IEC 60335-2-62

Edition 5.0 2024-09
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Household and similar electrical appliances – Safety – Part 2-62: Particular requirements for commercial electric rinsing sinks

IEC 60335-2-62:2024-09 RLV(en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 97.040.50

ISBN 978-2-8322-9731-5

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-62: Particular requirements for commercial electric rinsing sinks

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60335-2-62:2019. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60335-2-62 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2019. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) alignment with IEC 60335-1:2020;
b) deletion or conversion of some notes to normative text (Clause 1, 7.15, 11.7, 22.103, 27.2);
c) clarification that commercial electric rinsing sinks are not intended to be used in areas open to the public (Clause 1);
d) alignment of some requirements with the standards for commercial catering appliances (Clause 1, 5.101, 11.4, 11.7, 15.1.1, 22.101, 22.102, 22.103, 23.3, 25.3, 27.2).

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

Draft	Report on voting
61/7269/FDIS	61/7292/RVD

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/publications.

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, can be found on the IEC website.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments unless that edition precludes it; in that case, the latest edition that does not preclude it is used. It was established on the basis of the sixth edition (2020) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Particular requirements for commercial electric rinsing sinks.

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 in Part 1 is to be adapted accordingly.

NOTE 2 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.

NOTE 3 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.

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

- reconfirmed,
- withdrawn, or
- revised.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations can need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months from the date of publication.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

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

Guidance documents concerning the application of the safety requirements for appliances can be accessed via TC 61 supporting documents on the IEC website

https://www.iec.ch/tc61/supportingdocuments

This information is given for the convenience of users of this International Standard and does not constitute a replacement for the normative text in this standard.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances 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 appliances.

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 appliance is connected to the supply mains. However, national wiring rules ~~may~~ can differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 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.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

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

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

An appliance 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.

An appliance 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.

NOTE 3 Standards dealing with non-safety aspects of household appliances are:

– IEC standards published by TC 59 concerning methods of measuring performance;
– CISPR 11, CISPR 14-1 and relevant IEC 61000-3 series standards concerning electromagnetic emissions;
– CISPR 14-2 concerning electromagnetic immunity;
– IEC standards published by TC 111 concerning environmental matters.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-62: Particular requirements for commercial electric rinsing sinks

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of electrically operated commercial **rinsing sinks** used in commercial kitchens, 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.

~~NOTE 101~~ These appliances are not intended for household and similar purposes. They are used in areas not open to the public, for example in kitchens of restaurants, canteens, hospitals and commercial enterprises such as bakeries~~,~~ and butcheries~~, etc.~~

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

As far as is practicable, this standard deals with the common hazards presented by these types of appliances.

~~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;
– for appliances intended to be used in tropical countries, special 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.

~~NOTE 103~~ This standard does not apply to

– appliances designed primarily for sterilizing to clinical standards;
– dishwashers (IEC 60335-2-58);
– appliances designed exclusively for industrial purposes;
– 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).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60584-1, *Thermocouples – Part 1: EMF specifications and tolerances*

ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel – Part 1: Bolts, screws and studs with specified property classes – Coarse thread and fine pitch thread*

ISO 3506-1, *Fasteners – Mechanical properties of corrosion-resistant stainless steel fasteners – Part 1: Bolts, screws and studs with specified grades and property classes*

ISO 3506-2, *Fasteners – Mechanical properties of corrosion-resistant stainless steel fasteners – Part 2: Nuts with specified grades and property classes*

ISO 3506-3, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 3: Set screws and similar fasteners not under tensile stress*

ISO 3506-4, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 4: Tapping screws*

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

3.1 Definitions relating to physical characteristics

3.1.4 *Addition:*

Note 101 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 ~~*Replacement*~~ *Modification:*
normal operation

Replace the first paragraph with the following:

operation of the appliance under the following conditions:

Appliances are operated in accordance with the instructions, with all the controls intended to be operated by the user adjusted to their maximum setting. Lids and covers, if any, are placed in their intended position.

Appliances intended to be filled by hand or by a manually operated tap are filled to the **indicated level**.

Where several levels are marked, that giving the most unfavourable conditions is used.

Appliances intended to be filled automatically are connected to a water supply having the pressure designated by the manufacturer.

Where the manufacturer specifies a range of pressures, the pressure is adjusted to that giving the most unfavourable conditions.

The temperature of the water supplied is 15 °C ± 5 °C.

Motors incorporated in the appliance are operated in the intended manner, under the most ~~severe~~ unfavourable conditions that can be expected in normal use taking into account the instructions.

3.5 Definitions relating to types of appliances

3.5.101
rinsing sink
appliance intended for rinsing crockery, cutlery chopsticks and utensils with water heated in the appliance itself

3.8 Definitions relating to miscellaneous matters

3.8.101
indicated level
mark on the appliance to indicate the maximum liquid level for correct operation

3.8.102
installation wall
special fixed construction containing supply facilities for appliances installed in conjunction with it

4 General requirement

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

5.10 *Addition:*

Appliances intended for installation in a bank of other appliances and appliances intended to be fixed to an ***installation wall*** *are enclosed to obtain protection against electric shock and harmful ingress of water equivalent to that when installed in accordance with the instructions provided with the appliance.*

NOTE 101 Appropriate enclosures or additional appliances can be needed for test purposes.

5.101 *Appliances are tested as* ***heating appliances****, ~~even if they incorporate a motor~~ when during a mode of operation electrical heaters are energized. If no electrical heaters are energized, the appliances are tested as* ***motor-operated appliances.***

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 *Replacement:*

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

Compliance is checked by inspection and by the relevant tests.

6.2 *Addition:*

Appliances ~~normally~~ intended to be used on a table shall be at least IPX3. Other appliances shall be at least IPX4.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 *Addition:*

Appliances shall be marked with the water pressure or range of pressures, in kilopascals (kPa), for appliances intended to be connected to a water supply, unless this is indicated in the instructions.

7.12 *Addition:*

If symbol IEC 60417-5021 (2002-10) is marked on the appliance its meaning shall be explained.

The instructions shall warn on potential injury and state that the tableware shall be free from sharp food residues like sharp fish bones or bone fragments before being put into the appliance.

The instructions shall include the substance of the following:

> These appliances are intended to be used for commercial applications, for example in kitchens of restaurants, canteens, hospitals and in commercial enterprises such as bakeries, butcheries, etc.

If the manufacturer wants to limit the use of the appliance to less than the above, this has to be clearly stated in the instructions.

If the water temperature exceeds 45 °C the instructions shall include the substance of the following:

> WARNING – The water temperature is high. Protective gloves must be worn to protect against injury.

Modification:

The instructions concerning persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge and children playing with the appliance are not applicable.

7.12.1 *Addition:*

For appliances intended for installation in a bank of other appliances and appliances intended to be fixed to an **installation wall**, details of how to ensure appropriate protection against electric shock and harmful ingress of water shall be supplied. If the controls of more than one appliance are combined in a separate enclosure, detailed installation instructions shall be supplied. Instructions for **user maintenance**, for example cleaning, shall also be given. They shall include a statement that the appliance is not to be cleaned with a water jet or a steam cleaner.

For appliances that are permanently connected to fixed wiring and for which leakage currents ~~may~~ can exceed 10 mA, particularly if disconnected or not used for long periods, or during initial installation, the instructions shall give recommendations regarding the rating of **protective devices**, such as earth leakage relays, to be installed.

If a **stationary appliance** is intended to be moved for cleaning, this shall be stated.

For **stationary appliances** equipped with rollers or castors or intended to be moved for cleaning, the instructions shall state the substance of the following.

> This appliance is to be connected with flexible connections for equipotential bonding and connection to services such as electricity supply, water supply, gas supply and steam supply such that the appliance can be moved in the direction required for cleaning at a distance not less than the dimension of the appliance in the direction of movement plus 500 mm without the flexible connections becoming taut or being subject to strain.

7.12.4 *Addition:*

The instructions for **built-in appliances** having a separate control panel for several appliances shall state that the control panel is only to be connected to the specified appliances in order to avoid a possible hazard.

7.15 *Addition:*

For **fixed appliances**, the marking of the name or trademark or identification mark of the manufacturer or responsible vendor and the model or type reference shall be marked on the appliance and, if not visible when the appliance is installed as in normal use, shall be included in the instructions or on an additional label that can be fixed near the appliance after installation.

~~NOTE 101 An example of such an appliance is a **built-in appliance**.~~

7.101 Appliances intended to be filled by hand or a manually operated tap shall be marked with an **indicated level**.

Compliance is checked by inspection.

8 Protection against access to live parts

This clause of Part 1 is applicable except as follows:

8.101 Heating elements that are liable to be touched accidentally by a fork or similar pointed object in normal use shall be so protected that it is not possible to touch their **live parts** with such an object.

Compliance is checked by inserting test probe 12 of IEC 61032 at all points where the probe can enter in the vicinity of live parts. ~~*The probe is applied with a force not exceeding 1 N.*~~

9 Starting of motor-operated appliances

This clause of Part 1 is not applicable.

10 Power input and current

This clause of Part 1 is applicable except as follows.

10.1 *Addition:*

For appliances having more than one heating unit, the total power input may be determined by measuring the power input of each heating unit separately (see also 3.1.4).

11 Heating

This clause of Part 1 is applicable except as follows.

11.2 *Addition:*

Appliances intended to be fixed to the floor and appliances with a mass greater than 40 kg and not provided with rollers, castors or similar means for moving the appliance are installed in accordance with the manufacturer's instructions. If no instructions are given, these appliances are considered as appliances ~~normally~~ intended to be placed on the floor.

