



DPC: 14 / 30298367 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

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Interested committees:

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

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Responsible Committee Secretary: Ms Snezhana Halacheva (BSI)

Direct tel: 020 8996 7288

E-mail: snezhana.halacheva@bsigroup.com

Introduction

This draft standard is based on international discussions in which the UK has taken an active part. Your comments on this draft are welcome and will assist in the preparation of the consequent standard. There is a high probability that this text could be adopted by CENELEC as a reference document for harmonization or as a European Standard. Recipients of this draft are requested to comment on the text bearing in mind this possibility.

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Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	(7)
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/ Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



61J/604/CDV

COMMITTEE DRAFT FOR VOTE (CDV) PROJET DE COMITÉ POUR VOTE (CDV)

Project number Numéro de projet		IEC 60335-2-67-A1/Ed4	
IEC/TC or SC: SC61J CEI/CE ou SC:		Secretariat / Secrétariat Germany	
☒ Submitted for parallel voting in CENELEC Soumis au vote parallèle au CENELEC	Date of circulation Date de diffusion 2014-10-24	Closing date for voting (Voting mandatory for P-members) Date de clôture du vote (Vote obligatoire pour les membres (P)) 2015-01-30	
Also of interest to the following committees Intéresse également les comités suivants		Supersedes document Remplace le document 61J/578/CD and 61J/591A/CC	
Proposed horizontal standard Norme horizontale suggérée ☒ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the TC/SC secretary Les autres CE/SC sont requis d'indiquer leur intérêt, si nécessaire, dans ce CDV à l'intention du secrétaire du CE/SC			
Functions concerned Fonctions concernées ☒ Safety Sécurité ☐ EMC CEM ☐ Environment Environnement ☐ Quality assurance Assurance qualité			

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Titre :

Title : IEC 60335-2-67-A1/Ed4: Household and similar electrical appliances - Safety - Part 2-67: Particular requirements for floor treatment machines for commercial use

Note d'introduction

Introductory note

ATTENTION VOTE PARALLÈLE CEI – CENELEC L'attention des Comités nationaux de la CEI, membres du CENELEC, est attirée sur le fait que ce projet de comité pour vote (CDV) de Norme internationale est soumis au vote parallèle. Les membres du CENELEC sont invités à voter via le système de vote en ligne du CENELEC.	ATTENTION IEC – CENELEC PARALLEL VOTING The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) for an International Standard is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.
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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.
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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.

This fourth edition cancels and replaces the third edition published in 2002 and its Amendment 1 (2005). It constitutes a technical revision.

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;

- 116 – a new Annex CC 'Emission of acoustical noise' was added; and
117 – a new Annex DD 'Emission of vibration' was added.

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

FDIS	Report on voting
61J/489/FDIS	61J/498/RVD

119
120 Full information on the voting for the approval of this standard can be found in the report on
121 voting indicated in the above table.

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

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

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

126 This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to
127 convert that publication into the IEC standard: Safety requirements for floor treatment
128 machines for commercial use.

129 When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies
130 as far as is reasonable. When this standard states “addition”, “modification” or “replacement”,
131 the relevant text in Part 1 is to be adapted accordingly.

132 NOTE 2 The following numbering system is used:

- 133 – subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
134 – unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including
135 those in a replaced clause or subclause;
136 – additional annexes are lettered AA, BB, etc.

137 NOTE 3 The following print types are used:

- 138 – requirements: in roman type;
139 – *test specifications: in italic type*;
140 – notes: in small roman type.

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

145 It is the recommendation of the committee that the content of the amendment 2 be adopted for implementation
146 nationally not earlier than 12 months or later than 36 months from the date of publication.

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

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

151

152 The committee has decided that the contents of this publication will remain unchanged until
153 the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data
154 related to the specific publication. At this date, the publication will be

- 155 • reconfirmed,
- 156 • withdrawn,
- 157 • replaced by a revised edition, or
- 158 • amended.

159

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.

160

161

162

INTRODUCTION

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

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

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

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

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

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

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

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

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

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

195

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 according to 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**, according to IEC 60335-2-72;

- 240 – hand-held and transportable motor-operated electric **tools** (IEC 60745 series, IEC 61029
241 series);
- 242 – machines designed for use in corrosive or explosive environments (dust, vapour or gas);
- 243 – machines designed for picking up hazardous dusts (as defined in IEC 60335-2-69),
244 inflammable substances, or glowing particles;
- 245 – machines designed for use in vehicles or on board of ships or aircraft.

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

249 **2 Normative references**

250 This clause of Part 1 is applicable except as follows.

251 *Addition:*

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

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

256 **3 Terms and definitions**

257 This clause of Part 1 is applicable except as follows.

258 **3.1.9 Replacement:**

259 **normal operation**

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

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

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

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

269 The **normal operation** related to the operational functions is specified in 3.1.9.101 to
270 3.1.9.103.

271 **3.1.9.101** Scrubbing, stripping, grinding and scarifying machines are operated with the
272 appropriate brushes or pads on a surface of hydraulically pressed concrete paving slabs (see
273 Annex AA).

