

INTERNATIONAL STANDARD

IEC
60335-2-67

Third edition
2002-07

Household and similar electrical appliances – Safety –

Part 2-67: Particular requirements for floor treatment and floor cleaning machines, for industrial and commercial use

*Appareils électrodomestiques et analogues –
Sécurité –*

*Partie 2-67:
Règles particulières pour les machines de traitement et de
nettoyage des sols, à usage industriel et commercial*



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –****Part 2-67: Particular requirements for floor treatment
and floor cleaning machines, for industrial and commercial use**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

This part of International Standard IEC 60335 has been prepared by sub-committee 61J: Electrical motor-operated cleaning appliances for industrial use, of IEC technical committee 61: Safety of household and similar electrical appliances.

This third edition cancels and replaces the second edition published in 1997 and its amendment 1 (2000). It constitutes a technical revision.

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

FDIS	Report on voting
61J/127/FDIS	61J/132/RVD

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

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 fourth edition (2001) 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 electric floor treatment and floor cleaning machines, for industrial and 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.

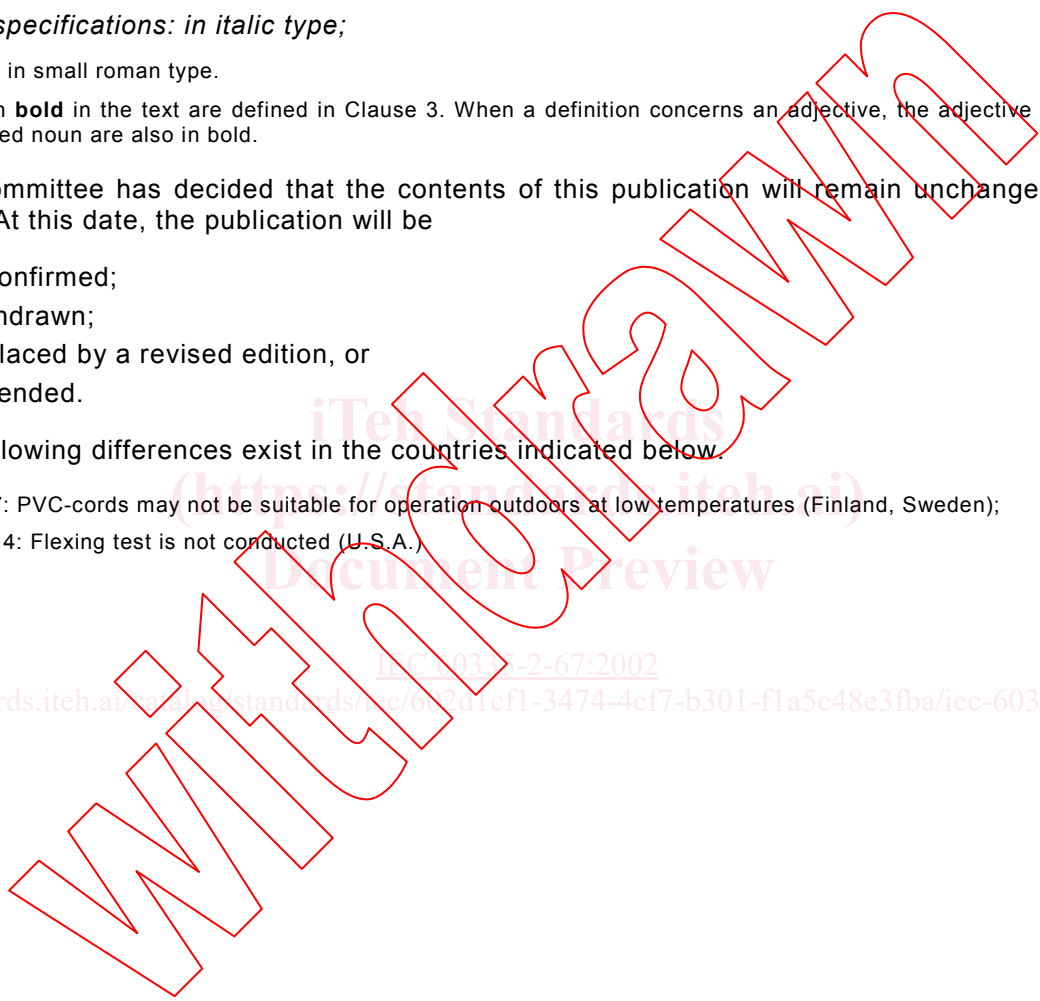
Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

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

The following differences exist in the countries indicated below.

