

SLOVENSKI STANDARD

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Household and similar electrical appliances - Safety -- Part 2-68: Particular requirements for spray extraction appliances, for industrial and commercial use

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke -- Teil 2-68: Besondere Anforderungen für Sprühextraktionsmaschinen für industrielle und gewerbliche Zwecke

Appareils électrodomestiques et analogues - Sécurité -- Partie 2-68: Règles particulières pour les appareils de nettoyage par pulvérisation et aspiration, à usage industriel et commercial

Ta slovenski standard je istoveten z: EN 60335-2-68:2009

ICS:

97.080

Aparati za nego tal

Floor treatment appliances

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60335-2-68

September 2009

ICS 97.020

Supersedes EN 60335-2-68:2003 + A1:2006 + corr. Dec.2006 + A2:2007

English version

**Household and similar electrical appliances -
Safety -
Part 2-68: Particular requirements
for spray extraction machines for commercial use
(IEC 60335-2-68:2002 + A1:2005 + A2:2007, modified)**

Appareils électrodomestiques
et analogues -
Sécurité -
Partie 2-68: Règles particulières
pour les machines de nettoyage
par pulvérisation et aspiration
à usage commercial
(CEI 60335-2-68:2002 + A1:2005 +
A2:2007, modifiés)

Sicherheit elektrischer Geräte
für den Hausgebrauch
und ähnliche Zwecke -
Teil 2-68: Besondere Anforderungen
für Sprühextraktionsmaschinen
für den gewerblichen Gebrauch
(IEC 60335-2-68:2002 + A1:2005 +
A2:2007, modifiziert)

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This European Standard was approved by CENELEC on 2009-09-01. 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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

In the light of the necessity to adapt EN 60335-2-68 with regard to the requirements of the Machinery Directive 2006/42/EC, a draft was prepared by CENELEC TC61/WG6/J in co-operation with the MD Consultant, taking also into account the results of CENELEC TC61/WG6 work on EN 60335-1.

The approach to amend EN 60335-2-68:2003 aiming toward listing the standard under the MD was discussed and approved during the Kista meeting of CENELEC TC 61 in June 2008 (see CLC/TC 61/SEC/1649), when it was decided to submit a draft for an amendment to the Unique Acceptance Procedure.

The draft was circulated as FprAB in December 2008 and was approved by CENELEC as a new edition of EN 60335-2-68 on 2009-09-01.

This European Standard supersedes EN 60335-2-68:2003 + A1:2006 + corrigendum December 2006 + A2:2007.

In this European Standard the common modifications to the International Standard IEC 60335-2-68:2002 + A1:2005 + A2:2007 are indicated by a vertical line in the left margin of the text.

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) 2009-12-29
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2009-12-29

This Part 2 has to be used in conjunction with EN 60335-1, Household and similar electrical appliances – Safety – Part 1: General requirements. It was established on the basis of the 2002 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 spray extraction machines for commercial use.

When a particular subclause of Part 1 is not mentioned in this Part 2, that subclause applies. When this standard states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 2006/42/EC. See Annex ZZ.

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 letter Z.

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. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

Special national conditions causing a deviation from this European Standard are listed in Annex ZA and are in addition to those in EN 60335-1.

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

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Introduction

It has been assumed in the drafting of this European 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 machines 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 machines.

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 machine is connected to the supply mains. However, national wiring rules may differ.

If a machine within the scope of this standard also incorporates functions that are covered by another Part 2 of EN 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 machines and takes precedence over horizontal and generic standards covering the same subject.

A machine 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.

A machine 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 2-68: Particular requirements for spray extraction machines for commercial use

1 Scope

This clause of Part 1 is replaced by the following.

This European Standard deals with the safety of electrical **portable**, non self-propelled **motor-operated spray extraction machines** with or without attachments and with or without electrical heating elements, intended for commercial indoor use.

NOTE Z101 Commercial use of spray extraction machines is for example their use in hotels, schools, hospitals, factories, shops and offices for other than normal housekeeping purposes and rental services for those machines.

The following power systems are covered:

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

This standard applies to machines in which the pressure of the employed **cleaning agent** does not exceed 2,5 MPa, and in which the product of the pressure (in MPa) and the flow of **cleaning agent** (in litres per minute) does not exceed 100, and in which the temperature of the **cleaning agent** at the spray nozzle outlet does not exceed 85 °C.

NOTE Z102 Attention is drawn to the fact that in many countries additional requirements on the safe use of the equipment covered may be specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities and similar authorities.

This standard does not apply to

- machines designed to be part of a production process;
- wet and dry vacuum cleaners as covered by IEC 60335-2-69;
- machines designed for picking up hazardous dusts, inflammable substances, or aflame particles;
- floor treatment machines for commercial use;

NOTE Z103 IEC 60335-2-67 covers floor cleaning and floor treatment machines for industrial and commercial use. IEC 60335-2-72 covers automatic floor treatment machines for industrial and commercial use.

