

Safety of household and similar electrical appliances —

Part 2-75: Particular requirements for commercial dispensing appliances and vending machines (electric or gas-heated)

The European Standard EN 60335-2-75:2002 has the status of a British Standard

ICS 55.230

National foreword

This British Standard is the official English language version of EN 60335-2-75:2002. It was derived by CENELEC from IEC 60335-2-75:1995. It supersedes BS 3456-102.71:1991 which will be withdrawn on 2005-03-01.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by common modification tags.  

The UK participation in its preparation was entrusted by Technical Committee CPL/61, Safety of household and similar electrical appliances , to Subcommittee CPL/61/25, Food and drink dispensing machines, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 13 September 2002

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Safety of household and similar electrical appliances
Part 2-75: Particular requirements for commercial
dispensing appliances and vending machines
(electric or gas-heated)
(IEC 60335-2-75:1995, modified)

Sécurité des appareils
électrodomestiques et analogues
Partie 2-75: Règles particulières pour les
distributeurs commerciaux avec ou sans
moyen de paiement (électriques ou
alimentés aux combustibles gazeux)
(CEI 60335-2-75:1995, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2-75: Besondere Anforderungen
für Ausgabegeräte und Warenautomaten
für den gewerblichen Gebrauch
(IEC 60335-2-75:1995, modifiziert)

This European Standard was approved by CENELEC on 2002-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 61/896/DIS, first edition of IEC 60335-2-75, prepared by the IEC Technical Committee 61, was submitted to the IEC-CENELEC parallel voting procedure. This procedure started in May 1995 but the draft did not receive sufficient support from the CENELEC members. The comments were discussed during the Copenhagen meeting in May 1996 when it was decided to submit a draft for EN 60335-2-75 to the Unique Acceptance Procedure.

This draft was circulated in April 1997 but did not receive sufficient support. The comments were discussed during the Kristiansand meeting in June 2000 and the Brussels meeting in October 2000 when it was decided to submit a further draft for EN 60335-2-75 to the Unique Acceptance Procedure.

This draft was circulated in June 2001 and was ratified by CENELEC as EN 60335-2-75 on 2002-03-01.

The following dates are applicable:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2003-03-01
- date on which national standards
conflicting with the EN have to be withdrawn (dow) 2005-03-01

This standard has to be used in conjunction with EN 60335-1, Safety of household and similar electrical appliances, Part 1: General requirements. It was established on the basis of the 1994 edition of that standard. Amendments and revisions of Part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of Part 1.

This Part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Safety requirements for 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 of Part 1 is to be adapted accordingly.

Subclauses and figures which are additional to those in Part 1 are numbered starting with 101. Annexes which are additional to those in Part 1 are lettered AA, BB, etc. The reference of subclauses, notes, figures and annexes which are additional to those in IEC 60335-2-75 is prefixed with the letter Z.

There are no special national conditions causing a deviation from this European Standard, other than those listed in annex ZA to EN 60335-1.

NOTE Special national conditions for gas characteristics are listed in EN 437.

There are no national deviations from this European Standard, other than those listed in annex ZB to EN 60335-1.

NOTE 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 2. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

p NOTE In this document p is used in the margin to indicate instructions for preparing the printed version.

Introduction

An investigation by CENELEC TC 61 has shown that all risks from products within the scope of this standard are fully covered by the Low Voltage Directive, 73/23/EEC. For products having mechanical moving parts, a risk assessment in accordance with the Machinery Directive, 89/392/EEC, has shown that the risks are mainly of electrical origin and consequently this directive is not applicable. However, the relevant essential safety requirements of the Machinery Directive are covered by this standard together with the principal objectives of the Low Voltage Directive.

Endorsement notice

The text of the international Standard IEC 60335-2-75:1995 was approved by CENELEC as a European Standard with accepted common modifications .

CONTENTS

Clause	Page
1 Scope.....	5
2 Definitions	6
3 General requirement.....	8
4 General conditions for the tests	8
5 Void.....	10
6 Classification.....	10
7 Marking and instructions.....	10
8 Protection against access to live parts.....	14
9 Starting of motor-operated appliances	14
10 Power input and current.....	14
11 Heating.....	15
12 Void.....	16
13 Leakage current and electric strength at operating temperature.....	16
14 Void.....	16
15 Moisture resistance	16
16 Leakage current and electric strength.....	20
17 Overload protection of transformers and associated circuits	20
18 Endurance.....	20
19 Abnormal operation	20
20 Stability and mechanical hazards.....	22
21 Mechanical strength	23
22 Construction.....	23
23 Internal wiring.....	27
24 Components	27
25 Supply connection and external flexible cords	28
26 Terminals for external conductors.....	28
27 Provision for earthing	28
28 Screws and connections.....	29
29 Creepage distances, clearances and distances through insulation.....	29
30 Resistance to heat, fire and tracking.....	29
31 Resistance to rusting.....	29
32 Radiation, toxicity and similar hazards.....	29
Figure	30
Annexes	32

