SLOVENSKI STANDARD
oSIST prEN 50416:2026

01-junij-2026

Gospodinjski in podobni električni aparati - Varnost - Posebne zahteve za komercialne električne prenosne pomivalne stroje

Household and similar electrical appliances - Safety - Particular requirements for commercial electric conveyor dishwashing machines

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke - Besondere Anforderungen für Transportspülmaschinen für den gewerblichen Gebrauch

Appareils électrodomestiques et analogues - Sécurité - Exigences particulières pour les lave vaisselle à convoyeur à usage collectif

Ta slovenski standard je istoveten z: **prEN 50416:2026**

ICS:

97.040.40	Pomivalni stroji	Dishwashers

oSIST prEN 50416:2026 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 50416

April 2026

ICS 97.040.40

Will supersede EN 50416:2005; EN 50416:2005/A1:2015

English Version

Household and similar electrical appliances - Safety - Particular requirements for commercial electric conveyor dishwashing machines

Appareils électrodomestiques et analogues - Sécurité - Règles particulières pour les lave-vaisselle à convoyeur à usage collectif

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke - Besondere Anforderungen für Transportspülmaschinen für den gewerblichen Gebrauch

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2026-07-10.

It has been drawn up by CLC/TC 61.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CENELEC 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

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Project: 80832

Ref. No. prEN 50416:2026 E

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European foreword

This document (prEN 50416:2026) has been prepared by CLC/TC 61 “Safety of household and similar electrical appliances”.

This document is currently submitted to the Enquiry.

The following dates are proposed:

• latest date by which the existence of this document has to be announced at national level	(doa)	dav + 6 months
• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	dav + 12 months
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	dav + 36 months (to be confirmed or modified when voting)

This document will supersede EN 50416:2005 and all of its amendments and corrigenda (if any).

prEN 50416:2026 includes the following significant technical changes:

— addition of significant mechanical hazards;

— addition of hygienic aspects.

This document has been prepared under a standardization request addressed to CENELEC by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZZB, which is an integral part of this document.

Secretary’s note: The text contained in the Secretary’s notes will be removed from the standard before publication, as it is provided solely to inform stakeholders about the reasons for introducing the European common modifications.

Introduction

This document has been prepared to provide a means of conforming to essential safety requirements of the Machinery Regulation (EU) 2023/1230. Other requirements and other EU Directives may be applicable to the appliances falling within the scope of this European Standard.

This document is a product family standard dealing with the safety of commercial electric conveyor dishwashing machines and takes precedence over horizontal and generic standards covering the same subject. This document also covers relevant hygiene aspects.

This document recognizes the level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of commercial electric **conveyor dishwashing machines** when operated as in normal use taking into account the 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 **conveyor dishwashing machines**.

A commercial electric **conveyor dishwashing machine** that complies with the text of this document will not necessarily be considered to comply with the safety principles of the document if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

This document 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 document 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.

The official compliance dates for the standard(s) are given in the Official Journal of the European State (OJEU) otherwise the DOW as indicated in European Foreword is applicable.

1 Scope

This clause of Part 1 is replaced with the following.

This document deals with the safety of electrically operated commercial **conveyor dishwashing machines** for washing dishes, glassware, cutlery and similar reusable articles, with or without means for water heating or drying, not intended for household and similar purposes, their **rated voltage** being not more than 250 V for single-phase appliances connected between one phase and neutral and 480 V for other appliances.

These **conveyor 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 document.

These appliances are used by experts or instructed persons for commercial dishwashing in **areas not open to the public,** for example in kitchens of restaurants, canteens, hospitals, and in commercial enterprises such as bakeries and butcheries.

NOTE 101 Examples of such appliances are:

— flight conveyor dishwashing machine;

— rack conveyor dishwashing machine.

Requirements to avoid backsiphonage of non-potable water into the water mains are specified in Annex BB.

