
Varnost gospodinjskih in podobnih električnih aparatov - 2-72. del: Posebne zahteve za avtomatske stroje za obdelavo tal za komercialne in industrijske namene (IEC 60335-2-72:1995; spremenjen)

Safety of household and similar electrical appliances – Part 2-72: Particular requirements for automatic machines for floor treatment for commercial and industrial use (IEC 60335-2-72:1995, modified)

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EUROPEAN STANDARD

EN 60335-2-72

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 1998

ICS 29.020;97.080

Descriptors: Household electrical appliances, automatic floor treatment machines, appliance for commercial use, safety requirements, protection against electric shock, fire protection, protection against mechanical hazard

English version

Safety of household and similar electrical appliances
Part 2: Particular requirements for automatic machines for floor treatment
for commercial and industrial use
(IEC 60335-2-72:1995, modified)

Sécurité des appareils
électrodomestiques et analogues
Partie 2: Règles particulières pour les
appareils automatiques de traitement
des sols à usage industriel et
commercial
(CEI 60335-2-72:1995, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2: Besondere Anforderungen für
automatische Maschinen zur
Bodenbehandlung für gewerbliche und
industrielle Zwecke
(IEC 60335-2-72:1995, modifiziert)

This European Standard was approved by CENELEC on 1998-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

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Foreword

The proposal to endorse IEC 60335-2-72:1995, document CLC/TC 61 (SEC) 1053, was circulated under the enquiry procedure in January 1996. The comments were discussed during the Fehrltorf meeting in October 1997 when it was decided to submit a modified draft for EN 60335-2-72 to the formal vote.

This draft was circulated in June 1998 and was approved by CENELEC as EN 60335-2-72 on 1998-10-01.

The following dates are applicable:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1999-04-01
- date on which national standards conflicting with the EN have to be withdrawn (dow) 2002-04-01

This standard has to be used in conjunction with EN 60335-1, Safety of household and similar electrical appliances, Part 1: General requirements. It was established on the basis of the 1994 edition of that standard. Amendments and revisions of part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of part 1.

This part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Safety requirements for electric automatic machines for floor treatment for commercial and industrial 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.

Subclauses and figures which are additional to those in part 1 are numbered starting with 101. Annexes which are additional to those in part 1 are lettered AA, BB, etc.

There are no special national conditions causing a deviation from this European Standard, other than those listed in annex ZA to EN 60335-1.

There are no national deviations from this European Standard, other than those listed in annex ZB to EN 60335-1.

NOTE - 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 2. When a definition of part 1 concerns an adjective, the adjective and the associated noun are also in bold.

p NOTE - In this document p is used in the margin to indicate instructions for preparing the printed version.

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Introduction

In response to a European Commission mandate, this standard has been carefully examined by CENELEC TC 61 with respect to the Machinery Directive, 89/392/EEC. It was concluded that the safety of products within its scope is covered by both the Low Voltage Directive, 73/23/EEC, and the Machinery Directive in a complementary way. The principal objectives of the Low Voltage Directive and the relevant essential safety requirements of the Machinery Directive are covered by this standard.

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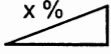
Endorsement notice

The text of the International Standard IEC 60335-2-72:1997 was approved by CENELEC as a European Standard with common modifications as given below.

COMMON MODIFICATIONS

7 Marking and instructions

p 7.1 Replace the last dashed item by:

- the symbol indicating the maximum gradient of operation, ", where x indicates the gradient with a minimum of 2 %.

p 7.12 Replace the text by:

The front cover of the instruction manual shall include the substance of the following:

CAUTION Read the instruction manual before using the appliance.

This wording may be replaced by symbols Nos. 0434 and 1641 of ISO 7000. If these symbols are used, their meaning is to be explained in the instructions for use.