11.3 *Addition:*

*Where the external **accessible surfaces** are suitably flat and access permits, then the test probe of Figure 101 is used to measure the temperature rises of external **accessible surfaces** specified in Table 101. The probe is applied with a force of 4 N ± 1 N to the surface in such a way that the best possible contact between the probe and the surface is ensured. The measurement is performed after a contact period of 30 s.*

The probe may be held in place using a laboratory stand clamp or similar device. Any measuring instrument giving the same results as the probe may be used.

The water temperature is measured 25 mm below the centre of the liquid surface. However, the distance from the heating element shall be at least 10 mm.

11.4 *Replacement:*

*Appliances are operated under **normal operation** such that the total power input of the appliance is 1,15 times **rated power input**. If it is not possible to switch on all heating elements at the same time, the test is made with each of the combinations that the switch arrangement will allow, the highest load possible with each switching arrangement being in circuit.*

If the appliance is provided with a control that limits the total power input, the test is made with whichever combination of heating units, as ~~may~~ can be selected by the control, imposes the most ~~severe~~ unfavourable condition.

*If the temperature rise limits of motors, transformers or electronic circuits are exceeded, the test is repeated with the appliance supplied at 1,06 times **rated voltage**. In this case, only the temperature rises of ~~motors, transformers or electronic circuits~~ the components for which the temperature rise limits were exceeded are measured.*

11.7 *Modification*:

Replace the first paragraph with the following:

Appliances are operated until steady conditions are established.

*Steady conditions are considered to exist 60 min after reaching the temperatures defined for **normal operation**.*

~~*Replacement*~~ *Addition:*

When an appliance is assembled in combination with, equipped with or incorporating accessories or other appliances, the interactions shall be covered if they are provided to operate simultaneously as stated by the manufacturer or by a common control.

~~NOTE 101 The duration of the test can consist of more than one cycle of operation.~~

11.8 ~~*Addition*~~ *Modification:*

Replace the first paragraph with the following:

During the test, the temperature rises are monitored continuously and shall not exceed the values shown in Table 3 and Table 101.

Addition:

For appliances that require manual assistance for cleaning, the water temperature shall not exceed 55 °C.

Table 101 – Maximum temperature rises for specified external accessible surfaces under normal operating conditions

Surface [a]	***Temperature rise of external accessible surfaces*** [b] ***K***
Bare metal	*48*
Coated metal [c]	*59*
Glass and ceramic	*65*
Plastic and plastic coating > 0,4 mm [d]	*74*
NOTE The temperature rise limits of handles, knobs, grips, keyboards, keypads and similar parts are specified in Table 3.	
[a] *Temperature rises are not measured on:* – *the underside of appliances intended to be used on a working surface or floor;* – *the rear surface of appliances;* – *surfaces that are inaccessible to a 75 mm diameter probe having a hemispherical* ~~*end applied with a force not exceeding 1 N*~~*;* – *surfaces that are submersed during* ***normal operation****.* [b] *Metal is considered coated when a coating having a minimum thickness of 90 µm made of enamel, powder or non-substantially plastic coating is used.* [c] *The temperature rise limit of plastic also applies for plastic material having a metal finish of thickness less than 0,1 mm.* [d] *When the thickness of the plastic coating does not exceed 0,4 mm, the temperature rise limits of coated metal for underlying metal apply or the temperature rise limits for glass or ceramic material for underlying glass or ceramic material apply.*	

~~*For appliances that require manual assistance for cleaning, the water temperature shall not exceed 55 °C.*~~

12 ~~Void~~ Charging of metal-ion batteries

This clause of Part 1 is applicable.

13 Leakage current and electric strength at operating temperature

This clause of Part 1 is applicable except as follows.

13.2 *Modification:*

Instead of the permissible leakage current for **stationary class I appliances**, the following *applies*:

– *for cord and plug connected appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever* is *higher*
– *for other appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with no maximum, whichever is higher*

For **portable class I appliances**, instead of the permissible leakage current, the following applies:

– *for cord and plug connected appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever is higher*

14 Transient overvoltages

This clause of Part 1 is applicable.

15 Moisture resistance

This clause of Part 1 is applicable except as follows.

15.1.1 *Addition:*

~~*IPX3 and IPX4 appliances are subjected for 5 min to the following splash test.*~~

~~*The apparatus shown in Figure 102 is used. During the test, the water pressure is so regulated that the water splashes up 150 mm above the bottom of the bowl. The bowl is placed on the floor for appliances normally used on the floor. For all other appliances, on a horizontal support 50 mm below the lowest edge of the appliance, the bowl is so moved around as to splash the appliance from all directions. Care is taken that the appliance is not hit by the direct jet.*~~

In addition, appliances, except those marked IPX5 or IPX6, are subjected for 5 min to the following splash test.

The apparatus shown in Figure 102 is used. The appliance is placed in the position of normal use and adjustable feet shall be set in accordance with the instruction for use to the most unfavourable height.

For appliances intended to be used on the floor the bowl is placed on the floor and is moved around in such a way as to splash the appliance from all directions. During the test, the water pressure is so regulated that the water splashes up 150 mm above the bottom of the bowl. The bowl is not positioned underneath the appliance.

For all other appliances the bowl is placed on the same plane where the appliance is placed and is moved around in such a way as to splash the appliance from all directions. During the test, the water pressure is so regulated that the water splashes up 100 mm above the bottom of the bowl. The bowl is not positioned underneath the appliance.

Care is taken that the appliance is not hit by the direct jet.

15.1.2 *Modification:*

Delete "or table" from the fifth paragraph.

Addition:

Appliances ~~normally~~ intended to be used on a table are placed on a support having dimensions that are 15 cm ± 5 cm in excess of those of the orthogonal projection of the appliance on the support.

15.2 *Addition:*

Appliances intended to be filled by a manually operated tap or automatically are connected to a water supply having the maximum supply pressure indicated by the manufacturer. The means for controlling the incoming water is held fully open and the filling continued for 15 min after the first evidence of overflow, or until a further protective system operates to stop the inflow.

15.101 Appliances that are provided with a tap intended for filling or cleaning shall be constructed so that the water from the tap cannot come into contact with **live parts**.

Compliance is checked by the following test.

The tap is fully opened for 1 min with the appliance connected to a water supply having the maximum water pressure indicated by the manufacturer. Tiltable and movable parts, including lids, are tilted or placed in the most unfavourable position. Swivelling outlets of water taps are so positioned as to direct water on to those parts that will give the most unfavourable result.

Immediately following this treatment, the appliance shall withstand an electric strength test as specified in 16.3.

16 Leakage current and electric strength

This clause of Part 1 is applicable except as follows.

16.2 *Modification:*

Instead of the permissible leakage current for **stationary class I appliances**, the following applies:

– *for cord and plug connected appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever is higher*
– *for other appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with no maximum, whichever is higher*

For **portable class I appliances**, instead of the permissible leakage current, the following applies:

– *for cord and plug connected appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever is higher*

17 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.

18 Endurance

This clause of Part 1 is not applicable.

19 Abnormal operation

This clause of Part 1 is applicable except as follows.

19.2 *Addition:*

Appliances are tested without water and those intended to be automatically filled are tested with the water supply turned off.

19.4 *Addition:*

The main contacts of the contactor intended for switching on and off the heating element(s) in normal use are locked in the "on" position. However, if two contactors operate independently of each other or if one contactor operates two independent sets of main contacts, these contacts are locked in the "on" position in turn.

20 Stability and mechanical hazards

This clause of Part 1 is applicable except as follows.

20.1 Addition:

Covers, lids and accessories are placed in their most unfavourable positions.

NOTE 101 Any spillage of liquid is ignored.

21 Mechanical strength

This clause of Part 1 is applicable.

22 Construction

This clause of Part 1 is applicable except as follows.

22.54 Not applicable.

22.55 Not applicable.

22.101 For ~~three~~ multi-phase appliances, **thermal cut-outs** protecting circuits with heating elements, and those for motors of which the unexpected starting ~~may~~ can cause a ~~hazard~~ risk of injury, shall be ~~of the~~ a **non-self-resetting** ~~and~~ **thermal cut-out** of the trip-free type, and shall provide **all-pole disconnection** from related supply circuits.

For single-phase appliances, and for single-phase heating elements ~~and/~~or motors connected between one phase and neutral or between phase and phase, **thermal cut-outs** protecting circuits with heating elements, and those for motors of which the unexpected starting ~~may~~ can cause a ~~hazard~~ risk of injury, shall be ~~of the~~ a **non-self-resetting** ~~and~~ **thermal cut-out** of the trip-free type, and shall provide at least one-pole disconnection.

If the **non-self-resetting thermal cut-out** is only accessible after removing parts with the aid of a **tool**, the trip-free type is not required.

NOTE ~~**Thermal cut-outs** of the Trip-free type have an automatic action, with a reset actuating member, so constructed that the automatic action is independent of manipulation or position of the reset mechanism.~~ Trip-free is an automatic action that is independent of manipulation or position of the actuating member.

Thermal cut-outs of the bulb and capillary type that operate during the tests of Clause 19 shall be such that rupture of the capillary tube shall not impair compliance with the requirements of 19.13.

Compliance is checked by inspection, by manual test and by rupturing the capillary tube in such a way that the rupture does not seal the tube.

~~*Care shall be taken to ensure that the rupture does not seal the capillary tube.*~~

22.102 Lights, switches or push-buttons ~~shall only be coloured red~~ for the indication of danger, alarm or similar situations shall be coloured red.

Compliance is checked by inspection.

22.103 Drain cocks and other emptying devices for hot liquids shall be constructed so that they cannot be opened inadvertently.

