

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Household and similar electrical appliances – Safety –  
Part 2-75: Particular requirements for commercial dispensing appliances and  
vending machines**

**Appareils électrodomestiques et analogues – Sécurité –  
Partie 2-75: Règles particulières pour les distributeurs commerciaux avec ou  
sans moyen de paiement**



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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

#### Part 2-75: Particular requirements for commercial dispensing appliances and vending machines

#### FOREWORD

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

This consolidated version of IEC 60335-2-75 consists of the second edition (2002) [documents 61/2224/FDIS and 61/2299/RVD], its amendment 1 (2004) [documents 61/2743/FDIS and 61/2795/RVD] and its amendment 2 (2008) [documents 61/3643/FDIS and 61/3683/RVD].

The technical content is therefore identical to the base edition and its amendments and has been prepared for user convenience.

It bears the edition number 2.2.

A vertical line in the margin shows where the base publication has been modified by amendments 1 and 2.

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 electric commercial dispensing appliances and vending 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 concerns an adjective, the adjective and the associated noun are also in bold.

The following differences exist in the countries indicated below

- 6.1: Class 0I is allowed for appliances used indoors having a rated voltage not exceeding 150 V (Japan).
- 11.7: The number of vending cycles is specified to determine the duration of the test (USA).
- 13.2: The leakage current limits are different (Japan).
- 16.2: The leakage current limits are different (Japan).
- 20.1: The test is different (USA).
- Clause 21: Metal enclosures are not subjected to the test (USA).
- 22.7: A pressure relief device shall operate before the rated pressure of the vessel has been exceeded (USA).
- 22.7: The test pressure is five times rated pressure (USA).
- 24.103: Self-resetting thermal cut-outs are allowed if they have been evaluated for reliability (USA).
- 25.7: Ordinary polyvinyl chloride sheathed supply cords are allowed (Australia and New Zealand).
- 25.7: Lighter supply cords are allowed (USA).
- 27.2: The addition is not applicable (USA).
- Annex AA: Elastomeric parts are evaluated differently (USA).

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

2 | 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 the amendment 2 be adopted for implementation nationally not earlier than 12 months or later than 36 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.

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.

- 2 | 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 2-75: Particular requirements for commercial dispensing appliances and vending machines

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric commercial **dispensing appliances** and **vending machines** for preparation or delivery of food, drinks and consumer products, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

NOTE 101 Examples of appliances that are within the scope of this standard are

- bulk tea or coffee brewing machines;
- cigarette **vending machines**;
- coffee grinders
- commercial liquid heaters;
- espresso coffee appliances;
- hot and cold beverage **vending machines**;
- hot water **dispensers**;
- ice cream and whipped cream **dispensers**;
- ice **dispensers**;
- newspaper, audio or video tape or disc **vending machines**;
- packaged food and drink **vending machines**;
- refrigerated merchandisers

Appliances may have more than one function.

NOTE 102 Other standards may be applicable for some functions such as

- refrigeration (IEC 60335-2-24);
- heating by microwaves (IEC 60335-2-25);
- coffee grinding (IEC 60335-2-64).

This standard also deals with the hygiene aspects of appliances.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by users and **maintenance persons**. However, in general, it does not take into account young children playing with the appliance.

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 for appliances incorporating pressure vessels are specified;
- 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 intended to be used exclusively for household purposes;
- appliances intended to be used 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);



- commercial electric boiling pans (IEC 60335-2-47);
- commercial electric bains-marie (IEC 60335-2-50);
- amusement machines and personal service machines (IEC 60335-2-82);
- appliances solely used for dispensing money;
- display cabinets;
- appliances incorporating electrode-type water heaters.

## 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

IEC 60335-2-34, *Safety of household and similar electrical appliances – Part 2-34: Particular requirements for motor-compressors*

ISO 1817:1999, *Rubber, vulcanized – Determination of the effect of liquids*

## 3 Definitions

This clause of Part 1 is applicable except as follows.

### 3.1.9 Replacement:

#### **normal operation**

operation of the appliance under the following conditions

The appliance is operated in the **standby mode** until steady conditions are established and then under the most unfavourable dispensing procedure. The appliance is refilled when necessary in accordance with the instructions for use, or the **instructions for maintenance**, and the next operating period started as soon as possible.

Lids and covers of **appliances of the professional type** and of **appliances of the supervised type** are placed in their intended positions.

### 3.6.2 Replacement:

#### **detachable part**

part that can be removed without the aid of a **tool**, a part that is removed in accordance with the instructions for use or the **instructions for maintenance**, even if a **tool** or **access key** is needed for removal, or a part that does not fulfill the test of 22.11

NOTE 101 If a part has to be removed for installation purposes, this part is not considered to be detachable even if the instructions state that it is to be removed.

NOTE 102 A part that can be opened is considered to be a part that can be removed.