The instruction manual shall include the substance of the following warnings, as applicable:

- **CAUTION** This appliance is not suitable for picking up hazardous dust;
- **CAUTION** This appliance is for dry use only and is not to be used or stored outdoors in wet conditions;
- **CAUTION** Do not use on surfaces having a gradient exceeding that marked on the appliance;
- **WARNING** Only use the brushes provided with the appliance or those specified in the instruction manual. The use of other brushes may impair safety;

The instruction manual shall give details regarding the following, as applicable:

- a statement that the appliance is only to be used by persons who have been adequately instructed;
- the precautions to be taken when using the appliance under specific conditions such as handling flammable liquids or dust, and dust hazardous to health;
- a statement that the appliance is to be disconnected from its power source during cleaning or maintenance and when replacing parts or converting the appliance to another function,
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 - for mains operated appliances, the plug is to be removed from the socket-outlet,
 - for battery operated appliances, the key of the supply switch is to be removed or an equivalent disconnection is to be made;
- a statement that doors and covers are to be positioned as indicated in the instruction manual before using the appliance;



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- the precautions to be taken when changing brushes or other attachments which require the appliance to be energized;
- the intended use of brushes which are specified for the appliance;
- a warning that large diameter brushes provided specifically for dry buffing are not intended for general polishing.

The instruction manual shall state

- the A-weighted sound pressure level L_{PA} in dB(A) emitted by the appliance. If the A-weighted sound pressure level exceeds 85 dB(A), it shall also state the sound power level L_{WA} in dB(A) and that appropriate ear protection has to be used.

NOTE - The sound level is measured in accordance with EN 60704-1.

- the weighted r.m.s. acceleration value to which the operator's arms are subjected in m/s^2

NOTE - The weighted r.m.s. acceleration value is measured in accordance with ISO 5349, the appliance being supplied at **rated voltage** and operated under **normal operation**.

- the weighted r.m.s. acceleration value to which the operator is subjected in m/s^2

NOTE - The weighted r.m.s. acceleration value is measured in accordance with ISO 2631/1, the appliance being supplied at **rated voltage** and operated under **normal operation**.

The instruction manual for mains operated appliances shall include the substance of the following:

- do not allow the rotating brushes to come into contact with the supply cord;
- regularly examine the supply cord for damage, such as cracking or ageing. If damage is found, replace the cord before further use;
- only replace the supply cord with the type specified in the instruction manual;
- only use the socket outlet on the appliance for purposes specified in the instruction manual.

The instruction manual for appliances having a traction drive and a mass exceeding 100 kg shall include the substance of the following:

- in order to prevent unauthorised use of the appliance, the power source is to be switched off or locked, for example, by removing the key of the power switch;
- appliances left unattended are to be secured against unintentional movement.

The instruction manual for appliances having anchorage points for installing roll-over protection systems (ROPS) or falling object protection systems (FOPS) shall include instructions for fitting the system. The intended purpose of any protection system shall be stated.

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20 Stability and mechanical hazards

p 20.102.4 Add:

Pedals shall be arranged so that they can be operated without risk of confusion. Their surface shall be slip-resistant and easy to clean.

p 20.108 Add:

Ride-on machines shall have an acoustic warning device controlled by the driver. If they are fitted with hazardous exposed moving brushes, they shall also have a yellow pulsating or rotating light. It shall not be possible to inadvertently disconnect these warning devices.

Compliance is checked by inspection and by manual test.

22 Construction

p Add:

22.Z101 Machines shall be constructed so that parts related to the driving operation, such as the seat, steering wheel and controls, are in accordance with the relevant ergonomic principles.

NOTE - Examples are given in ISO 3411.

Compliance is checked by inspection.

22.Z102 Machines shall be constructed so that drivers cabins are adequately ventilated in order to avoid the accumulation of exhaust gases or lack of oxygen. It shall be possible to evacuate the cabin rapidly. An emergency exit shall also be provided.

Compliance is checked by inspection.

22.Z103 If the machine is provided with a roll-over protection system (ROPS) or a falling objects protection system (FOPS), the system shall have an adequate deformation limit volume (DLV).

Compliance is checked in accordance with ISO 3471 or ISO 3449, as appropriate.

30 Resistance to heat, fire and tracking

p Replace by:

This clause of part 1 is applicable except as follows.

30.1

Addition:

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NOTE -The cabin and its fittings are considered to be external parts.

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