This requirement is met if the emptying device handle is such that

– when released, it returns the emptying device automatically to the closed position; or
– it is of the wheel type; or
– it is placed in a recess such that it cannot be placed in the open position by means of test probe B of IEC 61032 using a single action with a force of 10 N.

Moreover, it shall not be possible to withdraw drain plugs inadvertently.

Compliance is checked by inspection and by manual test.

~~NOTE For example, this requirement is met when the valve handle is such that, when released, it returns automatically to the closed position, or is of the wheel type or is placed in a recess.~~

22.104 Means provided to allow drainage of liquid from appliances shall discharge the liquid in such a manner that electrical insulation is not affected.

~~*Compliance is checked by inspection and by manual test.*~~

*Compliance is checked by manual test and inspection shall show that there is no trace of water on insulation that could result in a reduction of **clearances** or **creepage distances** below the values specified in Clause 29.*

22.105 The level to which manually filled appliances have to be filled shall be so located as to be readily visible when filling.

Compliance is checked by inspection.

23 Internal wiring

This clause of Part 1 is applicable except as follows.

23.3 *Addition:*

~~*When the capillary tube of a **thermostat** is fitted as part of the internal wiringwhere flexing occurs in normal use, it is subjected to the flexing test that is applied to the internal wiring. In this case, if a rupture of the capillary tube occurs, the appliance shall be rendered inoperative (fail-safe).*~~

~~*Other capillary tubes of thermostats where flexing occurs in normal use are subjected to 1 000 flexings at a rate not exceeding 30/min. In this case, the capillary tube shall show no sign of damage impairing the thermostat's further use.*~~

*If the capillary tube of the **thermostat** is liable to flexing in normal use the following applies:*

- *where the capillary tube is fitted as part of the internal wiring, Part 1 applies;*
- *where the capillary tube is separate, it is subjected to 1 000 flexings at a rate not exceeding 30 per minute.*

The rate of flexing can be reduced if it is not possible to move the movable part of the appliance at the given rate, due to the mass of the movable part.

After the test, the capillary tube shall show no sign of damage impairing compliance with this standard and no damage impairing its further use.

However, if a rupture of the capillary tube renders the appliance inoperative (fail-safe), separate capillary tubes are not tested, and those fitted as part of the internal wiring are not inspected for compliance with the requirements.

Compliance in this instance is checked by rupturing the capillary tube in such a way that the rupture does not seal the capillary tube.

24 Components

This clause of Part 1 is applicable.

25 Supply connection and external flexible cords

This clause of Part 1 is applicable except as follows.

25.1 ~~*Modification:*~~

~~Appliances shall not be provided with an appliance inlet.~~

Addition:

Commercial electric **rinsing sinks** shall not be provided with an appliance inlet.

25.3 *Addition:*

Appliances with a mass greater than 40 kg intended for permanent connection to fixed wiring and not provided with rollers, castors or similar means for moving the appliance shall be constructed so that the connection can be done after the appliance has been installed in accordance with the manufacturer's instructions.

The connection to the fixed wiring of **built-in appliances** may be made before the appliance is installed.

Terminals for permanent connection of cables to fixed wiring may also be suitable for the **type X attachment** of a **supply cord**. In this case, a cord anchorage complying with 25.16 shall be fitted to the appliance.

If the appliance is provided with a set of terminals allowing the connection of a flexible cord, they shall be suitable for the **type X attachment** of the cord.

~~In both cases, the instructions shall give full particulars of the power **supply cord**.~~

~~The connection to the supply wires of **built-in appliances** may be made before the appliance is installed.~~

If the appliance uses **type X attachment**, the instructions shall state the size and type of the **supply cord** to be used.

25.7 *Modification:*

Replace the first paragraph with the following:

Supply cords shall be oil-resistant, sheathed flexible cable not lighter than ordinary polychloroprene sheathed cord (code designation 60245 IEC 57).

26 Terminals for external conductors

This clause of Part 1 is applicable.

27 Provision for earthing

This clause of Part 1 is applicable except as follows.

27.2 *Addition:*

Stationary appliances shall be provided with a terminal for the connection of an external equipotential conductor. This terminal shall

– be in effective electrical contact with all fixed exposed metal parts of the appliance except small fixed exposed metal parts such as name-plates;

– allow the connection of a conductor having a nominal cross-sectional area of up to 10 mm^2; and

– be located in a position convenient for the connection of the bonding conductor after installation of the appliance.

~~NOTE 101 Small fixed exposed metal parts, for example nameplates and the like, are not required to be in electrical contact with the terminal.~~

28 Screws and connections

This clause of Part 1 is applicable except as follows.

28.1 *Addition:*

Screws made of carbon steel and alloy steel shall be made in accordance with ISO 898-1.

Screws made of corrosion-resistant stainless-steel shall be made in accordance with ISO 3506-1, or ISO 3506-2, or ISO 3506-3, or ISO 3506-4.

28.4 *Addition:*

Screws that make mechanical connections and electrical connections shall be so designed that the contact pressure does not change appreciably through loosening of the screwed assembly parts during operational stress and contact corrosion.

Screws that make mechanical connections and provide earthing continuity shall be so designed that the contact pressure does not change appreciably through loosening of the screwed assembly parts due to operational stress and contact corrosion. They shall be designed so that a minimum contact pressure remains.

Compliance is checked by inspection and by measuring the assembling torques for screwed connections providing earthing continuity by applying a torque as specified in Table 102 to turn the screw in the fastening direction. The screw shall not turn.

The screw shall not have been unfastened prior to performing this test.

Table 102 – Assembling torques for screwed connections providing earthing continuity

Outer thread diameter of the screw *mm*	***Assembling torque*** *Nm*	
	Screwed connections for the mechanical strength of the screws A2-70 according to ISO 3506-1, or ISO 3506-2, or ISO 3506-3, or ISO 3506-4 and 5.8 according to ISO 898-1	***Screwed connections for the mechanical strength of the screws > 8.8 according to ISO 898-1***
> 2,8 and ≤ 3,6	*0,8*	*1,3*
> 3,6 and ≤ 4,2	*1,9*	*3,0*
> 4,2 and ≤ 5,3	*3,7*	*6,0*
> 5,3 and ≤ 6,3	*6,5*	*10,0*
M 8	*15,0*	*25,0*
M 10	*31,0*	*50,0*

29 Clearances, creepage distances and solid insulation

This clause of Part 1 is applicable except as follows.

29.2 *Addition:*

The microenvironment is pollution degree 3 and the insulation shall have a comparative tracking index (CTI) not less than 250, unless the insulation is enclosed or located so that it is unlikely to be exposed to pollution during normal use of the appliance.

30 Resistance to heat and fire

This clause of Part 1 is applicable except as follows.

30.2.1 *Modification:*

~~*The glow-wire test is carried out at 650 °C. The glow-wire flammability index (GWFI) according to IEC 60695-2-12 shall be at least 650 °C.*~~

Replace the first paragraph with the following:

Parts of non-metallic material are subjected to the glow-wire test of IEC 60695-2-11:2014, which is carried out at 650 °C. However, the glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index (GWFI) according to IEC 60695-2-12 of at least 650 °C.

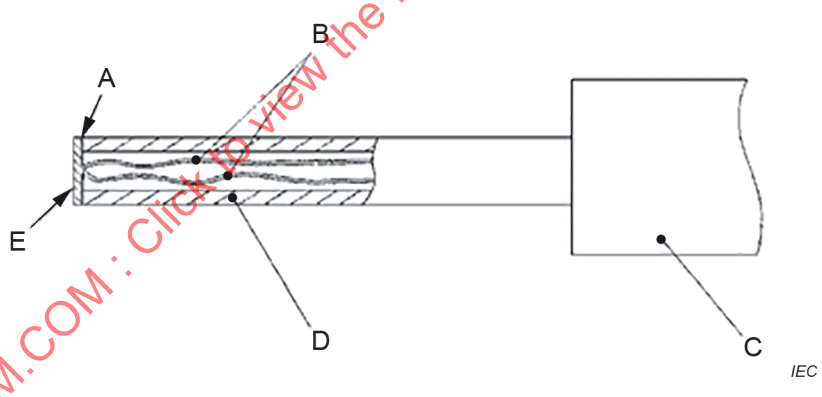
30.2.2 Not applicable

31 Resistance to rusting

This clause of Part 1 is applicable.

32 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.