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

276

277 **3.1.9.102** Polishing and dry buffing machines are operated as follows.

278 PVC or comparable surfaces are considered to be suitable for establishing **normal operation**.
279 The peak of input occurring during the drying process of the chemical applied to treat the
280 surface is not taken as **normal operation** but is averaged by extending measurements over a
281 period of at least 10 min.

282 **3.1.9.103** Carpet shampooers are operated on a test surface consisting of a carpet, in
283 accordance with IEC 60312-1, the carpet being fastened to the floor.

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

287 **3.101**
288 **water-suction cleaning machine**
289 machine for applying and sucking up a water-based cleaning solution

290 **3.102**
291 **motorized cleaning head**
292 hand-held or hand-guided cleaning device connected to the machine, with an integrated
293 electrical motor

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

295 **3.103**
296 **traction drive**
297 system used to propel the machine, e.g. by powered wheels

298 Traction by the effect of rotating brushes is not included

299 **3.104**
300 **operator presence control**
301 **OPC**
302 control device that automatically interrupts the power, e.g. to a drive or an engine, when the
303 **operator's** actuating force is removed

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

305 **3.105**
306 **guard**
307 part of the machine specifically designed to provide protection by means of a physical barrier,
308 such as, for example, a casing, a shield, a cover, a screen, a door, an enclosure or a fence;
309 other parts of the machine that fulfil a primarily operational function, such as, for example, the
310 frame of the machine, may also fulfil a protective function but are not referred to as **guards**

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

314 **3.106**
315 **operator**
316 person installing, operating, adjusting, maintaining, cleaning or moving the machine

317 **3.107**
318 **test solution**
319 solution which consists of 20 g of NaCl and 1 ml of a solution of 28 % by mass of dodecyl
320 sodium sulphate in each 8 l of water

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

322

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

I.e. in particular that

- the machines may be used by cleaning contractors, cleaning staff, etc.;
- they are used in commercial or public premises (i.e. offices, shops, hotels, hospitals, schools, etc.) or in industrial (plants, etc.) and light industrial (workshops, etc.) environments.

Note 1 to entry: **Commercial use** is also called professional use.

4 General requirement

This clause of Part 1 is applicable except as follows.

Replacement of the first paragraph by the following text:

Machines shall be constructed so that they function safely so as to cause no danger to persons or surroundings during normal use, even in the event of carelessness, and during installation, adjusting, maintenance, cleaning, repairing or transportation.

Addition:

For the purpose of this standard, the term 'appliance' as used in Part 1 is to be read as 'machine'.

5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

5.101 *The test solution is to be stored in a cool atmosphere and used within seven days after its preparation.*

6 Classification

This clause of Part 1 is applicable except as follows.

6.1 Replacement:

Machines shall be one of the following classes with respect to the protection against electric shock:

- **class I**,
- **class II** or
- **class III**.

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.

7.1 Replacement of the 4th dashed item as follows:

- business name and address of the manufacturer and, if applicable, his authorized representative; any address shall be sufficient to ensure postal contact;

Addition:

Machines shall be marked in addition with the following:

- serial number, if any;
- designation of the machine and series or type, allowing the technical identification of the product. This may be achieved by a combination of letters and/or numbers;

NOTE 101 Designation of machine, series or type includes the model or type reference as required in Part 1.

- year of construction, i.e. the year in which the manufacturing process is completed.

NOTE 102 The year of construction can be part of the serial number.

Machines shall be marked with the mass of the most usual configuration in kg.

Machines intended to be used indoors and powered by internal combustion engines shall be marked with the symbol according to Figure 106. It is acceptable to show this symbol in monochrome colour.

7.1.101 Motorized cleaning heads shall be marked with

- **rated voltage** or **rated voltage range** in volts;
- **rated power input** in watts;
- name, trade mark or identification mark of the manufacturer or responsible vendor;
- model or type reference;
- mass of the most usual configuration in kg.

Motorized cleaning heads for water-suction cleaning appliances, except those of **class III construction** having a **working voltage** up to 24 V shall be marked with symbol IEC 60417-5935 (2012-09).

NOTE This symbol is an information sign and, except for the colours, the rules of ISO 3864-1 apply.

Compliance is checked by inspection.

7.1.102 Socket-outlets for accessories shall be marked with the maximum load in watts on the socket-outlet or close to it.

Compliance is checked by inspection.

7.6 Addition:



[symbol IEC 60417-5935 (2012-09)]

motorized cleaning head for
water-suction cleaning

7.12 Replacement of the 4th paragraph by the following text.