This document deals with specific requirements on noise emitted from these appliances because the generated noise can be L_{pA} > 70 dB(A) and is considered to be a relevant hazard. See Clause 7.12.104, 22.115 and Annex CC.

The electrical part of appliances making use of other forms of energy is also within the scope of this document.

This document deals with the reasonably foreseeable hazards presented by appliances that are encountered by all persons in and around the installation place or workplace.

NOTE 102 Attention is drawn to the fact that:

— for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements can be necessary;

— in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities and similar authorities;

— in many countries, additional requirements are specified for appliances incorporating pressurized parts;

— for scrapping of appliances, additional requirements can be necessary.

This document does not apply to:

— commercial electric dishwashing machines under EN IEC 60335-2-58;

— 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) and machines used in manufacturing processes;

— gas heated appliances which are part of the **conveyor dishwashing machines**;

— movable appliances;

— dishwashing machines 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);

— sterilizers and washer-disinfectors used to treat medical materials (EN IEC 61010-2-040).

With this European revision 2.0 of the document, the EN 50416:2005 [1]is superseded.

This European revision 2.0 of the document, supplements or modifies the corresponding clauses of the standards below:

— EN IEC 60335-1:2023+A11:2023+prA12:2026.

Secretary's note: The above addition has been moved from the Introduction (informative text) to the Scope (normative text) of the standard following discussions with the HAS consultants. According to an EC decision (document GROW.H.3/SM/MH/DT 12/1/2024), Part 1 must be referenced by date in Part 2. Consequently, the standard has been included in Clause 2, "Normative references".

This document contains requirements for appliances with **radio function**, **remote communication**, and **remote operation**.

For the scope of this document, the term **radio appliance** is used with the same meaning of radio equipment.

For the scope of this document, the term appliance is used with the same meaning of equipment.

Secretary's note: the above sentence has been modified in base of the RED HAS comment. The same sentence are included also in Clause 3 "Term and Definitions"

Compliance with this Part 2 when used together with the Part 1 provides one means of conformity with the safety objectives as listed in Table ZZB.1

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

EN IEC 60335-1:2023,[2] *Household and similar electrical appliances - Safety - Part 1: General requirements*

Secretary's note: Part 1 (EN IEC 60335-1:2023 + A11:2023 + prA12:2026) shall not be included in Annex ZA, in accordance with document BT181/DG17869/DV, "Guidance document for the preparation of Annex ZA".

[1] As impacted by EN 50416:2005+A1:2015.

[2] As impacted by EN IEC 60335-1:2023/A11:2023 and EN IEC 60335-1:2023/prAB:2026 (under preparation - Project 78895).

EN 60436:2020, *Electric dishwashers for household use - Methods for measuring the performance (IEC 60436:2015, modified)*

EN 60204-1:2018, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:2016, modified)*

EN ISO 3744:2010, *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 3744:2010)*

EN ISO 3746:2010, *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 3746:2010)*

EN ISO 4871:2009, *Acoustics - Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 9614-2:1996, *Acoustics - Determination of sound power levels of noise sources using sound intensity - Part 2: Measurement by scanning (ISO 9614-2:1996)*

EN ISO 11201:2010, *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 11201:2010)*

EN ISO 11202:2010,[3] *Acoustics – Noise emitted by machinery and equipment – Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections (ISO 11202:2010)*

EN ISO 11203:2009,[4] *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 11203:1995)*

EN ISO 11688-1:2009, *Acoustics - Recommended practice for the design of low-noise machinery and equipment - Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 13849-1:2023, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1:2023)*

ISO 1817:2024, *Rubber, vulcanized or thermoplastic – Determination of the effect of liquids*

3 Terms and Definitions

This clause of Part 1 is applicable except as follows.

Addition:

*This standard contains requirements for appliances with **radio function**, **remote communication**, and **remote operation**.*

*For the scope of this document, the term **radio appliance** is used with the same meaning of radio equipment.*

For the scope of this document, the term appliance is used with the same meaning of equipment.