Key

A adhesive

B thermocouple wires 0,3 mm diameter to IEC 60584-1 Type K ~~(chrome alumel)~~

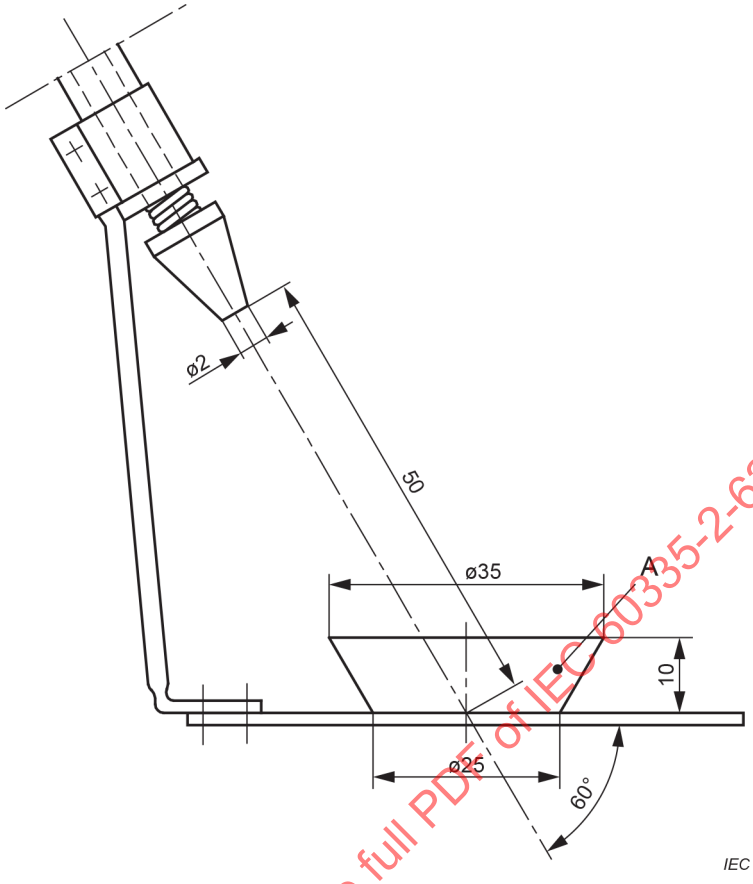
C handle arrangement permitting a contact force of 4 N ± 1 N

D polycarbonate tube: inside diameter 3 mm, outside diameter 5 mm

E tinned copper disc: 5 mm diameter, 0,5 mm thick with flat contact face

Figure 101 – Probe for measuring surface temperatures

Dimensions in millimetres



Key

A bowl

Figure 102 – Splash apparatus

Annexes

The annexes of Part 1 are applicable except as follows.

~~**Annex N**~~
~~(normative)~~

~~**Proof tracking test**~~

~~**10.1** *Addition:*~~

~~If appropriate, the proof tracking voltage is 250 V.~~

Annex P
(informative)

Guidance for the application of this standard to appliances used in tropical climates

This annex of Part 1 is applicable except as follows.

13 Leakage current and electric strength at operating temperature

13.2 *Modification:*

Instead of the permissible leakage current for **stationary class I appliances**, the following applies:

– *for cord and plug connected appliances*	*0,5 mA or 0,5 mA per kW* ***rated power input*** *of the appliance with a maximum of 5 mA, whichever is higher;*
– *for other appliances*	*0,5 mA or 0,5 mA per kW* ***rated power input*** *of the appliance with no maximum, whichever is higher.*

For **portable class I appliances**, instead of the permissible leakage current, the following applies:

– *for cord and plug connected appliances*	*0,5 mA or 0,5 mA per kW* ***rated power input*** *of the appliance with a maximum of 5 mA, whichever is higher*

16 Leakage current and electric strength

16.2 *Modification:*

Instead of the permissible leakage current for **stationary class I appliances**, the following applies:

– *for cord and plug connected appliances*	*0,5 mA or 0,5 mA per kW* ***rated power input*** *of the appliance with a maximum of 5 mA, whichever is higher*
– *for other appliances*	*0,5 mA or 0,5 mA per kW* ***rated power input*** *of the appliance with no maximum, whichever is higher*

For **portable class I appliances** instead of the permissible leakage current, the following applies:

– *for cord and plug connected appliances*	*0,5 mA* or *0,5 mA per kW* ***rated power input*** *of the appliance with a maximum of 5 mA, whichever is higher*

Bibliography

The Bibliography of Part 1 is applicable except as follows.

Addition:

IEC 60335-2-58, *Household and similar electrical appliances – Safety – Part 2-58: Particular requirements for commercial electric dishwashing machines*

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IEC 60335-2-62

Edition 5.0 2024-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Household and similar electrical appliances – Safety –
Part 2-62: Particular requirements for commercial electric rinsing sinks

Appareils électrodomestiques et analogues – Sécurité –
Partie 2-62: Exigences particulières pour les plonges électriques à usage collectif

IEC 60335-2-62:2024-09(en-fr)

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-62: Particular requirements for commercial electric rinsing sinks

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60335-2-62 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2019. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) alignment with IEC 60335-1:2020;
b) deletion or conversion of some notes to normative text (Clause 1, 7.15, 11.7, 22.103, 27.2);

c) clarification that commercial electric rinsing sinks are not intended to be used in areas open to the public (Clause 1);

d) alignment of some requirements with the standards for commercial catering appliances (Clause 1, 5.101, 11.4, 11.7, 15.1.1, 22.101, 22.102, 22.103, 23.3, 25.3, 27.2).

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

Draft	Report on voting
61/7269/FDIS	61/7292/RVD

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/publications.

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, can be found on the IEC website.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments unless that edition precludes it; in that case, the latest edition that does not preclude it is used. It was established on the basis of the sixth edition (2020) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Particular requirements for commercial electric rinsing sinks.

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 in Part 1 is to be adapted accordingly.

NOTE 2 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.

NOTE 3 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.

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

- reconfirmed,
- withdrawn, or
- revised.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations can need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months from the date of publication.

INTRODUCTION

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

Guidance documents concerning the application of the safety requirements for appliances can be accessed via TC 61 supporting documents on the IEC website

https://www.iec.ch/tc61/supportingdocuments

This information is given for the convenience of users of this International Standard and does not constitute a replacement for the normative text in this standard.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances 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 appliances.

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 appliance is connected to the supply mains. However, national wiring rules can differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 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.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

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

NOTE 2 Horizontal publications, basic safety publications and group safety publications covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards.

An appliance 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.

An appliance 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.

NOTE 3 Standards dealing with non-safety aspects of household appliances are:

– IEC standards published by TC 59 concerning methods of measuring performance;
– CISPR 11, CISPR 14-1 and relevant IEC 61000-3 series standards concerning electromagnetic emissions;
– CISPR 14-2 concerning electromagnetic immunity;
– IEC standards published by TC 111 concerning environmental matters.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-62: Particular requirements for commercial electric rinsing sinks

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of electrically operated commercial **rinsing sinks** used in commercial kitchens, 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 appliances are not intended for household and similar purposes. They are used in areas not open to the public, for example in kitchens of restaurants, canteens, hospitals and commercial enterprises such as bakeries and butcheries.

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

As far as is practicable, this standard deals with the common hazards presented by these types of appliances.

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;

– for appliances intended to be used in tropical countries, special 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.

This standard does not apply to

– appliances designed primarily for sterilizing to clinical standards;

– dishwashers (IEC 60335-2-58);

– appliances designed exclusively for industrial purposes;

– 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).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60584-1, *Thermocouples – Part 1: EMF specifications and tolerances*

ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel – Part 1: Bolts, screws and studs with specified property classes – Coarse thread and fine pitch thread*

ISO 3506-1, *Fasteners – Mechanical properties of corrosion-resistant stainless steel fasteners – Part 1: Bolts, screws and studs with specified grades and property classes*

ISO 3506-2, *Fasteners – Mechanical properties of corrosion-resistant stainless steel fasteners – Part 2: Nuts with specified grades and property classes*

ISO 3506-3, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 3: Set screws and similar fasteners not under tensile stress*

ISO 3506-4, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 4: Tapping screws*

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

3.1 Definitions relating to physical characteristics

3.1.4 *Addition:*

Note 101 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 *Modification:*
normal operation

Replace the first paragraph with the following:

operation of the appliance under the following conditions:

Appliances are operated in accordance with the instructions, with all the controls intended to be operated by the user adjusted to their maximum setting. Lids and covers, if any, are placed in their intended position.

Appliances intended to be filled by hand or by a manually operated tap are filled to the **indicated level**.

Where several levels are marked, that giving the most unfavourable conditions is used.

Appliances intended to be filled automatically are connected to a water supply having the pressure designated by the manufacturer.

Where the manufacturer specifies a range of pressures, the pressure is adjusted to that giving the most unfavourable conditions.

The temperature of the water supplied is 15 °C ± 5 °C.

Motors incorporated in the appliance are operated in the intended manner, under the most unfavourable conditions that can be expected in normal use taking into account the instructions.

3.5 Definitions relating to types of appliances

3.5.101
rinsing sink
appliance intended for rinsing crockery, cutlery chopsticks and utensils with water heated in the appliance itself

3.8 Definitions relating to miscellaneous matters

3.8.101
indicated level
mark on the appliance to indicate the maximum liquid level for correct operation

3.8.102
installation wall
special fixed construction containing supply facilities for appliances installed in conjunction with it

4 General requirement

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

5.10 *Addition:*

*Appliances intended for installation in a bank of other appliances and appliances intended to be fixed to an **installation wall** are enclosed to obtain protection against electric shock and harmful ingress of water equivalent to that when installed in accordance with the instructions provided with the appliance.*

NOTE 101 Appropriate enclosures or additional appliances can be needed for test purposes.

5.101 *Appliances are tested as **heating appliances**, when during a mode of operation electrical heaters are energized. If no electrical heaters are energized, the appliances are tested as **motor-operated appliances**.*

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 *Replacement:*

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

Compliance is checked by inspection and by the relevant tests.

6.2 *Addition:*

Appliances intended to be used on a table shall be at least IPX3. Other appliances shall be at least IPX4.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 *Addition:*

Appliances shall be marked with the water pressure or range of pressures, in kilopascals (kPa), for appliances intended to be connected to a water supply, unless this is indicated in the instructions.

7.12 *Addition:*

If symbol IEC 60417-5021 (2002-10) is marked on the appliance its meaning shall be explained.

The instructions shall warn on potential injury and state that the tableware shall be free from sharp food residues like sharp fish bones or bone fragments before being put into the appliance.

The instructions shall include the substance of the following:

> These appliances are intended to be used for commercial applications, for example in kitchens of restaurants, canteens, hospitals and in commercial enterprises such as bakeries, butcheries, etc.