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

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

1 Scope

This clause of part 1 is replaced by:

Ⓒ This standard deals with the safety of commercial electric **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. It also applies to commercial electric espresso-coffee machines that can also be heated by gas (see annex ZAA). Ⓒ

NOTE 1 Examples of appliances which are within the scope of this standard are:

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

Appliances may have more than one function.

NOTE 2 Other part 2s 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).

So far as is practicable, this standard deals with the common hazards presented by appliances which are encountered by users and **maintenance persons**.

Ⓒ This standard does not, in general, take into account young children playing with the appliance. This standard also deals with the hygiene aspects of appliances. Ⓒ

NOTE 3 Electrical parts of appliances using other forms of energy are within the scope of this standard.

NOTE 4 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;
- for appliances intended to be used in tropical countries, special 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 5 This standard does not apply to:

- appliances intended exclusively for household use;
- appliances intended 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);
- service and amusement machines (IEC 60335-2-82);
- appliances solely used for dispensing money;
- display cabinets;
- appliances incorporating electrode-type water heaters;
- commercial electric bains-marie (IEC 60335-2-50).

NOTE 6 Appliances used by trained personnel are within the scope of this standard.

2 Definitions

This clause of part 1 is applicable except as follows:

2.2.9 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, replenishing, coin collecting and setting of controls or similar operations. **Ⓒ**

2.7.2 Replacement:

detachable part

part which can be removed without the aid of a **tool**, a part which 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 which does not fulfill the test of 22.11

NOTE 1 If for installation purposes a part has to be removed, this part is not considered to be detachable even if the instructions state that it is to be removed.

NOTE 2 A part which can be opened is considered to be a part which can be removed.

2.8.3 Replacement:

thermal cut-out

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

2.9.9 Replacement:

maintenance operation

operation stated in the instructions for use, the **instructions for maintenance** or marked on the appliance which the user or **maintenance person** is intended to perform.

NOTE 1 The **instructions for maintenance** marked on the appliance or supplied with the appliance or later, are applicable only to the **user area** and the **maintenance area**.

NOTE 2 **Maintenance operation** includes preparing and commissioning the appliance for new products or new operating methods.

2.101

rated pressure

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

2.102

standby mode

the appliance is ready for use, filled with water, ingredients or products in accordance with the instructions or until the inlet automatically closes. Cash boxes and overflow containers are empty

2.103

access key

key or other means which gives access to the **maintenance area** and which 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.

2.104

override key

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

2.105

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.

2.106

vending machine

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

2.107

instructions for maintenance

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

2.108

maintenance person

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

2.109

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**.

2.110

maintenance area

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

2.111

service area

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

2.112**appliance of the professional type**

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

2.113**appliance of the supervised type**

dispensing appliance which 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.

☐ 2.Z101 **cleanable surface**: Surface such that **soils** can be removed in accordance with the instructions for maintenance.

2.Z102 **disinfecting**: Inactivating all pathogens and a wide range of other micro-organisms to a level consistent with hygienic application of the appliance.

2.Z103 **food**: Any product or ingredient intended to be orally consumed.

2.Z104 **hygiene risk assessment**: Process for identifying hygiene hazards and the preventative measures for control of these hazards.

2.Z105 **potentially hazardous food**: Any **food** which consists in whole or in part of natural or synthetic ingredients which are in a form for which laboratory evidence demonstrates a capability for 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, crustacea, and their products, either raw or heat treated. **Food** of plant origin which is ready for consumption without the need for any further preparation or processing is also an example.

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 temperatures.

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

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

2.Z106 **soil**: Any unwanted matter, including product residues, micro-organisms, residual detergent or disinfectant solutions.

2.Z107 **vermin**: Mammals, birds, reptiles and insects which may adversely influence the **food**. ☐

3 General requirement

This clause of part 1 is applicable.

4 General conditions for the tests

This clause of part 1 is applicable except as follows:

4.3 Addition:

Compliance with 22.101 is determined during the tests of clause 8.

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

4.9 Addition:

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

4.10 Addition:

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

Before testing, appliances are installed in accordance with the instructions provided with the appliance.