- 25.7: PVC-cords may not be suitable for operation outdoors at low temperatures (Finland, Sweden);
- 25.14: Flexing test is not conducted (U.S.A.)



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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.

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.

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.

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.

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HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-67: Particular requirements for floor treatment and floor cleaning machines, for industrial and commercial use

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric **motor-operated appliances** primarily designed for industrial and commercial use, with or without attachments, including appliances incorporating wet and/or dry suction, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances. Such appliances may be used for floor polishing (including waxing and buffing), scrubbing and grinding, scarifying and carpet shampooing.

NOTE 101 Commercial uses are for example for use in hotels, schools, hospitals, factories, shops and offices for other than normal housekeeping purposes.

Appliances incorporating wet and/or dry suction shall also meet the appropriate requirements for industrial vacuum cleaners.

This standard also applies to machines handling hazardous dust such as asbestos or liquids for which additional national requirements might apply.

It is also applicable to appliances making use of other forms of energy for the motor; but it is necessary that their influence is taken into consideration.

NOTE 102 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may 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 water supply authorities and similar authorities.

NOTE 103 This standard does not apply to

- appliances for household use to which IEC 60335-2-10 applies;
- spray extraction appliances (IEC 60335-2-68);
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (vapour or gas).
- audio, video and similar electronic apparatus (IEC 60065);
- appliances for medical purposes (IEC 60601);
- hand-held motor-operated electric tools (IEC 60745);
- personal computers and similar equipment (IEC 60950);
- transportable motor-operated electric tools (IEC 61029).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60312, *Vacuum cleaners for household use – Methods of measuring the performance*

IEC 60335-2-69, *Household and similar electrical appliances – Safety – Part 2-69: Particular requirements for wet and dry vacuum cleaners, including power brush, for industrial and commercial use*

3 Definitions

This clause of Part 1 is applicable except as follows.

3.1.9 Replacement:

normal operation

the load, except for suction, or the highest obtainable load of all the particular loads of the various functions that can be operated at the same time according to the manufacturer's instructions.

The operational functions for various types are given in 3.1.9.101 to 3.1.9.104.

3.1.9.101 Scrubbing, scarifying, grinding machines are operated with the appropriate brushes on a surface of hydraulically pressed concrete paving slabs (see annex AA).

NOTE 101 Concrete scrubbing is considered to be the heaviest load.

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

3.1.9.102 Dry and wet pick-up machines are operated according to IEC 60335-2-69.

3.1.9.103 Polishing and dry buffing machines are operated as follows.

PVC-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 shall not be taken as **normal operation** but shall be averaged by extending measurements over a period of at least 10 min.

3.1.9.104 Carpet shampooers are operated on a test surface consisting of a carpet, in accordance with IEC 60312, the carpet being fastened to the floor. The brush of the shampooing machine has, prior to testing, to be conditioned by operating it for 15 min on a clean, dry concrete surface. After running on the concrete surface the brush has to be immersed in a shampoo solution for at least 30 min.

4 General requirement

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable.

6 Classification

This clause of Part 1 is applicable except as follows.

6.1 Replacement:

Appliances and their attachments shall be **class I**, **class II** or **class III** with respect to their protection against electric shock.

Compliance is checked by inspection and by the relevant tests.

6.2 Addition:

Mains supplied machines for indoor use and intended for dry cleaning only, shall be at least IPX0. Other machines shall be at least IPX4.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.9 Addition:

The operation of the vacuum motor is deemed to be an adequate indication of the position of the switch that exclusively controls the vacuum motor.

7.12 Addition:

The cover of the instruction sheet shall carry the following:

WARNING: Do not use the appliance without reading the instruction sheet.

This warning may be replaced by symbol 0434 or symbol 1641 of ISO 7000.

If it is necessary to take special precautions when using the appliance (e. g. handling with inflammable liquids, dusts hazardous to health or flammable sanding dust), details of these shall be given in an instruction sheet that accompanies the appliance.

All machines shall be accompanied by an instruction sheet that includes a statement specifying that the plug of the supply cord shall be removed from the socket-outlet before cleaning the appliance or undertaking maintenance operations.

If electric power is necessary to change brushes or other attachments, an appropriate warning shall be given.

The instruction sheet shall state that during operation hazard may occur when running the machines over the supply cord, and that if the supply cord is damaged, it has to be replaced.

If several brushes are supplied or specified with/or for an appliance, instruction sheets shall include descriptions of the brushes and explanations of the purposes for which they are intended. If a special large diameter brush is provided for dry buffing, this shall be clearly identified with the description and shall include a warning that it is not intended for general polishing.