If the manufacturer wants to limit the use of the appliance to less than the above, this has to be clearly stated in the instructions.

If the water temperature exceeds 45 °C the instructions shall include the substance of the following:

> WARNING – The water temperature is high. Protective gloves must be worn to protect against injury.

Modification:

The instructions concerning persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge and children playing with the appliance are not applicable.

7.12.1 *Addition:*

For appliances intended for installation in a bank of other appliances and appliances intended to be fixed to an **installation wall**, details of how to ensure appropriate protection against electric shock and harmful ingress of water shall be supplied. If the controls of more than one appliance are combined in a separate enclosure, detailed installation instructions shall be supplied. Instructions for **user maintenance**, for example cleaning, shall also be given. They shall include a statement that the appliance is not to be cleaned with a water jet or a steam cleaner.

For appliances that are permanently connected to fixed wiring and for which leakage currents can exceed 10 mA, particularly if disconnected or not used for long periods, or during initial installation, the instructions shall give recommendations regarding the rating of **protective devices**, such as earth leakage relays, to be installed.

If a **stationary appliance** is intended to be moved for cleaning, this shall be stated.

For **stationary appliances** equipped with rollers or castors or intended to be moved for cleaning, the instructions shall state the substance of the following.

> This appliance is to be connected with flexible connections for equipotential bonding and connection to services such as electricity supply, water supply, gas supply and steam supply such that the appliance can be moved in the direction required for cleaning at a distance not less than the dimension of the appliance in the direction of movement plus 500 mm without the flexible connections becoming taut or being subject to strain.

7.12.4 *Addition:*

The instructions for **built-in appliances** having a separate control panel for several appliances shall state that the control panel is only to be connected to the specified appliances in order to avoid a possible hazard.

7.15 *Addition:*

For **fixed appliances**, the marking of the name or trademark or identification mark of the manufacturer or responsible vendor and the model or type reference shall be marked on the appliance and, if not visible when the appliance is installed as in normal use, shall be included in the instructions or on an additional label that can be fixed near the appliance after installation.

7.101 Appliances intended to be filled by hand or a manually operated tap shall be marked with an **indicated level**.

Compliance is checked by inspection.

8 Protection against access to live parts

This clause of Part 1 is applicable except as follows:

8.101 Heating elements that are liable to be touched accidentally by a fork or similar pointed object in normal use shall be so protected that it is not possible to touch their **live parts** with such an object.

Compliance is checked by inserting test probe 12 of IEC 61032 at all points where the probe can enter in the vicinity of live parts.

9 Starting of motor-operated appliances

This clause of Part 1 is not applicable.

10 Power input and current

This clause of Part 1 is applicable except as follows.

10.1 *Addition:*

For appliances having more than one heating unit, the total power input may be determined by measuring the power input of each heating unit separately (see also 3.1.4).

11 Heating

This clause of Part 1 is applicable except as follows.

11.2 *Addition:*

Appliances intended to be fixed to the floor and appliances with a mass greater than 40 kg and not provided with rollers, castors or similar means for moving the appliance are installed in accordance with the manufacturer's instructions. If no instructions are given, these appliances are considered as appliances intended to be placed on the floor.

11.3 *Addition:*

Where the external ***accessible surfaces*** *are suitably flat and access permits, then the test probe of Figure 101 is used to measure the temperature rises of external* ***accessible surfaces*** *specified in Table 101. The probe is applied with a force of 4 N ± 1 N to the surface in such a way that the best possible contact between the probe and the surface is ensured. The measurement is performed after a contact period of 30 s.*

The probe may be held in place using a laboratory stand clamp or similar device. Any measuring instrument giving the same results as the probe may be used.

The water temperature is measured 25 mm below the centre of the liquid surface. However, the distance from the heating element shall be at least 10 mm.

11.4 *Replacement:*

Appliances are operated under ***normal operation*** *such that the total power input of the appliance is 1,15 times* ***rated power input****. If it is not possible to switch on all heating elements at the same time, the test is made with each of the combinations that the switch arrangement will allow, the highest load possible with each switching arrangement being in circuit.*

If the appliance is provided with a control that limits the total power input, the test is made with whichever combination of heating units, as can be selected by the control, imposes the most unfavourable condition.

If the temperature rise limits of motors, transformers or electronic circuits are exceeded, the test is repeated with the appliance supplied at 1,06 times ***rated voltage****. In this case, only the temperature rises of the components for which the temperature rise limits were exceeded are measured.*

11.7 *Modification*:

Replace the first paragraph with the following:

Appliances are operated until steady conditions are established.

Steady conditions are considered to exist 60 min after reaching the temperatures defined for ***normal operation****.*

Addition:

When an appliance is assembled in combination with, equipped with or incorporating accessories or other appliances, the interactions shall be covered if they are provided to operate simultaneously as stated by the manufacturer or by a common control.

11.8 *Modification:*

Replace the first paragraph with the following:

During the test, the temperature rises are monitored continuously and shall not exceed the values shown in Table 3 and Table 101.

Addition:

For appliances that require manual assistance for cleaning, the water temperature shall not exceed 55 °C.

Table 101 – Maximum temperature rises for specified external accessible surfaces under normal operating conditions

Surface [a]	***Temperature rise of external accessible surfaces*** [b] ***K***
Bare metal	*48*
Coated metal [c]	*59*
Glass and ceramic	*65*
Plastic and plastic coating > 0,4 mm [d]	*74*
NOTE The temperature rise limits of handles, knobs, grips, keyboards, keypads and similar parts are specified in Table 3.	

[a] *Temperature rises are not measured on:*

- *the underside of appliances intended to be used on a working surface or floor;*
- *the rear surface of appliances;*
- *surfaces that are inaccessible to a 75 mm diameter probe having a hemispherical;*
- *surfaces that are submersed during* ***normal operation****.*

[b] *Metal is considered coated when a coating having a minimum thickness of 90 µm made of enamel, powder or non-substantially plastic coating is used.*

[c] *The temperature rise limit of plastic also applies for plastic material having a metal finish of thickness less than 0,1 mm.*

[d] *When the thickness of the plastic coating does not exceed 0,4 mm, the temperature rise limits of coated metal for underlying metal apply or the temperature rise limits for glass or ceramic material for underlying glass or ceramic material apply.*

12 Charging of metal-ion batteries

This clause of Part 1 is applicable.

13 Leakage current and electric strength at operating temperature

This clause of Part 1 is applicable except as follows.

13.2 *Modification:*

Instead of the permissible leakage current for **stationary class I appliances**, the following *applies*:

– *for cord and plug connected appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever* is *higher*
– *for other appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with no maximum, whichever is higher*

For **portable class I appliances**, instead of the permissible leakage current, the following applies:

– *for cord and plug connected appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever is higher*

14 Transient overvoltages

This clause of Part 1 is applicable.

15 Moisture resistance

This clause of Part 1 is applicable except as follows.

15.1.1 *Addition:*

In addition, appliances, except those marked IPX5 or IPX6, are subjected for 5 min to the following splash test.

The apparatus shown in Figure 102 is used. The appliance is placed in the position of normal use and adjustable feet shall be set in accordance with the instruction for use to the most unfavourable height.

For appliances intended to be used on the floor the bowl is placed on the floor and is moved around in such a way as to splash the appliance from all directions. During the test, the water pressure is so regulated that the water splashes up 150 mm above the bottom of the bowl. The bowl is not positioned underneath the appliance.

For all other appliances the bowl is placed on the same plane where the appliance is placed and is moved around in such a way as to splash the appliance from all directions. During the test, the water pressure is so regulated that the water splashes up 100 mm above the bottom of the bowl. The bowl is not positioned underneath the appliance.

Care is taken that the appliance is not hit by the direct jet.

15.1.2 *Modification:*

Delete "or table" from the fifth paragraph.

Addition:

Appliances intended to be used on a table are placed on a support having dimensions that are 15 cm ± 5 cm in excess of those of the orthogonal projection of the appliance on the support.

15.2 *Addition:*

Appliances intended to be filled by a manually operated tap or automatically are connected to a water supply having the maximum supply pressure indicated by the manufacturer. The means for controlling the incoming water is held fully open and the filling continued for 15 min after the first evidence of overflow, or until a further protective system operates to stop the inflow.

15.101 Appliances that are provided with a tap intended for filling or cleaning shall be constructed so that the water from the tap cannot come into contact with **live parts**.

Compliance is checked by the following test.

The tap is fully opened for 1 min with the appliance connected to a water supply having the maximum water pressure indicated by the manufacturer. Tiltable and movable parts, including lids, are tilted or placed in the most unfavourable position. Swivelling outlets of water taps are so positioned as to direct water on to those parts that will give the most unfavourable result.

Immediately following this treatment, the appliance shall withstand an electric strength test as specified in 16.3.

16 Leakage current and electric strength

This clause of Part 1 is applicable except as follows.

16.2 *Modification:*

Instead of the permissible leakage current for **stationary class I appliances**, the following applies:

– *for cord and plug connected appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever is higher*
– *for other appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with no maximum, whichever is higher*

For **portable class I appliances**, instead of the permissible leakage current, the following applies:

– *for cord and plug connected appliances*	*0,75 mA or 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA, whichever is higher*

17 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.

18 Endurance

This clause of Part 1 is not applicable.

19 Abnormal operation

This clause of Part 1 is applicable except as follows.

19.2 *Addition:*

Appliances are tested without water and those intended to be automatically filled are tested with the water supply turned off.

19.4 *Addition:*

The main contacts of the contactor intended for switching on and off the heating element(s) in normal use are locked in the "on" position. However, if two contactors operate independently of each other or if one contactor operates two independent sets of main contacts, these contacts are locked in the "on" position in turn.