- machines designed for use in corrosive or explosive environments (dust, vapour or gas);
- **hand-held appliances**;
- hand-held and transportable motor-operated electric tools.

NOTE Z104 The IEC 60745 series covers hand-held motor-operated electric tools; the IEC 61029 series covers transportable motor-operated electric tools.

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*

IEC 60704-2-1, *Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 2-1: Particular requirements for vacuum cleaners*

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

3 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, specified as follows

The machine is operated with the spray extraction pump with the nozzle giving the highest load, the vacuum motor, the device for agitating the carpet pile (if any), the **cleaning agent heater** (if any) and the soiled water discharge pump (if any) all in use. Any marking of short time intermittent operation of the pumps shall be observed.

The **normal operation** P_m of the vacuum motor is obtained at the following power input:

$$P_m = 0,5 (P_f + P_i)$$

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where

P_f is the input, in watts, when the machine has been operated for 3 min, fitted with the nozzle and hose giving the highest input;

P_i is the input, in watts, when the machine has been operated for 20 s with the nozzle sealed, immediately following the 3-minute-period with the nozzle open. Any valve or similar device used to ensure a flow of air to cool the motor in the event of a blockage of a main air inlet is rendered ineffective.

P_f and P_i are measured with the supply voltage adjusted to **rated voltage**, or to a voltage equal to the mean value of the **rated voltage range** if the difference between the limits of the **rated voltage range** does not exceed 10 % of the mean value of the range. If the difference between the limits of the **rated voltage range** exceeds 10 % of the mean value, the tests are carried out with the supply voltage set to the upper limit of the range.

The hose is laid out straight. If the machine is provided with a hose as an optional accessory, it is operated without the hose.

Electrically driven devices for agitating the carpet, if any, are in operation but are not in contact with the floor or any other surface or with the means used to seal the air inlet.

The adjustment of the air inlet is not altered when it is specified that the machine is operated under normal load, irrespective of the supply voltages specified in the test. Where optional filtration systems are supplied with the spray extraction machine, the filtration system giving the least air resistance (maximum flow) is fitted.

The normal load is equal to the mean load P_r for the electrically driven agitating device such as a motor driven brush determined in accordance with the following:

- the agitating device operates on a carpet as specified in IEC 60312;
- the mean load P_r is determined when using the device in the following way:

After setting the device, the device shall be moved twice over a distance of 5 m in the direction giving the highest load;

- the motor responsible for the airflow operates under the same conditions as determining P_f , i. e. no airflow restrictions, and measurements are taken after 3 min;
- the device is adjusted to the carpet pile height;
- it is necessary to move the agitating device slowly across the carpet to avoid carpet damage.

Soiled water discharge pumps, if applicable, are operated as follows.

The pump delivers a continuous flow of water without any soiled water discharge hose attached to the soiled water outlet of the machines unless the discharge hose is permanently attached to the machine. The vacuum motor shall work during the test, unless an interlock device is provided to prevent combined operation of both motors.

Power outlets for accessories are loaded with a resistive load in accordance with the marking.

3.101

cleaning agent pre-heater

electric heating element which is intended to raise the temperature of the **cleaning agent** to operating temperature before the cleaning operation

3.102

cleaning agent heater

electric heater which is intended to maintain the **cleaning agent** at the correct temperature for effective operation

3.103

cleaning agent

water with or without the addition of soluble or miscible detergent

3.104

spray extraction machine

machine with or without heating elements and with or without attachments, by which a **cleaning agent** under pressure is sprayed into or onto the surface to be cleaned and the remaining soiled **cleaning agent** is removed by suction

3.105

Void

3.106

maximum rated operating pressure

maximum pressure generated by the pump when operated at **rated voltage**

3.107

Void

3.108

water-suction cleaning machine

machine for applying and sucking up a **cleaning agent**

3.109**motorized cleaning head**

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

NOTE The permanently attached main cleaning head is not regarded as a **motorized cleaning head**

3.Z101**guard**

part of the machine specifically designed to provide protection by means of a physical barrier

3.Z102**operator**

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

3.Z103**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 The chemical designation formula of for dodecyl sodium sulphate is $C_{12}H_{25}NaSO_4$.

3.Z104**risk**

probability of being exposed to an injury or damage to health

3.Z105**commercial use**

intended use of machines covered by this standard in a professional way.

For the purpose of this standard **commercial use** may be read as not intended for domestic use

4 General requirement

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

Replace the first paragraph by the following:

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.

Addition:

5.Z101 The **test solution** is to be stored in a cool atmosphere and used within seven days after its preparation.