

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Household and similar electrical appliances – Safety –
Part 2-64: Particular requirements for commercial electric kitchen machines

Appareils électrodomestiques et analogues – Sécurité –
Partie 2-64: Règles particulières pour les machines de cuisine électriques à
usage commercial

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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –****Part 2-64: Particular requirements for commercial
electric kitchen machines**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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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This part of International Standard IEC 60335 has been prepared by IEC subcommittee 61E: Safety of electrical commercial catering equipment, of IEC technical committee 61: Safety of household and similar electrical appliances.

This third edition cancels and replaces the second edition published in 1997 and its amendment 1 (2000). It constitutes a technical revision.

This bilingual version (2016-01) corresponds to the monolingual English version, published in 2002-11.

The text of this part of IEC 60335 is based on the following documents:

FDIS	Report on voting
61E/408/FDIS	61E/420/RVD

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

The French version of this standard has not been voted upon.

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 fourth edition (2001) 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: Safety requirements for commercial electric kitchen machines.

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 of Part 1 concerns an adjective, the adjective and the associated noun are also in bold .

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

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

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The following differences exist in the countries indicated below.

- 6.1: Class 01 appliances are allowed if their rated voltage does not exceed 150 V (Japan).
- 6.2: For appliances intended to be installed in a kitchen, an appropriate degree of protection against harmful ingress of water is required according to their height of installation (France).
- 13.2: Leakage current limits are different (Japan).
- 16.2: Leakage current limits are different (Japan).
- Clause 21: For appliances intended to be installed in a kitchen, different values of impact energy are applicable according to the height of the impact point (France).

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.

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.

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.

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.

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HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-64: Particular requirements for commercial electric kitchen machines

1 Scope

This clause of Part 1 is replaced by the following.

This standard deals with the safety of electrically operated commercial **kitchen machines** not intended for household use, 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 restaurants, canteens, hospitals and commercial enterprises such as bakeries, butchers, etc.

NOTE 102 Examples of kitchen machines are

- mixers;
- liquid or food blenders;
- kneaders;
- beaters;
- shredders;
- graters;
- mincers;
- slicers;
- peelers;
- tin openers;
- coffee grinders;
- machines used for washing and/or drying food;
- portioning machines;
- pastry rollers;
- noodle strip cutters;
- food processors;
- beam mixers.

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This standard also applies to appliances which, in order to facilitate transport, are supplied in several parts (sub-assemblies) which, when assembled at the place of installation, form a constructional unit without the use of any additional parts.

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 103 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may 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 104 This standard does not apply to

- 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);
- continuous process appliances for the mass production of food;
- independent conveying equipment, such as food distribution belts.

2 Normative references

This clause of Part 1 is applicable.

3 Definitions

This clause of Part 1 is applicable except as follows.

3.1.4 Addition:

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

The appliance is operated without load at **rated voltage** and with controls intended to be adjusted by the user set at maximum until steady conditions are established. The appliance is then loaded in appropriate steps, the supply voltage being maintained at its original value. For each step, steady conditions have to be established before increasing the load. This operation is repeated until just before an overload release operates, or until the steady condition with the highest temperature has been attained.

NOTE 101 The load may be achieved by using an electrical or mechanical brake.

Where it is not possible or is impractical to apply effectively an electrical or mechanical brake, the load is 115 % of the input measured when the appliance is operated without load at **rated voltage** and normal operating temperature, and with controls intended to be adjusted by the user set at maximum.

NOTE 102 Examples of such appliances are

- liquid blenders;
- slicers;
- peelers;
- coffee grinders;
- machines used for washing and/or drying food;
- portioning machines.

3.101

indicated level

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

3.102

installation wall

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

3.103**guard plate**

plate similar to a slice thickness plate, fitted to machines with automatic product feeding

3.104**product holder**

support for the product to be sliced. The **product holder** can be equipped with a **pusher** or a **feed carriage** and/or a clamping device

3.105**sliding feed table**

device that supports the **product holder** and allows it to move forwards and backwards

3.106**feed carriage**

device on which the product is placed and that slides on top of the **product holder** in order to move the product towards the blade

3.107**pusher**

device used to move the product along the **product holder** against the thickness plate

3.108**last slice device**

plate with which the last portion of the product is fed to the cutting blade

NOTE The plate can be fitted on the **pusher**, clamping device or **feed carriage**.

4 General requirement

[IEC 60335-2-64:2002](https://standards.iteh.ai/catalog/standards/sist/c5bcf676-08fb-4605-84ad-dbeacdb18a1c/iec-60335-2-64-2002)

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

5.6 Addition:

Speed controls are set in accordance with the instructions for use.

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 may be needed for test purposes.

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

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:

Hand-held appliances shall be **class II** or **class III** with respect to protection against electric shock. Other appliances shall be **class I**, **class II** or **class III** with respect to protection against electric shock.

Compliance is checked by inspection and by the relevant tests.

6.2 Modification:

Instead of the requirement, the following applies.

Appliances shall be at least IPX1 with respect to protection against harmful ingress of water.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 Addition:

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If the appliance is marked with rated "on" and "off" periods, the marking shall correspond to normal use. The marking of the "on" period shall precede the marking of the "off" period, both markings being separated by an oblique stroke.

In 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 for use.

If the reversal of a motor could cause a hazard, then the direction of rotation should be clearly and visibly indicated on the motor, if the direction of rotation depends on the way the motor is connected to the supply.

7.6 Addition:



[symbol 5021 of IEC 60417-1]

equipotentiality

7.12 Addition:

The instructions for use shall include the operating times and speed settings for accessories, unless this information is marked on the appliance.