20 Stability and mechanical hazards

This clause of Part 1 is applicable except as follows.

20.1 Addition:

Covers, lids and accessories are placed in their most unfavourable positions.

NOTE 101 Any spillage of liquid is ignored.

21 Mechanical strength

This clause of Part 1 is applicable.

22 Construction

This clause of Part 1 is applicable except as follows.

22.54 Not applicable.

22.55 Not applicable.

22.101 For multi-phase appliances, **thermal cut-outs** protecting circuits with heating elements, and those for motors of which the unexpected starting can cause a risk of injury, shall be a **non-self-resetting thermal cut-out** of the trip-free type, and shall provide **all-pole disconnection** from related supply circuits.

For single-phase appliances, and for single-phase heating elements or motors connected between one phase and neutral or between phase and phase, **thermal cut-outs** protecting circuits with heating elements, and those for motors of which the unexpected starting can cause a risk of injury, shall be a **non-self-resetting thermal cut-out** of the trip-free type, and shall provide at least one-pole disconnection.

If the **non-self-resetting thermal cut-out** is only accessible after removing parts with the aid of a **tool**, the trip-free type is not required.

NOTE Trip-free is an automatic action that is independent of manipulation or position of the actuating member.

Thermal cut-outs of the bulb and capillary type that operate during the tests of Clause 19 shall be such that rupture of the capillary tube shall not impair compliance with the requirements of 19.13.

Compliance is checked by inspection, by manual test and by rupturing the capillary tube in such a way that the rupture does not seal the tube.

22.102 Lights, switches or push-buttons for the indication of danger, alarm or similar situations shall be coloured red.

Compliance is checked by inspection.

22.103 Drain cocks and other emptying devices for hot liquids shall be constructed so that they cannot be opened inadvertently.

This requirement is met if the emptying device handle is such that

– when released, it returns the emptying device automatically to the closed position; or
– it is of the wheel type; or
– it is placed in a recess such that it cannot be placed in the open position by means of test probe B of IEC 61032 using a single action with a force of 10 N.

Moreover, it shall not be possible to withdraw drain plugs inadvertently.

Compliance is checked by inspection and by manual test.

22.104 Means provided to allow drainage of liquid from appliances shall discharge the liquid in such a manner that electrical insulation is not affected.

*Compliance is checked by manual test and inspection shall show that there is no trace of water on insulation that could result in a reduction of **clearances** or **creepage distances** below the values specified in Clause 29.*

22.105 The level to which manually filled appliances have to be filled shall be so located as to be readily visible when filling.

Compliance is checked by inspection.

23 Internal wiring

This clause of Part 1 is applicable except as follows.

23.3 *Addition:*

If the capillary tube of the ***thermostat*** *is liable to flexing in normal use the following applies:*

– *where the capillary tube is fitted as part of the internal wiring, Part 1 applies;*
– *where the capillary tube is separate, it is subjected to 1 000 flexings at a rate not exceeding 30 per minute.*

The rate of flexing can be reduced if it is not possible to move the movable part of the appliance at the given rate, due to the mass of the movable part.

After the test, the capillary tube shall show no sign of damage impairing compliance with this standard and no damage impairing its further use.

However, if a rupture of the capillary tube renders the appliance inoperative (fail-safe), separate capillary tubes are not tested, and those fitted as part of the internal wiring are not inspected for compliance with the requirements.

Compliance in this instance is checked by rupturing the capillary tube in such a way that the rupture does not seal the capillary tube.

24 Components

This clause of Part 1 is applicable.

25 Supply connection and external flexible cords

This clause of Part 1 is applicable except as follows.

25.1 *Addition:*

Commercial electric **rinsing sinks** shall not be provided with an appliance inlet.

25.3 *Addition:*

Appliances with a mass greater than 40 kg intended for permanent connection to fixed wiring and not provided with rollers, castors or similar means for moving the appliance shall be constructed so that the connection can be done after the appliance has been installed in accordance with the manufacturer's instructions.

The connection to the fixed wiring of **built-in appliances** may be made before the appliance is installed.

Terminals for permanent connection of cables to fixed wiring may also be suitable for the **type X attachment** of a **supply cord**. In this case, a cord anchorage complying with 25.16 shall be fitted to the appliance.

If the appliance is provided with a set of terminals allowing the connection of a flexible cord, they shall be suitable for the **type X attachment** of the cord.

If the appliance uses **type X attachment**, the instructions shall state the size and type of the **supply cord** to be used.

25.7 *Modification:*

Replace the first paragraph with the following:

Supply cords shall be oil-resistant, sheathed flexible cable not lighter than ordinary polychloroprene sheathed cord (code designation 60245 IEC 57).

26 Terminals for external conductors

This clause of Part 1 is applicable.

27 Provision for earthing

This clause of Part 1 is applicable except as follows.

27.2 *Addition:*

Stationary appliances shall be provided with a terminal for the connection of an external equipotential conductor. This terminal shall

– be in effective electrical contact with all fixed exposed metal parts of the appliance except small fixed exposed metal parts such as name-plates;

– allow the connection of a conductor having a nominal cross-sectional area of up to 10 mm^2; and

– be located in a position convenient for the connection of the bonding conductor after installation of the appliance.

28 Screws and connections

This clause of Part 1 is applicable except as follows.

28.1 *Addition:*

Screws made of carbon steel and alloy steel shall be made in accordance with ISO 898-1.

Screws made of corrosion-resistant stainless-steel shall be made in accordance with ISO 3506-1, or ISO 3506-2, or ISO 3506-3, or ISO 3506-4.

28.4 *Addition:*

Screws that make mechanical connections and electrical connections shall be so designed that the contact pressure does not change appreciably through loosening of the screwed assembly parts during operational stress and contact corrosion.

Screws that make mechanical connections and provide earthing continuity shall be so designed that the contact pressure does not change appreciably through loosening of the screwed assembly parts due to operational stress and contact corrosion. They shall be designed so that a minimum contact pressure remains.

Compliance is checked by inspection and by measuring the assembling torques for screwed connections providing earthing continuity by applying a torque as specified in Table 102 to turn the screw in the fastening direction. The screw shall not turn.

The screw shall not have been unfastened prior to performing this test.

Table 102 – Assembling torques for screwed connections providing earthing continuity

Outer thread diameter of the screw *mm*	***Assembling torque*** *Nm*	
	Screwed connections for the mechanical strength of the screws A2-70 according to ISO 3506-1, or ISO 3506-2, or ISO 3506-3, or ISO 3506-4 and 5.8 according to ISO 898-1	***Screwed connections for the mechanical strength of the screws > 8.8 according to ISO 898-1***
> 2,8 and ≤ 3,6	*0,8*	*1,3*
> 3,6 and ≤ 4,2	*1,9*	*3,0*
> 4,2 and ≤ 5,3	*3,7*	*6,0*
> 5,3 and ≤ 6,3	*6,5*	*10,0*
M 8	*15,0*	*25,0*
M 10	*31,0*	*50,0*

29 Clearances, creepage distances and solid insulation

This clause of Part 1 is applicable except as follows.

29.2 *Addition:*

The microenvironment is pollution degree 3 and the insulation shall have a comparative tracking index (CTI) not less than 250, unless the insulation is enclosed or located so that it is unlikely to be exposed to pollution during normal use of the appliance.

30 Resistance to heat and fire

This clause of Part 1 is applicable except as follows.

30.2.1 *Modification:*

Replace the first paragraph with the following:

Parts of non-metallic material are subjected to the glow-wire test of IEC 60695-2-11:2014, which is carried out at 650 °C. However, the glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index (GWFI) according to IEC 60695-2-12 of at least 650 °C.

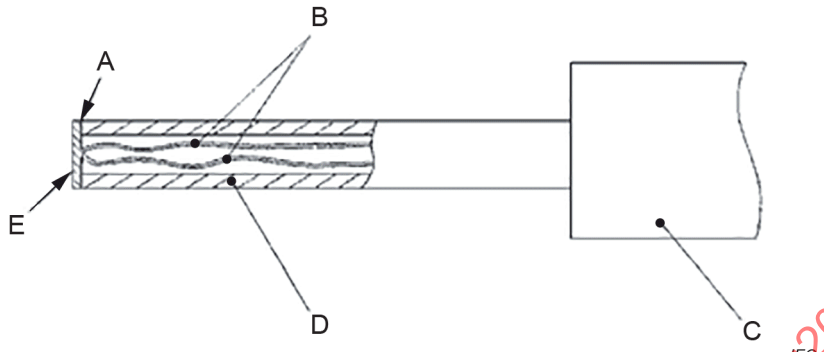
30.2.2 Not applicable

31 Resistance to rusting

This clause of Part 1 is applicable.

32 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.



