

# 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



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IEC 60335-2-62

Edition 4.0 2019-12

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –****Part 2-62: Particular requirements  
for commercial electric rinsing sinks****FOREWORD**

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

This fourth edition cancels and replaces the third edition published in 2002 and its Amendment 1:2008. This edition constitutes a technical revision.

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

- indicates specific values for temperatures for accessible parts and water and aligns the text with IEC 60335-1, Edition 5, and its Amendments 1 and 2;
- requires the application of test probe 12 for the verification of access to live parts (8.101);
- foresees the use of a specific test probe for the measurements of temperatures of accessible surfaces (11.3);

- washing vessel (11.8);
- modification on leakage current defining the value for appliances with a power consumption less than 1 kW (13.2);
- addition of specific requirements concerning types of screws to be used for electrical connections and connections for earth continuity (Clause 28);
- addition of informative Annex P dealing with leakage currents for appliances used in tropical climates.

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

FDIS	Report on voting
61/5938/FDIS	61/5950/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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. It was established on the basis of the fifth edition (2010) 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 "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may 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.

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## 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.

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 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 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.

# 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 used for example in kitchens of restaurants, canteens, hospitals and commercial enterprises such as bakeries, 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; <https://standards.iteh.ai/catalog/standards/sist/949f699e-dd81-4073-85b9-6101c5111e93/iec-60335-2-62-2019>
- 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, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 1: Bolts, screws and studs*

ISO 3506-2, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 2: Nuts*

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

NOTE 101 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:* **normal operation**

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  $15\text{ °C} \pm 5\text{ °C}$ .

Motors incorporated in the appliance are operated in the intended manner, under the most severe 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**

an 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**

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

##### 3.8.102

##### **installation wall**

a 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.*

**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.*

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## 6 Classification

This clause of Part 1 is applicable except as follows.

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**6.1 Replacement:** <https://standards.iteh.ai/catalog/standards/sist/949f699e-dd81-4073-85b9-61c8cb25ef7f/iec-60335-2-62-2019>

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 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.

*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.

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For appliances that are permanently connected to fixed wiring and for which leakage currents may 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 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

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This clause of Part 1 is applicable except as follows.

**10.1 Addition:** <https://standards.iteh.ai/catalog/standards/sist/949f699e-dd81-4073-85b9-61c8cb25ef7f/iec-60335-2-62-2019>

*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 are installed in accordance with the manufacturer's instructions. If no instructions are given, these appliances are considered as appliances normally 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  $4\text{ N} \pm 1\text{ N}$  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 be selected by the control, imposes the most severe 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 are measured.

#### 11.7 Replacement:

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:

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

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

Surface <sup>a</sup>	Temperature rise of external accessible surfaces <sup>b</sup> K
Bare metal	48
Coated metal <sup>c</sup>	59
Glass and ceramic	65
Plastic and plastic coating > 0,4 mm <sup>d</sup>	74

<sup>a</sup> 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.

<sup>b</sup> Metal is considered coated when a coating having a minimum thickness of 90 µm made by enamel or non-substantially plastic coating is used.

<sup>c</sup> The temperature rise limit of plastic also applies for plastic material having a metal finish of thickness less than 0,1 mm.

<sup>d</sup> 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.