



SLOVENSKI STANDARD
oSIST prEN IEC 63327:2026
01-april-2026

Avtomatski stroji za nego tal za komercialno uporabo - Posebne zahteve

Automatic floor treatment machines for commercial use - Particular requirements

Automatische Bodenbehandlungsmaschinen für den gewerblichen Gebrauch -
Besondere Anforderungen

Machines automatiques de traitement des sols à usage commercial - Exigences
particulières

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97.080 Aparati za čiščenje Cleaning appliances

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TITLE:

Automatic floor treatment machines for commercial use - Particular requirements

PROPOSED STABILITY DATE: 2029

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IEC 63327 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. It is an International Standard.

The text of this International Standard is based on the following documents:

CDV	Report on voting
61J/XXX/CDV	61J/XXX/RVC

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. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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87 The requirements for the construction and testing covered by this document are applied in
88 addition to the particular requirements for floor treatment machines with or without traction
89 drive, for commercial use given in IEC 60335-2-72:2021.

90 NOTE 1 The following print types are used:

- 91 – requirements: in roman type;
- 92 – *test specifications: in italic type;*
- 93 – notes: in small roman type.

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

96 NOTE 2 The 100 numbering is applied in certain clauses of this standard as these are additions to certain existing
97 clauses of IEC 60335-1, IEC 60335-2-69, and IEC 60335-2-72.

98 NOTE 3 The 200 numbering in certain clauses of this standard is applied to avoid overlap with the numbering of
99 the corresponding clauses of IEC 60335-1, IEC 60335-2-69, and IEC 60335-2-72.

100 The committee has decided that the contents of this document will remain unchanged until the
101 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
102 specific document. At this date, the document will be

- 103 • reconfirmed,
- 104 • withdrawn,
- 105 • replaced by a revised edition, or
- 106 • amended.

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INTRODUCTION

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

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

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

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

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

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

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

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AUTOMATIC FLOOR TREATMENT MACHINES FOR COMMERCIAL USE – PARTICULAR REQUIREMENTS

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141 1 Scope

142 This International Standard deals with the safety of powered **automatic floor treatment**
143 **machines** intended for **commercial use** indoors for the following applications:

- 144 – sweeping,
- 145 – scrubbing,
- 146 – wet or dry pick-up,
- 147 – polishing,
- 148 – application of wax, sealing products and powder-based detergents,
- 149 – shampooing

150 of floors.

151 The requirements given by this standard are applied in addition to the requirements for
152 commercial floor treatment machines in IEC 60335-2-72, as far as applicable.

153 For **automatic floor treatment machines** solely designed for wet or dry pick-up, additional or
154 modified requirements of IEC 60335-2-69 where stated are applicable.

155 Machines covered by this standard can operate in **automatic** or **manual mode**.

156 Modified requirements are given in Annex FF of this standard for **automatic floor treatment**
157 **machines** not equipped with a **manual mode**.

158 The **automatic floor treatment machines** covered by this standard are designed to avoid
159 hazardous contact with persons in the environment applied. It is recognized that **automatic**
160 **floor treatment machines** for **commercial use** might require operation within close proximity
161 to large groups of people, such as in shopping malls and schools.

162 Throughout this standard, the term “machine” is used to refer to an **automatic floor treatment**
163 **machine**.

164 The following power systems are covered:

- 165 – rechargeable batteries that are recharged by **built-in battery chargers** or off-board battery
166 chargers which may be incorporated within the circuitry of the machine, or mounted on the
167 machine and incorporated within the enclosure of the **automatic floor treatment machine**;
168 or powered by batteries that need to be removed to be recharged with a charger that is
169 external to the machine,
- 170 – Other systems are under consideration.

171 This standard does not apply to

- 172 – vacuum cleaners and water-suction cleaning appliances and automatic battery-operated
173 cleaners for household use (IEC 60335-2-2);
- 174 – floor treatment machines and wet scrubbing machines for household use
175 (IEC 60335-2-10);
- 176 – battery chargers (IEC 60335-2-29);

