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Household and similar electrical appliances - Safety - Part 2-58: Particular requirements for commercial electric dishwashing machines

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Pomivalni stroji

Dishwashers

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60335-2-58:2005/A12

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English Version

**Household and similar electrical appliances - Safety -
Part 2-58: Particular requirements for commercial electric
dishwashing machines**

Appareils électrodomestiques et analogues - Sécurité -
Partie 2-58: Règles particulières pour les lave-vaisselle
électriques à usage collectif

Sicherheit elektrischer Geräte für den Hausgebrauch und
ähnliche Zwecke - Teil 2-58: Besondere Anforderungen für
elektrische Spülmaschinen für den gewerblichen Gebrauch

This amendment A12 modifies the European Standard EN 60335-2-58:2005; it was approved by CENELEC on 2015-06-22. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 CEN-CENELEC Management Centre or to any CENELEC member.

This amendment 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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European foreword

This document (EN 60335-2-58:2005/A12:2016) has been prepared by CLC/TC 61 "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-07-22
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-01-22

This amendment supplements or modifies the corresponding clauses of EN 60335-1:2012 and its amendments, EN 60335-2-58:2005, EN 60335-2-58:2005/A1:2008, EN 60335-2-58:2005/A11:2010 and EN 60335-2-58:2005/A2:2015.

This Part 2 applies in conjunction with EN 60335-1:2012 and its amendments, which is referred to in this text as "Part 1". This Part 2 supplements or modifies the corresponding clauses of Part 1 as indicated in the text.

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.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60335-2-58 are prefixed "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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

EN 60335-2-58:2005/A12:2016**Introduction***Replacement:*

This European Standard has been prepared to provide a means of conforming to essential safety requirements of the Machinery Directive 2006/42/EC. Other requirements and other EU Directives may be applicable to the machines falling within the scope of this standard.

This standard is a product family standard dealing with the safety of commercial electric dishwashing machines and takes precedence over horizontal and generic standards covering the same subject.

This standard recognises the level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of commercial electric dishwashing machines when operated as in normal use taking into account the manufacturer's instructions. It also covers any reasonably foreseeable misuse of the machinery and takes into account the way in which electromagnetic phenomena can affect the safe operation of commercial electric dishwashing machines.

A commercial electric dishwashing 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.

This standard takes into account the requirements of HD 60364-1 as far as possible so that there is compatibility with the wiring rules when the machinery is connected to the supply mains. However, national wiring rules may differ.

Pressurized components incorporated in machines within the scope of this standard are pressure equipment which is classified no higher than category I of the Pressure Equipment Directive (2014/68/EU). According to Article 1, item 2.f of the Pressure Equipment Directive, this equipment is excluded from its scope.

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1 Scope

Add after the first paragraph:

These dishwashing machines are designed to be connected to hot and/or cold water supply. Dishwashing machines making use of steam or hot water for heating purposes are also within the scope of this standard.

Replace the second dashed item in NOTE 103 by the following:

- in some 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.

Add the following dashed item in NOTE 103:

- for scrapping of appliances, additional requirements may be necessary.

Delete NOTE 104.

Addition:

This standard does not apply to

- appliances designed exclusively for industrial purposes, for example machines used in the food industry for cleaning receptacles that serve as packaging for final products (e.g. bottle-cleaning machines);
- dishwashers that do not form one functional unit, for example where a transportation device transfers the load from one separate unit to another;
- separately driven transport devices not confined in the appliance;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);
- conveyor dishwashers (EN 50416).

2 Normative references

Add the following normative references to Clause 2 of EN 60335-1:2012:

EN 60704-1:2010, *Household and similar electrical appliances – Test code for the determination of airborne noise – Part 1: General requirements* (IEC 60704-1:2010)

EN ISO 3744, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane* (ISO 3744)

EN ISO 3746, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Survey method using an enveloping measurement surface over a reflecting plane* (ISO 3746)

EN ISO 4871, *Acoustics – Declaration and verification of noise emission values of machinery and equipment* (ISO 4871)

EN ISO 9614-2, *Acoustics – Determination of sound power levels of noise sources using sound intensity – Part 2: Measurement by scanning* (ISO 9614-2)

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EN ISO 11201, *Acoustics – Noise emitted by machinery and equipment – Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections* (ISO 11201)

EN ISO 11203, *Acoustics – Noise emitted by machinery and equipment – Determination of emission sound pressure levels at a work station and at other specified positions from the sound power level* (ISO 11203)

3 Terms and definitions

3.1 Replacement:

For the purpose of this document, the term “appliance” as used in Part 1 is to be read as “commercial electric dishwashing machine”.

Addition:

3.Z101

guard

part of the appliance specially designed to provide protection by means of a physical barrier

3.Z102

operator

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

3.Z103

workstation

place, as defined in the technical documentation of the relevant appliance, where the **operator** has to be in attendance to operate, or to adjust, or to control the appliance

EXAMPLE The location where the **operator** loads the appliance.

4 General requirement

Replace the text as follows:

This clause of Part 1 is applicable except as follows.

Replace the first paragraph by the following:

Appliances 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.

7 Marking and instructions

7.1 *Add the following text before “In addition, appliances shall be marked with”:*

Replace the fourth and fifth dashed items by:

- business name and full address of the manufacturer and, where applicable, his authorized representative;
- model or type reference, serial number, if any, and production year;

NOTE Z1 Production year is the year when the production process is completed. The production year can be a part of the serial number.

Add a new dashed item:

- designation of the appliance. The designation can be a combination of letters and/or numbers and shall enable to identify the machine as specified in the instructions.