Key

A adhesive

B thermocouple wires 0,3 mm diameter to IEC 60584-1 Type K

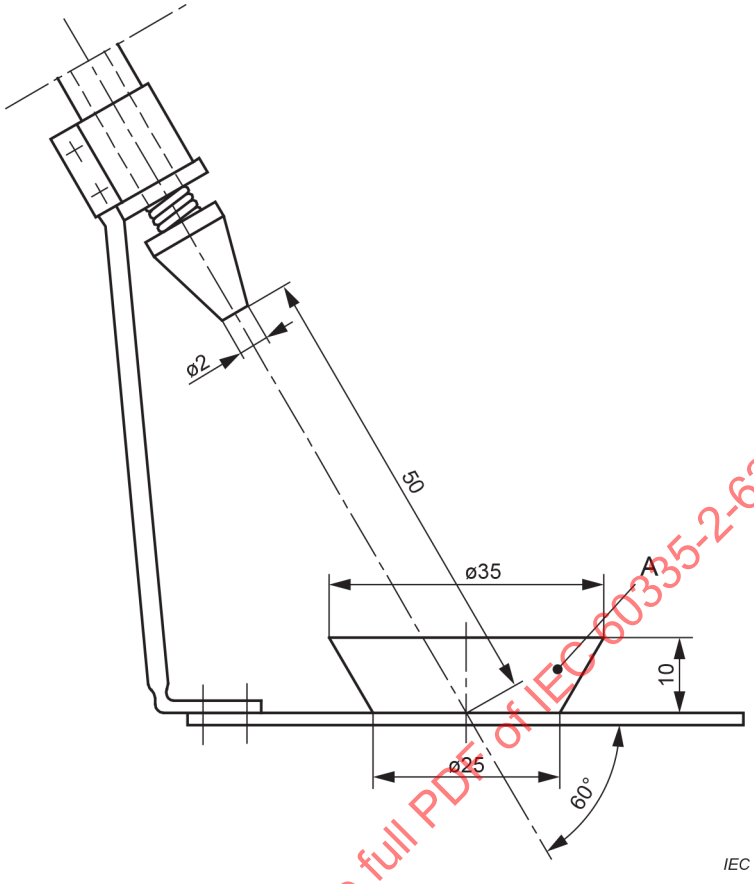
C handle arrangement permitting a contact force of 4 N ± 1 N

D polycarbonate tube: inside diameter 3 mm, outside diameter 5 mm

E tinned copper disc: 5 mm diameter, 0,5 mm thick with flat contact face

Figure 101 – Probe for measuring surface temperatures

Dimensions in millimetres



Key

A bowl

Figure 102 – Splash apparatus

Annexes

The annexes of Part 1 are applicable except as follows.

Annex P
(informative)

Guidance for the application of this standard to appliances used in tropical climates

This annex of Part 1 is applicable except as follows.

13 Leakage current and electric strength at operating temperature

13.2 *Modification:*

Instead of the permissible leakage current for **stationary class I appliances**, the following applies:

– *for cord and plug connected appliances*	*0,5 mA or 0,5 mA per kW* ***rated power input*** *of the appliance with a maximum of 5 mA, whichever is higher;*
– *for other appliances*	*0,5 mA or 0,5 mA per kW* ***rated power input*** *of the appliance with no maximum, whichever is higher.*

For **portable class I appliances**, instead of the permissible leakage current, the following applies:

– *for cord and plug connected appliances*	*0,5 mA or 0,5 mA per kW* ***rated power input*** *of the appliance with a maximum of 5 mA, whichever is higher*

16 Leakage current and electric strength

16.2 *Modification:*

Instead of the permissible leakage current for **stationary class I appliances**, the following applies:

– *for cord and plug connected appliances*	*0,5 mA or 0,5 mA per kW* ***rated power input*** *of the appliance with a maximum of 5 mA, whichever is higher*
– *for other appliances*	*0,5 mA or 0,5 mA per kW* ***rated power input*** *of the appliance with no maximum, whichever is higher*

For **portable class I appliances** instead of the permissible leakage current, the following applies:

– *for cord and plug connected appliances*	*0,5 mA* or *0,5 mA per kW* ***rated power input*** *of the appliance with a maximum of 5 mA, whichever is higher*

Bibliography

The Bibliography of Part 1 is applicable except as follows.

Addition:

IEC 60335-2-58, *Household and similar electrical appliances – Safety – Part 2-58: Particular requirements for commercial electric dishwashing machines*

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SOMMAIRE

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – SÉCURITÉ –

Partie 2-62: Exigences particulières pour les plonges électriques à usage collectif

AVANT-PROPOS

1) La Commission Electrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. À cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
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L'IEC 60335-2-62 a été établie par le comité d'études 61 de l'IEC: Sécurité des appareils électrodomestiques et analogues. Il s'agit d'une Norme internationale.

Cette cinquième édition annule et remplace la quatrième édition parue en 2019. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) texte aligné sur l'IEC 60335-1:2020;

b) suppression ou transformation de certaines notes en texte normatif (Article 1 et paragraphes 7.15, 11.7, 22.103, 27.2);

c) précisions relatives au fait que les plonges électriques à usage commercial ne sont pas destinées aux endroits ouverts au public (Article 1);

d) alignement de certaines exigences sur les normes relatives aux appareils de restauration commerciale (Article 1 et paragraphes 5.101, 11.4, 11.7, 15.1.1, 22.101, 22.102, 22.103, 23.3, 25.3, 27.2).

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
61/7269/FDIS	61/7292/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/publications.

Une liste de toutes les parties de la série IEC 60335, publiées sous le titre général: *Appareils électrodomestiques et analogues – Sécurité*, se trouve sur le site web de l'IEC.

La présente partie 2 doit être utilisée conjointement avec la dernière édition de l'IEC 60335-1 et ses amendements sauf si cette édition l'exclut; dans ce cas, la dernière édition qui n'exclut pas la présente partie 2 est utilisée. Elle a été établie sur la base de la sixième édition (2020) de cette norme.

NOTE 1 L'expression "la Partie 1" utilisée dans la présente norme fait référence à l'IEC 60335-1.

La présente partie 2 complète ou modifie les articles correspondants de l'IEC 60335-1, de façon à transformer cette publication en norme IEC: Exigences particulières pour les plonges électriques à usage collectif.

Lorsqu'un paragraphe particulier de la Partie 1 n'est pas mentionné dans cette partie 2, ce paragraphe s'applique pour autant que cela soit raisonnable. Lorsque la présente norme mentionne "addition", "modification" ou "remplacement", le texte correspondant de la Partie 1 doit être adapté en conséquence.

NOTE 2 Le système de numérotation suivant est utilisé:

– les paragraphes, tableaux et figures qui s'ajoutent à ceux de la Partie 1 sont numérotés à partir de 101;

– notes: à l'exception de celles qui sont dans un nouveau paragraphe ou de celles qui concernent des notes de la Partie 1, les notes sont numérotées à partir de 101, y compris celles des articles ou paragraphes qui sont modifiés ou remplacés;

– les annexes qui sont ajoutées sont désignées AA, BB, etc.

NOTE 3 Les caractères d'imprimerie suivants sont utilisés:

– exigences: caractères romains;

– *modalités d'essais: caractères italiques*;

– notes: petits caractères romains.

Les termes figurant en caractères **gras** dans le texte sont définis à l'Article 3. Lorsqu'une définition concerne un adjectif, l'adjectif et le nom associé figurent également en gras.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous webstore.iec.ch dans les données relatives au document recherché. À cette date, le document sera

- reconduit,
- supprimé, ou
- révisé.

NOTE 4 L'attention des Comités nationaux est attirée sur le fait que les fabricants d'appareils et les organismes d'essai peuvent avoir besoin d'une période transitoire après la publication d'une nouvelle publication IEC, ou d'une publication amendée ou révisée, pour fabriquer des produits conformes aux nouvelles exigences et pour adapter leurs équipements aux nouveaux essais ou aux essais révisés.

Le comité recommande que le contenu de cette publication soit adopté pour application nationale au plus tôt 12 mois après la date de publication.

INTRODUCTION

Il a été admis par hypothèse, en établissant la présente Norme internationale, que l'exécution de ses dispositions était confiée à des personnes expérimentées et ayant une qualification appropriée.

Les documents de recommandations concernant l'application des exigences de sécurité des appareils peuvent être obtenus par le biais des documents d'accompagnement du comité d'études 61 sur le site web de l'IEC:

https://www.iec.ch/tc61/supportingdocuments

Cette information est donnée à l'intention des utilisateurs de la présente Norme internationale et ne constitue nullement un remplacement du texte normatif de la présente norme.

La présente norme reconnaît le niveau de protection internationalement accepté contre les risques électriques, mécaniques, thermiques, liés au feu et au rayonnement des appareils, lorsqu'ils fonctionnent comme en usage normal en tenant compte des instructions du fabricant. Elle couvre également les situations anormales qui peuvent être attendues dans la pratique et elle tient compte de la façon dont les phénomènes électromagnétiques peuvent altérer le fonctionnement sûr des appareils.

La présente norme tient compte autant que possible des exigences de l'IEC 60364, de façon à rester compatible avec les règles d'installation quand l'appareil est raccordé au réseau d'alimentation. Cependant, les règles nationales d'installation peuvent être différentes.

Si un appareil relevant du domaine d'application de la présente norme comporte également des fonctions couvertes par une autre partie 2 de l'IEC 60335, la partie 2 correspondante est appliquée à chaque fonction séparément, dans la limite du raisonnable. Si cela s'applique, l'influence d'une fonction sur les autres fonctions est prise en compte.

Lorsqu'une partie 2 ne comporte pas d'exigences complémentaires pour couvrir les dangers traités dans la Partie 1, la Partie 1 s'applique.

NOTE 1 Cela signifie que les comités d'études responsables pour les parties 2 ont déterminé qu'il n'était pas nécessaire de spécifier des exigences particulières pour l'appareil en question en plus des exigences générales.

Cette norme est une norme de famille de produits traitant de la sécurité d'appareils et a préséance sur les normes horizontales et génériques couvrant le même sujet.

NOTE 2 Les publications horizontales, les publications fondamentales de sécurité et les publications groupées de sécurité couvrant un danger ne s'appliquent pas, parce qu'elles ont été prises en considération lorsque les exigences générales et particulières ont été étudiées pour la série de normes IEC 60335.