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- 177 – floor treatment machines for **commercial use** (IEC 60335-2-67);
 178 – spray extraction machines for **commercial use** (IEC 60335-2-68);
 179 – road sweepers;
- 180 NOTE 101 In Europe, the EN 17106 series covers road sweepers.
- 181 – machines designed for use on **slopes** with a gradient exceeding 20 %;
 182 – machines equipped with a power take-off (PTO);
 183 – machines designed for use in corrosive or explosive environments (dust, vapour or gas);
 184 – machines designed for use in vehicles or on board of ships or aircraft.
 185 – vacuum cleaners designed for pickup of combustible dust;
 186 – appliances for medical purposes (IEC 60601-1);
 187 – driverless industrial trucks and their systems (ISO 3691-4);
 188 – robots and robotic devices: Safety requirements of personal care robots (ISO 13482)
 189 – machines with parts that extend beyond the **contact zone** of the machine;
- 190 NOTE 102 Components of the machine that operate outside the **contact zone** can be evaluated differently.
- 191 – machines designed for picking up liquids with a flash point below 55 °C.
- 192 NOTE 103 The flash point temperature limit can vary in different countries. National regulations will need to be
 193 taken into account.
- 194 NOTE 104 Attention is drawn to the fact that in many countries additional requirements on the safe use of the
 195 equipment covered can be specified by the national health authorities, the national authorities responsible for the
 196 protection of labour, the national water supply authorities and similar authorities.

197 2 Normative references

198 The following documents are referred to in the text in such a way that some or all of their content
 199 constitutes requirements of this document. For dated references, only the edition cited applies.
 200 For undated references, the latest edition of the referenced document (including any
 201 amendments) applies.

202 IEC 60335-1:2020, *Household and similar electrical appliances – Safety – Part 1: General*
 203 *requirements*

204 IEC 60335-2-69:2021, *Household and similar electrical appliances – Safety – Part 2-69:*
 205 *Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial*
 206 *use*

207 IEC 60335-2-72:2021, *Household and similar electrical appliances – Safety – Part 2-72:*
 208 *Particular requirements for floor treatment machines with or without traction drive, for*
 209 *commercial use*

210 IEC 61032, *Protection of persons and equipment by enclosures – Probes for verification*

211 IEC 61058-1, *Switches for appliances – Part 1: General requirements*

212 IEC 61770:2008, *Electric appliances connected to the water mains – Avoidance of*
 213 *backsiphonage and failure of hose-sets*

214 IEC 62061, *Safety of machinery – Functional safety of safety-related control systems*

215 ISO 13849-1, *Safety of machinery – Safety-related parts of control systems – Part 1: General*
 216 *principles for design*

217 ISO 13857:2019, *Safety of machinery – Safety distances to prevent hazard zones being*
218 *reached by upper and lower limbs*

219 ISO 18646-1:2016, *Robotics – Performance criteria and related test methods for service robots*
220 *– Part 1: Locomotion for wheeled robots*

221 **3 Terms and definitions**

222 Clause 3 of IEC 60335-2-69:2021 and IEC 60335-2-72:2021 applies, except as follows:

223 NOTE The 200 numbering in Clause 3 of this standard is applied to avoid overlap with the numbering of Clause 3
224 of IEC 60335-2-69 and IEC 60335-2-72.

225 *Addition:*

226 **3.201**

227 **automatic floor treatment machine**

228 machine that operates automatically on a defined working area and that may also be able to be
229 operated in a **manual mode**

230 Note 1 to entry: Definition of the work area and floor surface can be done by **operator** action, (temporary) physical
231 limitations or by autonomous (initial) exploratory mode of the machine.

232 **3.202**

233 **type 1 machine**

234 **automatic floor treatment machine** having

- 235 – a maximum **rated automatic speed** not exceeding 3 km/h, and
- 236 – a height during **normal operation** not exceeding 50 cm above the ground, and
- 237 – a mass during **normal operation** not exceeding 20 kg

238 Note 1 to entry: If a **GVW** is available, the mass is replaced by this value.

239 **3.203**

240 **type 2 machine**

241 **automatic floor treatment machine** other than a **type 1 machine**

242 **3.204**

243 **control system**

244 set of logic control and power functions which allows to monitor and control the mechanical
245 structure of the machine and to communicate with the environment (equipment and **operators**)

246 [SOURCE: ISO 8373:2012, 2.7 modified – "monitoring" has been changed to "to monitor",
247 "robot" has been changed to "machine", "communication" has been changed to "communicate"
248 and "users" has been changed to "operators"]

249 **3.205**

250 **manual mode**

251 operating mode in which the machine can be operated by, for example, pushbuttons or a joystick
252 and that excludes operation in **automatic mode**