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

4.101 *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 installation. For appliances which 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 $25\text{ °C} \pm 5\text{ °C}$.

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

4.103 *When reference is made to the application of the test finger of figure 1, the small test finger of figure 101 is also applied in the **user area**.*

4.104 ***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**.

5 Void

6 Classification

This clause of part 1 is applicable except as follows:

6.1 Replacement:

Appliances shall be one of the following classes with respect to protection against electric shock:

- class I, class II, class III.

Compliance is checked by inspection and by the relevant tests.

6.2 Addition:

Appliances intended for outdoor use shall be at least IPX4.

Appliances which 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:

- **rated pressure**, in MPa (bar), if applicable;
- maximum static water pressure for appliances intended to be connected to the water mains in MPa (bar).

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

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

For appliances having 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**.

7.6 Addition:



..... equipotentiality (symbol 60417-2-IEC-5021)

7.8 Addition:

Terminals for equipotential bonding shall be indicated by the equipotentiality symbol.

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

7.12.1 Replacement:

 If it is necessary to take special precautions during installation or **maintenance operations**, details of these shall be supplied, including the use of personal protective equipment, if necessary.

The **instructions for maintenance**, supplied with the appliance or later, shall state how to gain access to the **maintenance area**. They shall not include instructions on how to gain access to a **service area**.

The **instructions for maintenance** shall

- specify the types of **food** for which the appliance is suitable,
NOTE Z1 Different **foods** may require different instructions.
- give details on how to ensure hygienic operation for the range of **foods** specified,
- include instructions for descaling, cleaning and details for the flushing and removal of any residual cleaners, sterilizers or descalers from the appliance, if applicable,
- specify the method and frequency of cleaning, **disinfecting** and rinsing together with the recommended cleaning or disinfecting agents.

NOTE Z2 The agents may be identified by their chemical denomination. 

Ⓒ The **instructions for maintenance** for appliances intended for storage and dispensing **potentially hazardous food**, when the safety of the **food** depends upon the temperature of the appliance, shall include details for safe loading of the **food**.

NOTE Z3 This instruction is not required for appliances

- which do not dispense **food**,
- which dispense **food** in sealed containers such as cans and bottles.

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.

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

If it is necessary to take special precautions during handling and storage prior to installation of the appliance, details shall be given.

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

Full document details: BS EN 60335-2-75:2002

Ⓒ 7.12.Z102.3 If the A-weighted sound pressure level determined in accordance with annex ZBB is above 85 dB, the instructions shall state the values of the sound pressure level and the sound power level in the following form:

A-weighted sound pressure level	xx dB, uncertainty y dB
A-weighted sound power level	XX dB, uncertainty Y dB Ⓒ

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 not applicable.

10 Power input and current

This clause of part 1 is applicable.

11 Heating

This clause of part 1 is applicable except as follows:

11.2 Modification:

Instead of the positioning of the appliance, the following applies:

Built-in appliances are installed according to the instructions for installation.

Other appliances are placed in a test corner as follows, a free space being provided above the appliance in accordance with the instructions for installation:

- *appliances normally fixed to a wall are fixed to one of the walls, as near to the other wall and to the floor or ceiling as is likely to occur in normal use, unless otherwise stated in the instructions for installation;*
- *appliances normally fixed to the floor or having a mass greater than 40 kg and not provided with casters or rollers, are installed in accordance with the instructions for installation;*

NOTE If no instructions are given, the appliance is placed on the floor as close to the walls as possible.

- *other appliances are placed on the floor as near to the walls as possible.*

11.4 Addition:

*If the temperature rise limits are exceeded in appliances incorporating motors, transformers or **electronic circuits**, and if the power input is lower than the **rated power input**, the test is repeated with the appliance supplied at 1,06 times the **rated voltage**.*

11.7 Replacement:

*The appliance is operated under **normal operation** until steady conditions are established, the appliance being refilled when necessary.*

NOTE Refilling may require the use of an **access key**.

11.8 Addition:

*The temperature rise of the surfaces in the **user area** shall not exceed the limits specified for handles, knobs, grips and similar parts which are held for short periods only.*

NOTE This does not apply to the surface of parts which need to be hot in order for the appliance to fulfil its function.

11.101 *For appliances incorporating refrigerating equipment and having motor-compressors not complying with IEC 60335-2-34, the test is repeated at an ambient temperature of 32 °C (43 °C for appliances for tropical countries). The non-refrigerated part of the appliance is operated under **standby mode** or so that the refrigerating system is operated under the most unfavourable conditions.*