Un appareil conforme au texte de la présente norme n'est pas nécessairement jugé conforme aux principes de sécurité de la norme si, lorsqu'il est examiné et soumis aux essais, il apparaît qu'il présente d'autres caractéristiques qui compromettent le niveau de sécurité visé par ces exigences.

Un appareil utilisant des matériaux ou présentant des modes de construction différents de ceux décrits dans les exigences de la présente norme peut être examiné et soumis aux essais en fonction de l'objectif poursuivi par ces exigences et, s'il est jugé pratiquement équivalent, il peut être estimé conforme aux principes de sécurité de la présente norme.

NOTE 3 Les normes traitant des aspects non relatifs à la sécurité des appareils électrodomestiques sont:

– les normes IEC publiées par le comité d'études 59 concernant les méthodes de mesure de l'aptitude à la fonction;
– les normes CISPR 11, CISPR 14-1 et les normes applicables de la série IEC 61000-3 concernant les émissions électromagnétiques;
– la norme CISPR 14-2 concernant l'immunité électromagnétique;
– les normes IEC publiées par le comité d'études 111 concernant l'environnement.

APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – SÉCURITÉ –

Partie 2-62: Exigences particulières pour les plonges électriques à usage collectif

1 Domaine d'application

L'article de la Partie 1 est remplacé par le texte suivant.

La présente partie de l'IEC 60335 traite de la sécurité des **plonges** électriques à usage commercial, utilisées dans les cuisines commerciales et dont la **tension assignée** est inférieure ou égale à 250 V pour les appareils monophasés alimentés entre phase et neutre, et à 480 V pour les autres appareils.

Ces appareils ne sont pas destinés à un usage domestique ou analogue. Ils sont utilisés dans des endroits fermés au public, par exemple les cuisines des restaurants, des cantines, des hôpitaux et des entreprises artisanales, telles que les boulangeries et les boucheries.

La partie électrique des appareils utilisant d'autres formes d'énergie relève également du domaine d'application de la présente norme.

Dans la mesure du possible, la présente norme traite des dangers courants que présentent ces types d'appareils.

L'attention est attirée sur le fait que

– Pour les appareils destinés à être utilisés dans des véhicules ou à bord de navires ou d'avions, des exigences supplémentaires peuvent être nécessaires.
– Pour les appareils destinés à être utilisés dans les pays tropicaux, des exigences spéciales peuvent être nécessaires.
– Dans de nombreux pays, des exigences supplémentaires sont spécifiées par les organismes nationaux de la santé, par les organismes nationaux responsables de la protection des travailleurs, par les organismes nationaux responsables de l'alimentation en eau et par des organismes similaires.

La présente norme ne s'applique pas

– Aux appareils destinés principalement à la stérilisation conforme aux normes cliniques.
– Aux lave-vaisselle (IEC 60335-2-58).
– Aux appareils prévus exclusivement pour des usages industriels.
– Aux appareils destinés à être utilisés dans des locaux qui présentent des conditions particulières, telles que la présence d'une atmosphère corrosive ou explosive (poussière, vapeur ou gaz).

2 Références normatives

L'article de la Partie 1 s'applique avec les exceptions suivantes.

Addition:

IEC 60584-1, *Couples thermoélectriques – Partie 1: Spécifications et tolérances en matière de FEM*

ISO 898-1, *Caractéristiques mécaniques des éléments de fixation en acier au carbone et en acier allié – Partie 1: Vis, goujons et tiges filetées de classes de qualité spécifiées – Filetages à pas gros et filetages à pas fin*

ISO 3506-1, *Fixations – Caractéristiques mécaniques des fixations en acier inoxydable résistant à la corrosion – Partie 1: Vis, goujons et tiges filetées de grades et classes de qualité spécifiés*

ISO 3506-2, *Fixations – Caractéristiques mécaniques des fixations en acier inoxydable résistant à la corrosion – Partie 2: Écrous de grades et classes de qualité spécifiés*

ISO 3506-3, *Caractéristiques mécaniques des éléments de fixation en acier inoxydable résistant à la corrosion – Partie 3: Vis sans tête et éléments de fixation similaires non soumis à des contraintes de traction*

ISO 3506-4, *Caractéristiques mécaniques des éléments de fixation en acier inoxydable résistant à la corrosion – Partie 4: Vis à tôle*

3 Termes et définitions

L'article de la Partie 1 s'applique avec les exceptions suivantes.

3.1 Définitions relatives aux caractéristiques physiques

3.1.4 *Addition:*

Note 101 à l'article: La **puissance assignée** est la somme des puissances de tous les éléments individuels de l'appareil qui peuvent être alimentés simultanément; si plusieurs combinaisons d'éléments sont possibles, celle qui donne la puissance la plus élevée sert à déterminer la **puissance assignée**.

3.1.9 *Modification:*
conditions de fonctionnement normal

Remplacer le premier alinéa par ce qui suit:

fonctionnement de l'appareil dans les conditions suivantes:

Les appareils sont mis en fonctionnement conformément aux instructions, tous les dispositifs de commande destinés à être manœuvrés par l'utilisateur étant ajustés à leur réglage maximal. Les couvercles éventuels sont placés dans la position prévue.

Les appareils destinés à être remplis à la main ou par manœuvre d'un robinet sont remplis jusqu'au **niveau indiqué**.

Si plusieurs niveaux sont marqués, celui donnant les conditions les plus défavorables est utilisé.

Les appareils destinés à être remplis automatiquement sont raccordés à un réseau de distribution d'eau à la pression indiquée par le fabricant.

Si le fabricant indique une plage de pressions, la pression est réglée de façon à obtenir les conditions les plus défavorables.

La température de l'eau d'alimentation est de 15 °C ± 5 °C.

Les moteurs incorporés dans l'appareil sont mis en fonctionnement de la manière prévue, dans les conditions les plus défavorables qui peuvent se produire en utilisation normale, en tenant compte des instructions.

3.5 Définitions relatives aux types d'appareils

3.5.101
plonge électrique
appareil destiné au rinçage de la vaisselle, des couverts, des baguettes et des ustensiles de cuisine avec de l'eau chauffée dans l'appareil lui-même

3.8 Définitions relatives à des sujets divers

3.8.101
niveau indiqué
marque sur l'appareil indiquant le niveau maximal du liquide pour un fonctionnement correct

3.8.102
mur d'installation
construction fixe spéciale comportant les dispositifs pour alimenter les appareils qui y seront raccordés

4 Exigence générale

L'article de la Partie 1 s'applique.

5 Conditions générales d'essais

L'article de la Partie 1 s'applique avec les exceptions suivantes.

5.10 *Addition:*

Les appareils destinés à être installés en batterie avec d'autres appareils et les appareils destinés à être fixés à un ***mur d'installation*** *sont enveloppés de façon à obtenir une protection contre les chocs électriques et contre les effets nuisibles de la pénétration de l'eau équivalente à celle obtenue lorsqu'ils sont installés selon les instructions fournies avec l'appareil.*

NOTE 101 Des enveloppes appropriées ou des appareils supplémentaires peuvent être nécessaires pour les essais.

5.101 *Les appareils sont soumis à l'essai en tant qu'****appareils chauffants*** *lorsque, au cours d'un mode de fonctionnement, des dispositifs de chauffage électriques sont alimentés. Si aucun dispositif de chauffage électrique n'est alimenté, les appareils sont soumis à l'essai en tant qu'****appareils à moteur****.*

5.102 *Les appareils assemblés avec d'autres appareils ou incorporant d'autres appareils sont soumis à l'essai conformément aux exigences de la présente norme. Les autres appareils sont mis en fonctionnement simultanément, conformément aux exigences des normes correspondantes.*

6 Classification

L'article de la Partie 1 s'applique avec les exceptions suivantes.

6.1 *Remplacement:*

Les appareils doivent être de la **classe I** en ce qui concerne la protection contre les chocs électriques.

La vérification est effectuée par examen et par les essais appropriés.

6.2 *Addition:*

Les appareils destinés à être utilisés sur une table doivent être au moins IPX3. Les autres appareils doivent être au moins IPX4.

7 Marquage et instructions

L'article de la Partie 1 s'applique avec les exceptions suivantes.

7.1 *Addition:*

Les appareils doivent porter l'indication de la pression d'eau ou la plage des pressions, en kilopascals (kPa), pour les appareils destinés à être reliés à un réseau de distribution d'eau, à moins que cette indication ne figure sur les instructions.

7.12 *Addition:*

Si le symbole IEC 60417-5021 (2002-10) est marqué sur l'appareil, sa signification doit être expliquée.

Les instructions doivent alerter sur les blessures potentielles et indiquer que la vaisselle ne doit pas contenir de résidus alimentaires coupants tels que des arêtes de poisson ou des fragments d'os pointus avant d'être placée dans l'appareil.

Les instructions doivent comporter en substance l'indication suivante:

> Ces appareils sont destinés à être utilisés pour des usages commerciaux, par exemple dans les cuisines des restaurants, des cantines, des hôpitaux et des entreprises artisanales, telles que les boulangeries, les boucheries, etc.

Si le fabricant souhaite limiter l'utilisation de l'appareil à un domaine plus restreint que celui décrit ci-dessus, cette restriction doit être clairement indiquée dans les instructions.

Si la température de l'eau dépasse 45 °C, les instructions doivent comporter en substance l'indication suivante:

> AVERTISSEMENT – La température de l'eau est élevée. Des gants de protection doivent être portés de manière à protéger contre les accidents.

Modification:

Les instructions concernant les personnes (y compris les enfants) dont les capacités physiques, sensorielles ou mentales sont réduites, les personnes dénuées d'expérience et de connaissances et les enfants jouant avec l'appareil ne s'appliquent pas.