253 Note 1 to entry: It includes manual cleaning and transportation modes.

254 [SOURCE: ISO 8373:2012, 5.3.10.2, modified – "robot" has been changed to "machine",
255 "operation" has been changed to "mode" and the note to entry has been added]

- 256 **3.206**
 257 **automatic mode**
 258 operating mode in which the machine accomplishes its assigned mission without direct human
 259 intervention
- 260 **3.207**
 261 **locked state**
 262 condition in which the driving wheels are being prevented from moving with a locking
 263 mechanism that can be unlocked by the intervention of the authorized **operator** only
- 264 Note 1 to entry: A locking mechanism can be the **traction drive** or the service brake.
- 265 **3.208**
 266 **rated automatic speed**
 267 maximum speed of the machine during operation in **automatic mode** in **open space**
- 268 **3.209**
 269 **access control**
 270 security measure enabling the **operator** to gain access to the control of the machine
- 271 Note 1 to entry: It includes, but is not limited to, a key-protected control device.
- 272 **3.210**
 273 **stopping distance**
 274 maximum distance travelled by the **machine** between the initiation of the stop and the complete
 275 standstill
- 276 Note 1 to entry: The **stopping distance** in 0 includes machine reaction time.
- 277 [SOURCE: ISO 18646-1:2016, 3.10, modified – "mobile platform origin" has been changed to
 278 "machine", "full stop of the mobile platform" has been changed to "complete standstill" and the
 279 note to entry has been added]
- 280 **3.211**
 281 **stop category 0**
 282 stopping by immediate removal of power to the machine actuators (i.e., an uncontrolled stop)
- 283 [SOURCE: IEC 60204-1:2016, 9.2.2]
- 284 **3.212**
 285 **stop category 1**
 286 controlled stop with power available to the machine actuators to achieve the stop and then
 287 removal of power when the stop is achieved
- 288 [SOURCE: IEC 60204-1:2016, 9.2.2]
- 289 **3.213**
 290 **stop category 2**
 291 controlled stop with power left available to the machine actuators
- 292 [SOURCE: IEC 60204-1:2016, 9.2.2, modified – "remaining" has been changed to "left" and the
 293 note to entry has been added]
- 294 **3.214**
 295 **stopping zone**
 296 fixed or variable-sized zone in which the machine has the capabilities to avoid a static object
- 297 Note 1 to entry: See Figure 2.

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298 **3.215**
 299 **contact zone**
 300 boundary in which the machine is assumed to be in contact with the object, and the allowable
 301 motion of the machine could be hazardous at that boundary

302 Note 1 to entry: See Figure 2.

303 Note 2 to entry: Hazardous exposed moving side brushes are included in the **contact zone**.

304 **3.216**
 305 **open space**
 306 area that is not considered to be a **confined space**

307 **3.217**
 308 **confined space**
 309 area in which the distance from the nearest continuous wall or obstacle is less than 0,5 m from
 310 the **machine transport width** parallel to the direction of motion

311 Note 1 to entry: See Figure 2.

312 **3.218**
 313 **machine transport width**
 314 minimum width the machine can pass through to indicate the maneuverability of the machine
 315 during transport

316 Note 1 to entry: It does not indicate the effective cleaning width of the machine.

317 [SOURCE: IEC 62885-9:2019, Clause 7, modified – "not the effective cleaning width of the
 318 machine" has been deleted and the note to entry has been added]

319 **3.219**
 320 **docking station**
 321 unit that may provide one or more of the following functions for the **automatic floor treatment**
 322 **machine**:

- 323 – manual or automatic battery charging facilities,
- 324 – AC and/or DC power supply,
- 325 – filling water with or without detergents,
- 326 – filling detergents,
- 327 – filling water for wet batteries,
- 328 – emptying of wastewater, dust, coarse dirt,
- 329 – communication connections,
- 330 – navigation information

331 **Note 1 to entry: A docking station is also known as a base unit.** **3.220**

332 **Hazardous contact**
 333 A contact with a force >150 N impacting an obstacle

334 Note to entry 1: The force is measured per Annex KK with the safety system on for **type 2 machines**.

335 Note 2 to entry: if a **bumper system** is applied, additional requirements apply including deactivation of parts of the
 336 obstacle detection system.

337 **3.221**
 338 **bumper system**
 339 device sensing a person or obstacle using physical contact means