Secretary's note: the above sentence has been modified in base of the RED HAS comment. The same sentence are included also in Clause 1 "Scope"

[3] As impacted by EN ISO 11202:2010/A1:2021.

[4] As impacted by EN ISO 11203:2009/A1:2020.

3.1 Definitions relating to physical characteristics

Replace:

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

3.1.4 *Replace the Note 1 to entry:*

The **rated power input** is the sum of the power inputs of all the individual elements in the appliance that can be on at one time; where there are several such combinations possible, that giving the highest power input is used in determining the **rated power input**.

3.1.9 *Replace*:
normal operation
conditions under which the appliance is operated in normal use when it is connected to the supply mains

Note 1 to entry: The appliances are operated continuously. Appliances are operated in accordance with the instructions for use, but with the controls intended to be set by the user set at maximum or that setting giving the most unfavourable temperature results

Note 2 to entry: Appliances intended to be connected to a water supply are connected to a water supply having the pressure and temperature specified in the instructions

Note 3 to entry: If a range of temperatures and pressures is specified in the instructions, then the water supply is at the conditions within the range that will give the most unfavourable temperature results. Water inlets intended for cold water only are connected to a source supplying water at a temperature of 15 °C ± 5 °C

Note 4 to entry: The appliance is filled with the maximum quantity of water for which it is designed, without detergents or rinsing agents. The appliance is tested without dishes

3.5 Definitions relating to types of appliances

Add:

3.5.101
conveyor dishwashing machine
appliance in which the **wash ware carriers** loaded with **wash ware** are automatically conveyed with a **conveyor system** through the machine during the cleaning process

Note 101 to entry: A distinction is made between the following machine designs:

— Flight conveyor dishwashing machine in which the wash ware is conveyed through the machine automatically on an endless conveyor. See Figure 104.

— Rack conveyor dishwashing machine in which racks loaded with wash ware are conveyed through the machine automatically by a rack transporting system. See Figure 105.

Note 102 to entry: Conveyor dishwashing machines can include different zones. See Figure 103.

[SOURCE: EN 17735:2022, 3.4.2 modified]

3.6 Definitions relating to parts of an appliance

3.6.101
conveyor system
mechanism for transporting the **wash ware** loaded on the **wash ware carriers** along a predetermined path from the loading zone to the unloading zone through the **conveyor dishwashing machine**

3.6.102
wash ware carrier
device for holding and/or supporting **wash ware** in the optimum orientation for cleaning

Note 101 to entry: The wash ware carrier can be e.g., racks, conveyor belts, cutlery trays

[SOURCE: EN 17735:2022, 3.3]

3.6.103
cleaning opening
opening that permits access to the **functional zone** beyond the **normal operation**

3.6.104
strainer opening
opening that permits access to the **functional zone** for cleaning the strainer during **normal operation**

3.6.105
interior
all parts of the dishwashing machine which come into contact with detergent solution, rinse aid solution or the **wash ware** during the cleaning process as intended

[SOURCE: EN 17735:2022, 3.19]

3.6.106
exterior
all parts of the dishwashing machine which do not come into contact during the cleaning process with detergent solution and rinse aid solution (e.g. pedestals, adjustable feet, handles, casing) but which are accessible from outside

[SOURCE: EN 17735:2022, 3.20]

3.6.107
functional surface
surface that is intentionally heated by an internal heat source and has to be hot to carry out the function for which the appliance is intended

Note 101 to entry: An example is the heating element in a drying zone

3.6.108
adjacent surface
surface that is adjacent to a **functional surface** and which can become hot through conduction

Note 101 to entry: An example is the surface of a blower unit in the drying zone

3.7 Definitions relating to safety components

3.7.101
guard
part of the appliance specially designed to provide protection by means of a physical barrier

[SOURCE: EN IEC 60335-1:2023/A11:2023, 3.ZE1]

3.7.102
conveyor limit switch
shut-off device for **wash ware** or **wash ware carrier** detection at the end of unloading zone to shut down the conveyor system

3.7.103
blocking device
device ensuring that the vertical lift door does not close completely after the **locking device** is released

3.7.104
locking device
device ensuring that the vertical lift door remains open

3.8 Definitions relating to miscellaneous matters

3.8.101
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

Note 101 to entry: An example is the location where the operator loads the appliance.

