

INTERNATIONAL STANDARD

IEC
60335-2-49

Fourth edition
2002-11

Household and similar electrical appliances – Safety –

Part 2-49: Particular requirements for commercial electric hot cupboards

*Appareils électrodomestiques et analogues –
Sécurité –*

*Partie 2-49:
Règles particulières pour les armoires chauffantes
électriques à usage collectif*



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –****Part 2-49: Particular requirements
for commercial electric hot cupboards**

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.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

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 fourth edition cancels and replaces the third edition published in 2000. It constitutes a technical revision.

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

FDIS	Report on voting
61E/404/FDIS	61E/416/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.

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 hot cupboards.

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.

The following differences exist in the countries indicated below.

- 6.1: Class 01 appliances are allowed (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).
- 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).

A bilingual version of this publication may be issued at a later date.

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.

<https://standards.iteh.ai/>

<https://standards.iteh.ai/c/standards/iec/0835/187-0223-4b49-bd48-903ec2fbb371/iec-60335-2-49-2002>

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-49: Particular requirements for commercial electric hot cupboards

1 Scope

This clause of Part 1 is replaced by the following:

This International Standard deals with the safety of electrically operated commercial **hot cupboards** 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.

Hot cupboards with **heated tops, heated display cases, heated crockery dispensers** and heated shelves and tables are also within the scope of this standard.

NOTE 101 These appliances are used, for example in restaurants, canteens, hospitals and similar commercial enterprises.

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 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;
- for appliances intended to be used outdoors, additional requirements may be necessary.

NOTE 103 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;
- bains-marie (IEC 60335-2-50).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60436, *Methods for measuring the performance of electric dishwashers*

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

Appliances are operated empty and with any controls intended to be operated by the user set at the maximum.

If the appliance cannot be operated empty, then the manufacturer's instructions are taken into account.

Doors, covers or lids, if any, are placed in their intended positions.

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 manufacturer's instructions.

3.101

hot cupboard

an appliance that is used for maintaining the temperature of hot food and for the warming of crockery

3.102

heated top

the top surface of a **hot cupboard**, that is designed to maintain the required temperature. It may be heated indirectly by the **hot cupboard** heating elements or directly by separate heating elements

3.103

heated display case

a **hot cupboard** in which food is displayed, the heated food being served from the display

3.104

heated crockery dispenser

an appliance designed specifically for the storage, warming and dispensing of plates, etc.

3.105

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 obtained 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 **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.*

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.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 Addition:

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.

7.6 Addition:



[symbol 5021 of IEC 60417-1]

equipotentiality

7.12 Addition:

The instructions of appliances provided with wheels or similar means shall also state the maximum load, in kilograms (kg), of the appliance.

If symbol 5021 of IEC 60417-1 is marked on the appliance its meaning shall be explained.