7.12 *Add the following text before the second paragraph:*

The front cover of the instructions shall include the substance of the following warning:

CAUTION: Read the instructions before using the appliance.

This wording may be replaced by symbols ISO 7000-0434 and ISO 7000-0790.

Addition:

If symbols IEC 60417-5021, ISO 7000-0434 or ISO 7000-0790 are used on the product or in the instructions, their meaning shall be explained.

The instructions shall contain at least the following information:

- the business name and full address of the manufacturer and where applicable his authorised representative;
- model or type reference of the appliance as marked on the appliance itself, except for the serial number;
- the general description of the appliance, when needed due to the complexity of the appliance;
- the designation of the appliance together with its explanation in case it is given by a combination of letters and/or numbers;

NOTE Z1 It is essential that the designation enable the identification of the appliance as specified in the instructions.

- the intended use of the appliance as covered by the scope of this standard;
- the meaning of the symbols used on the appliance and in the instructions;
- drawings, diagrams, descriptions and explanations necessary for the safe use, maintenance and repair of the appliance and for checking its correct functioning;
- information regarding putting into service, safe operation, handling, transportation, storage of the appliance taking into account its weight and, if necessary, instructions for the training of **operators**;

NOTE Z2 General rules on schedules concerning transportation requirements and tests can be found in EN ISO 4180.

- instructions to enable adjustment and maintenance to be carried out safely, including the protective measures that should be taken during these operations;
- the conditions in which the machinery meets the requirement of stability during use, transportation, assembly, dismantling when out of service, testing or foreseeable breakdowns;
- the operating method to be followed in the event of accident or breakdown to prevent unsafe actions;
- the possible reasonably foreseeable misuse and, whenever relevant, a warning against the effects it may have on the safe use of the appliance.

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The words 'Original instructions' shall appear on the language version(s) verified by the manufacturer or by the authorised representative.

When a translation of the original instructions has been provided by a person introducing the appliance on the market, the meaning of the sentence 'Translation of the original instructions' has to appear in the relevant instructions delivered with the appliance.

The instructions needed for maintenance/service to be done by specialised personnel, mandated by the manufacturer or the authorised representative, may be supplied in only one Community language which the specialised personnel understand.

The instructions shall indicate the type and frequency of inspections and maintenance required for safe operation including the preventive maintenance measures.

7.12.1 Replace the 4th sentence of the 1st paragraph as follows:

They shall include a warning that the appliance is not to be cleaned with a water jet, a high pressure cleaner or a steam cleaner.

Replace the last paragraph of the replacement by the following:

In addition, for appliances incorporating **induction heating sources**, the instructions shall give recommendations regarding the rating and type of the additional **protective devices**, such as residual-current device(s), to be installed.

Add the following new subclauses:

7.12.1.Z101 Instructions shall be given, when necessary, concerning safe handling and transportation on the packed appliance or have to be delivered together with the package.

7.12.1.Z102 The instructions shall include a warning that the appliance shall be disconnected from its power source during maintenance and when replacing parts.

7.12.1.Z103 Information shall be given that only authorised spare parts have to be used in the event of failure.

7.12.1.Z104 The instructions shall include a noise emission declaration as determined and indicated in Annex ZAA.

This includes

- the A-weighted emission sound pressure level at **workstations**, where this exceeds 70 dB(A). If the A-weighted sound pressure level is below 70 dB, however no value needs to be given, but the instructions shall state that the A-weighted sound pressure level is below 70 dB,
- the A-weighted sound power level emitted by the appliance, where the A-weighted emission sound pressure level at **workstations** exceeds 80 dB(A).

19 Abnormal operation

19.11.4.8 Replace the second sentence in the requirement of Part 1 by:

The appliance shall continue to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage fluctuation occurred, or a manual operation shall be required to restart it.

20 Stability and mechanical hazards

20.1 Addition:

The appliance together with its delivery packaging shall have adequate stability during transportation, assembly, dismantling, scrapping. It shall be constructed in such a way that overturning is prevented; if possible by designing inbuilt stability, i.e. the base point of the centre of gravity shall lie within the polygon of support.

Compliance is checked by inspection.

20.2 Replacement:

Dangerous moving transmission parts shall be safeguarded either by design or **by guards**. When **guards** are used, they shall be fixed **guards**, interlocking movable **guards** or protective devices.

NOTE Z1 Parts of the enclosure can fulfil the guarding function.

Moving parts directly involved in the function of the appliance which cannot be made completely inaccessible shall be fitted with

- fixed **guards** or interlocking movable **guards** preventing access to those sections of the parts that are not used in the work, and
- adjustable **guards** restricting access to those sections of the moving parts where access is necessary.

21 Mechanical strength

21.1 Replace the first two paragraphs by the following:

Appliances and their components and fittings shall have adequate mechanical strength and be constructed to withstand such rough handling that may be expected in normal use, during transportation, assembly, dismantling and scrapping the appliance.

Compliance is checked by verifying the instructions and by applying blows to the appliance in accordance with test Ehb of EN 60068-2-75, the spring hammer test.

22 Construction

22.108 Replacement:

In case of interruption, re-establishment after an interruption or fluctuation in whatever manner of the power supply, the appliance shall not restart; however, automatic restarting of the operation is allowed if the appliance may continue to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage interruption or fluctuation occurred.

Compliance is checked by inspection.

Add the following new subclauses:

22.Z109 Interlocking movable **guards** shall, as far as possible, remain attached to the appliance when open and they shall be designed and constructed in such a way that they can be adjusted only by means of an intentional action.

Interlocking movable **guards** must be designed in such a way that the absence or failure of one of their components prevents starting or stops the hazardous functions of the appliance.

Compliance is checked by inspection.