[SOURCE: EN IEC 60335-1:2023/A11:2023, 3.ZE3; Note modified]

3.8.102
operator
person operating, adjusting or cleaning the appliance

[SOURCE: EN IEC 60335-1:2023/A11:2023, 3.ZE2]

3.8.103
functional zone
enclosed zone to which only instructed personnel is authorized to have access to carry out checks on correct operation and cleaning operations

3.8.104
wash ware
articles and utensils that come into contact with food and re-usable crates/containers that are cleaned in a dishwashing machine

Note 101 to entry: Examples of wash ware are plates, crockery, cutlery, glasses, kitchen utensils, pots, containers, crates and trays made of materials such as porcelain, plastic, glass, stainless steel and silver as well as coated materials.

[SOURCE: EN 17735:2022, 3.1]

3.8.105
cleanable
designed and constructed so that soils can be removed

3.8.106
easily cleanable
designed and constructed to be cleanable by a simple cleaning method, where necessary after removing easily dismountable parts

3.8.107
area open to the public
area in which the general public, including children, can have access

Note 101 to entry: Examples are canteens and self-service restaurants.

4 General requirement

This clause of Part 1 is applicable except as follows:

Replace the first paragraph with 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. The appliance shall not pose any danger during installation, adjusting, maintenance, cleaning, repairing, while being at a standstill, transportation or at disposal at the end of life.

5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

5.3 *Add:*

The tests of 22.6 are carried out before the tests of Clause 19.

5.101 *Appliances are tested as* ***motor-operated appliances****, even if they incorporate a heating element.*

Appliances incorporating means for heating water, but that may also be operated without the heating elements being energized, are tested without the heating elements energized should this be more unfavourable.

5.102 *Appliances, when assembled in combination with or incorporating other appliances, are tested in accordance with the requirements of this standard. The other appliances are operated simultaneously in accordance with the requirements of the relevant standards.*

6 Classification

This clause of Part 1 is applicable except as follows.

6.1 *Replace:*

Appliances shall be **class I** with respect to protection against electric shock.

Compliance is checked by inspection and by the relevant tests.

6.2 *Replace:*

Appliances shall be at least IPX4 with respect to protection against harmful ingress of water.

Compliance is checked by inspection and by the relevant tests.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 Replace of the fourth and fifth dashed items with:

— business name, full address and website, e-mail address or other digital contact of the manufacturer and, where applicable, of its authorized representative;

— model or type reference, serial number and production year;

NOTE 101 Production year is the year when the production process is completed. The production year can be a part of the serial number.

Add:

— the maximum permissible steam pressure, in kilopascals (kPa);

— the maximum permissible hot water pressure, in kilopascals (kPa);

— the maximum permissible water, steam and hot water temperatures in degrees Celsius;

— the water pressure or range of pressure, in kilopascals (kPa), for the appliances intended to be connected to a water supply;

— 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 *Delete the original text starting with* "This appliance is not intended for use by persons (including children)…" up to "…do not play with the appliance" *and the corresponding European modification.*

Delete: "WARNING: The power supply shall be disconnected from the appliance during user maintenance."

Add:

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 with symbols specified by ISO 7000-0434A:2004-01 and ISO 7000-0790:2004-01.

The instructions shall include the substance of the following information:

— the business name and full address of the manufacturer and where applicable of its authorized 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 if it is given by a combination of letters and/or numbers;

— the intended use of the appliance as covered by the scope of this document;

— 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;