeping purposes.

They are not equipped with a **traction drive**. The following power systems are covered:

- internal combustion engines,
- mains powered motors up to a **rated voltage** of 250 V for single-phase appliances and 480 V for other appliances,
- battery-powered motors.

Battery powered machines may be equipped with a built-in battery charger.

This standard does not apply to

- vacuum cleaners and water-suction cleaning appliances for household use (IEC 60335-2-2);
- floor treatment appliances for household use (IEC 60335-2-10);
- spray extraction machines for **commercial use** (IEC 60335-2-68);
- wet and dry vacuum cleaners, including power brush, for **commercial use** (IEC 60335-2-69);

- floor treatment machines with or without **traction drive**, for **commercial use** (IEC 60335-2-72);
- hand-held and transportable motor-operated electric **tools** (IEC 60745 series, IEC 61029 series, IEC 62841);
- machines designed for use in corrosive or explosive environments (dust, vapour or gas);
- machines designed for picking up hazardous dusts (as defined in IEC 60335-2-69), inflammable substances, or glowing particles;
- machines designed for use in vehicles or on board of ships or aircraft.

NOTE 103 Attention is drawn to the fact that in many countries, additional requirements on the safe use of the equipment covered can be specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities and similar authorities.

## 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

IEC 60312-1, *Vacuum cleaners for household use – Part 1: Dry vacuum cleaners – Methods for measuring the performance*

ISO 6344-2, *Coated abrasives – Grain size analysis – Part 2: Determination of grain size distribution of macrogrits P12 to P220*

## 3 Terms and definitions

This clause of Part 1 is applicable except as follows.

### 3.1.9 *Replacement:*

#### **normal operation**

conditions under which the machine is operated in normal use, as intended by the manufacturer

It denotes the load corresponding to the **rated power input** or the highest obtainable load of all particular loads of the various functions that can be operated at the same time according to the manufacturer's instructions.

Tanks of machines, if applicable, are filled before starting the operation to the highest level as indicated on the tank, or completely if no marking is provided.

Socket-outlets for accessories are loaded with a resistive load in accordance with the marking. Suction functions, if applicable, are switched on during operation.

The **normal operation** related to the operational functions is specified in 3.1.9.101 to 3.1.9.103.

**3.1.9.101** Scrubbing, stripping, grinding and scarifying machines are operated with the appropriate brushes or pads on a surface of hydraulically pressed concrete paving slabs (see Annex AA).

An alternative is a smooth concrete area of a surface consistency comparable with hydraulically pressed concrete paving slabs.

**3.1.9.102** Polishing and dry buffing machines are operated as follows.

PVC or comparable surfaces are considered to be suitable for establishing **normal operation**. The peak of input occurring during the drying process of the chemical applied to treat the

surface is not taken as **normal operation** but is averaged by extending measurements over a period of at least 10 min.

**3.1.9.103** Carpet shampooers are operated on a test surface consisting of a carpet, in accordance with IEC 60312-1, the carpet being fastened to the floor.

Prior to testing, the brush of the shampooing machine is conditioned by operating it for 15 min on a clean, dry concrete surface. After running on the concrete surface the brush is immersed in a shampoo solution for at least 30 min.

### **3.101**

#### **water-suction cleaning machine**

machine for applying and sucking up a water-based cleaning solution

### **3.102**

#### **motorized cleaning head**

hand-held or hand-guided cleaning device connected to the machine, with an integrated electrical motor

Note 1 to entry: The permanently attached main cleaning head is not regarded as a **motorized cleaning head**.

### **3.103**

#### **traction drive**

system used to propel the machine, e.g. by powered wheels

Traction by the effect of rotating brushes is not included

### **3.104**

#### **operator presence control**

##### **OPC**

control device that automatically interrupts the power, e.g. to a drive or an engine, when the **operator's** actuating force is removed

Note 1 to entry: Such devices may be, for example, continuous action controls ("hold-to-run" controls).

### **3.105**

#### **guard**

part of the machine specifically designed to provide protection by means of a physical barrier, such as, for example, a casing, a shield, a cover, a screen, a door, an enclosure or a fence; other parts of the machine that fulfil a primarily operational function, such as, for example, the frame of the machine, may also fulfil a protective function but are not referred to as **guards**

Note 1 to entry: Three main kinds of **guards** can be distinguished: fixed **guards**, interlocking moveable **guards** and adjustable **guards**. Interlocking movable **guards** are required where frequent access is envisaged, while fixed **guards** can be used where frequent access is not envisaged.

### **3.106**

#### **operator**

person installing, operating, adjusting, maintaining, cleaning or moving the machine

### **3.107**

#### **test solution**

solution which consists of 20 g of NaCl and 1 ml of a solution of 28 % by mass of dodecyl sodium sulphate in each 8 l of water

Note 1 to entry: The chemical designation of dodecyl sodium sulphate is  $C_{12}H_{25}NaSO_4$ .

### **3.108**

#### **commercial use**

intended use of machines covered by this standard, i.e. not intended for normal housekeeping purposes by private persons but which may be a source of danger to the public