The instructions for use shall warn against misuse, and shall state that care is needed when handling cutting blades during cleaning.

The instructions for use shall contain instructions for cleaning of all surfaces coming into contact with food during normal use.

Operating instructions included in the operating manual shall clearly indicate how to use particular or special safeguards provided with the appliance, and shall draw the attention of

the user to any remaining hazards and give information about preventative measures to be taken by the user for the safe use of the appliance.

NOTE 101 Examples of appliances with remaining hazards are those that are not subjected to the test with the test probe in 20.2.

Information shall also be given about the correct assembly and safe use of accessories provided with the appliance and, if relevant, about possible hazards that might arise when using accessories other than those provided with the appliance. The instructions for use shall warn the user to use a suitable bowl with attachable accessories such as egg beaters and sieving machines, and shall indicate that the accessory must not project from the upper part of the bowl.

The instructions for use for hand-held blenders and whisks shall contain a warning against the use of these appliances when not in contact with the product.

The instructions for use for food processors shall state that care is needed when handling cutting blades, especially when removing the blades from the bowl, emptying the bowl and during cleaning.

The instructions for use for mincers, where the required safety at the discharge outlets depends entirely on perforated discs provided with the appliance, shall contain a warning against use of perforated discs with oval shaped holes or holes of a greater diameter.

The instructions for use for slicers shall give details for assembly and removal of blades and shall require that the slice thickness plate or **guard plate** shall be set to the zero position during the cleaning of the blade while still installed in the appliance.

The instructions for use shall identify separate sharpening devices suitable for use with the appliance, and shall state that only those devices shall be used.

NOTE 102 A code or similar means may be used for identification purposes.

If symbol 5021 is marked on the appliance its meaning shall be explained.

7.12.1 Replacement:

The appliance shall be accompanied by instructions detailing any special precautions necessary for installation. 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.

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.

Compliance is checked by inspection.

7.101 Equipotential bonding terminals shall be marked with symbol 5021 of IEC 60417-1.

These markings shall not be placed on screws, removable washers or other parts that can be removed when conductors are being connected.

Compliance is checked by inspection.

7.102 Appliances intended to be filled by hand or by 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.

9 Starting of motor-operated appliances

This clause of Part 1 is applicable except as follows.

9.101 Motors incorporated in the appliance shall start within three seconds, if delayed starting could result in a hazard.

Fan motors, providing a cooling effect in order to comply with the requirements of Clause 11, shall start under all voltage conditions that may occur in use.

*Compliance is checked by starting the motor three times at a voltage equal to 0,85 times **rated voltage**, the motor being at room temperature at the beginning of the test.*

*The motor is started each time under the conditions occurring at the beginning of **normal operation** or, for automatic appliances, at the beginning of the normal cycle of operation, the motor being allowed to come to rest between successive starts. For appliances provided with motors having other than centrifugal starting switches, this test is repeated at a voltage equal to 1,06 times **rated voltage**.*

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*In all cases, the motor shall start and it shall function in such a way that safety is not affected, and the overload **protection devices** of the motor shall not operate.*

NOTE The supply source is such that, during the test, the drop in voltage does not exceed 1 %.

10 Power input and current

This clause of Part 1 is applicable except as follows.

10.1 Addition:

NOTE 101 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.

11.7 Replacement:

Appliances are operated until steady conditions are established.

NOTE 101 The duration of the test may consist of more than one cycle of operation. If the appliance is marked with rated "on" and "off" periods, it is taken into account.

12 Void**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 appliances without heating elements 3,5 mA
- for appliances with heating elements, cord and plug connected 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA
- for other appliances with heating elements 1 mA per kW **rated power input** of the appliance with no maximum

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14 Transient overvoltages

This clause of Part 1 is applicable. [IEC 60335-2-64:2002
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15 Moisture resistance

This clause of Part 1 is applicable except as follows.

15.1.1 Addition:

In addition, IPX1, IPX2, IPX3 and IPX4 appliances are subjected for 5 min to the following splash test.

The apparatus shown in Figure 101 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.

15.1.2 Modification:

Appliances normally 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 Replacement:

Appliances shall be constructed so that spillage of liquid in normal use does not affect their electrical insulation.

Compliance is checked by the following test.

*Appliances with **type X attachment**, except those having a specially prepared cord, are fitted with the lightest permissible type of flexible cable or cord of the smallest cross-sectional area specified in 26.6, and other appliances are tested as delivered.*

***Detachable parts** are removed or in position, whichever is the most unfavourable.*

Water outlets, if any, are blocked.

The water containers of appliances intended to be filled with water by hand are completely filled with water containing approximately 1 % NaCl and a further quantity, equal to 15 % of the capacity of the container but not more than 10 l, is poured in steadily over a period of 1 min.

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 1 min after the first evidence of overflow, or until a further protective system operates to stop the inflow.

*With the container filled with water, the appliance is then operated at **rated voltage** for 15 s. Lids or covers are in position or removed, whichever is the most unfavourable.*

*The appliance shall then withstand the electric strength test of 16.3, and inspection shall show that there is no trace of water on the insulation that could result in a reduction of **clearances** and **creepage distances** below the values specified in Clause 29.*

15.3 Addition: <https://standards.iteh.ai/catalog/standards/sist/c5bcf676-08fb-4605-84ad-dbeacdb18a1c/iec-60335-2-64-2002>

NOTE 101 If it is not possible to place the whole appliance in the humidity cabinet, parts containing electrical components are tested separately, taking into account the conditions that occur in the appliance.

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 appliances without heating elements 3,5 mA
- for appliances with heating elements, cord and plug connected 1 mA per kW **rated power input** of the appliance with a maximum of 10 mA