### 3.7.3 Replacement:

#### **thermal cut-out**

device that during abnormal operation limits the temperature of the controlled part by automatically opening the circuit, or reducing the current, and is constructed so that its setting cannot be altered by the user or the **maintenance person**

### 3.8.5 Replacement:

#### **maintenance operation**

operation performed in the **maintenance area** or **user area**, such as preparing the appliance for new products or new operating methods, cleaning, price changing, replenishing, coin collecting and setting of controls or similar operations

NOTE 101 **Maintenance operation** does not include operations performed in the **service area**.

#### 3.101

##### **rated pressure**

pressure assigned to the pressurized parts of the appliance by the manufacturer

#### 3.102

##### **standby mode**

appliance filled as intended with ingredients or products, energized and ready for use, cash boxes and overflow containers being empty

#### 3.103

##### **access key**

key or other means that gives access to the **maintenance area** but does not give access to the **service area**

NOTE "Other means" includes a **tool** or operation by codes or signals, produced by optical or electromagnetic sources.

#### 3.104

##### **override key**

key or other means that is used to render an interlock inoperative

#### 3.105

##### **dispensing appliance**

appliance intended to deliver or make available food, drinks or other consumer products

NOTE 1 The appliance may also prepare the products.

NOTE 2 The dispensing operation may be initiated manually or by means such as coins or credit cards.

#### 3.106

##### **vending machine**

**dispensing appliance** that is operated by coins, credit cards or other means of payment

#### 3.107

##### **instructions for maintenance**

instructions explaining how to carry out cleaning, replenishing, coin collecting, setting of controls and similar operations

#### 3.108

##### **maintenance person**

person who maintains the appliance in accordance with the **instructions for maintenance**

#### 3.109

##### **user area**

area where access is gained without the use of an **access key** or a **tool**

NOTE 1 The **user area** of **appliances of the supervised type** is determined with **detachable parts** and other movable parts, such as doors and lids, in position as in normal use.

NOTE 2 **Appliances of the professional type** have no **user area**.

#### 3.110

##### **maintenance area**

area where access can only be gained by the use of an **access key**

### 3.111

#### **service area**

area where access cannot be gained by the use of an **access key** alone

### 3.112

#### **appliance of the professional type**

**dispensing appliance** that is only intended to be used by trained personnel such as kitchen or bar staff

### 3.113

#### **appliance of the supervised type**

**dispensing appliance** that is intended to be maintained by trained personnel but may be used by other persons in a location where its use is overseen

NOTE Dining rooms in restaurants are examples of such locations.

### 3.114

#### **potentially hazardous food**

food which includes natural or synthetic ingredients that are capable of supporting rapid and progressive growth of pathogenic or toxin producing micro-organisms

NOTE 1 Examples of **potentially hazardous food** are milk, eggs, meat, poultry, shellfish, crustacean, and their products, either raw or heat treated, as well as food of plant origin that is ready for consumption without the need for any further preparation or processing.

NOTE 2 Food may become **potentially hazardous food** during processing, for example when powdered ingredients are mixed with water or when food is stored at incorrect temperature.

NOTE 3 **Potentially hazardous food** does not include:

- candy, nuts, gum and similar confectionery;
- cookies, crackers and similar bakery products;
- instant-coffee, chocolate, cocoa and sugar;
- food having a pH level of not greater than 4,6 or a water activity ( $A_w$ ) value not greater than 0,85 at 25 °C;
- food maintained at a temperature not exceeding 5 °C for periods specified by the producer, but for not more than 5 days;
- food maintained at a temperatures above 65 °C or below -18 °C;
- food in hermetically sealed containers;
- food that has been processed to prevent spoilage.

## 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.

### 5.2 Addition:

NOTE 101 If the test of 15.102 has to be carried out, three additional samples are required.

### 5.6 Replacement:

*Controls or switching devices in the **user area** are adjusted to the most unfavourable setting.*

*Controls, switching devices or other parts in the **maintenance area** are adjusted to the most unfavourable setting within limits stated in the **instructions for maintenance**.*

NOTE 101 Controls or switching devices in the **service area** are not adjusted.

**5.9 Addition:**

*When alternative software is made available by the appliance manufacturer, the appliance is tested with the software that gives the most unfavourable results.*

**5.10 Addition:**

NOTE 101 **Access keys** and **override keys** may be supplied separately from the appliance.

*Appliances are installed in accordance with the instructions provided with the appliance before testing.*

*If the instructions state that the appliance may be installed together with other appliances, the effect of this combination is taken into account.*

**5.101** *Appliances intended to be connected to the water mains are supplied with water having a temperature of  $15\text{ °C} \pm 5\text{ °C}$  and the most unfavourable pressure specified in the instructions. For appliances that are manually filled with water, the temperature of the water is  $15\text{ °C} \pm 5\text{ °C}$ .*

*For appliances intended to cool water, the temperature of the water is  $25\text{ °C} \pm 5\text{ °C}$ .*

**5.102** *The requirements of this standard for the **maintenance area** are applicable when the **instructions for maintenance** are being followed. If an **access key** is provided for access to the **maintenance area**, it is used before a test is carried out if this is more unfavourable.*

**5.103** *When reference is made to the application of test probe B, test probe 18 of IEC 61032 is also applied in the **user area**.*

**5.104** *Appliances of the **professional type** and appliances of the **supervised type** are tested as **heating appliances** even if they incorporate a motor.*

NOTE If these appliances do not contain heating elements, they are tested as **motor-operated appliances**.

## **6 Classification**

This clause of Part 1 is applicable except as follows.

**6.1 Modification:**

Appliances shall be **class I**, **class II** or **class III**.

**6.2 Addition:**

Appliances intended for outdoor use shall be at least IPX4.

Appliances that may be cleaned by water jets, or installed where water jets are liable to be used, shall be at least IPX5.

## **7 Marking and instructions**

This clause of Part 1 is applicable except as follows.

### 7.1 Addition:

Appliance shall be marked with

- their **rated pressure**, in megapascals, if applicable;
- the maximum permissible water pressure, in megapascals, for appliances intended to be connected to the water mains.

Appliances intended to be filled by hand shall have means that indicate when the required level for correct operation has been reached.

NOTE 101 A level mark or an audible or visual signal are suitable means.

For appliances incorporating a socket outlet, the voltage, nature of the supply and current or power output shall be marked in the vicinity of the socket outlet.

Appliances intended to be partially immersed in water for cleaning shall be marked with the maximum level of immersion and with the substance of the following:

Do not immerse beyond this level.

### 7.3 Addition:

The requirement also applies when the adjustment has to be made by the **maintenance person**.

2 |

### 7.8 Addition:

2 | Terminals for equipotential bonding shall be indicated by symbol IEC 60417-5021 (2002-10).

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

### 7.12.1 Addition:

The installation instructions for appliances intended to be connected to the water mains shall specify the means of connection and draw attention to any national rules that may be applicable.

The installation instructions shall state if the appliance is suitable for outdoor use.

The installation instructions shall state the maximum and minimum ambient temperatures for correct operation.

For appliances that are not at least IPX5, the instructions shall state that the appliance is not suitable for installation in an area where a water jet could be used.

The installation instructions shall state the maximum tilt of the appliance for safe operation.

NOTE 101 A tilt of less than 2° need not be stated. An instruction such as "the appliance has to be placed in a horizontal position" is sufficient.

The installation instructions for **appliances of the professional type** shall state that the appliance is only to be installed in locations where its use and maintenance is restricted to trained personnel.

The installation instructions for **appliances of the supervised type** shall state that the appliance is only to be installed in locations where it can be overseen by trained personnel.

The installation instructions for **class I appliances of the professional type** that are intended to be permanently connected to fixed wiring, and have a leakage current that may exceed 10 mA, shall state that the installation of a residual current device (RCD) having a rated residual operating current not exceeding 30 mA is advisable.

**7.12.101** If it is necessary to take special precautions during **maintenance operations**, details of these shall be supplied. The **instructions for maintenance** shall state how to gain access to the **maintenance area** including how to use the **access key** and the **override key**. They shall not include instructions on how to gain access to a **service area**.

*Compliance is checked by inspection.*

**7.12.101.1** The **instructions for maintenance** shall specify the method and frequency of cleaning. They shall include details for descaling, disinfecting, flushing and removal of any residual cleaners, sterilizers or descalers from the appliance, if applicable. Recommended cleaning or disinfecting agents shall be specified.

NOTE 101 The agents may be identified by their chemical denomination.

If the appliance is not at least IPX5, the **instructions for maintenance** shall state that the appliance must not be cleaned by a water jet.

The **instructions for maintenance** for appliances incorporating an appliance inlet, and intended to be partially or completely immersed in water for cleaning, shall state that the connector must be removed before the appliance is cleaned and that the appliance inlet must be dried before the appliance is used again.

*Compliance is checked by inspection.*

**7.12.101.2** If the use of an **override key** allows access to moving parts, a suitable warning shall be given in the **instructions for maintenance**.

*Compliance is checked by inspection.*

**7.12.101.3** The **instructions for maintenance** shall list any accessories that may be used with the appliance.

*Compliance is checked by inspection.*

**7.12.101.4** The **instructions for maintenance** shall state the maximum and minimum ambient temperatures for correct operation.

For appliances using water, the **instructions for maintenance** shall give details concerning the prevention of freezing or how to ensure safe operation if freezing occurs.

*Compliance is checked by inspection.*

**7.12.101.5** The **instructions for maintenance** for appliances containing pressurized gas shall give details on the safe handling of the pressurized containers and of the gas.

*Compliance is checked by inspection.*