

**Majapidamis- ja muud taolised elektriseadmed.
Ohutus. Osa 2-75: Erinõuded kaubanduslikele
jaotusseadmetele ja müügiautomaatidele**

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60335-2-75:2004 sisaldab Euroopa standardi EN 60335-2-75:2004 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 16.11.2004 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 60335-2-75:2004 consists of the English text of the European standard EN 60335-2-75:2004.

This standard is ratified with the order of Estonian Centre for Standardisation dated 16.11.2004 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

ICS 55.230

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EUROPEAN STANDARD

EN 60335-2-75

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2004

ICS 55.230

Supersedes EN 60335-2-63:1993 and EN 60335-2-75:2002

English version

**Household and similar electrical appliances –
Safety**
**Part 2-75: Particular requirements for commercial
dispensing appliances and vending machines**
(IEC 60335-2-75:2002, modified)

Appareils électrodomestiques et
analogues –
Sécurité
Partie 2-75: Règles particulières
pour les distributeurs commerciaux
avec ou sans moyen de paiement
(CEI 60335-2-75:2002, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2-75: Besondere Anforderungen
für Ausgabegeräte und Warenautomaten
für den gewerblichen Gebrauch
(IEC 60335-2-75:2002, modifiziert)

This European Standard was approved by CENELEC on 2004-03-01. 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.

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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 the International Standard IEC 60335-2-75:2002, prepared by the IEC Technical Committee 61, together with the common modifications prepared by CENELEC TC 61, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60335-2-75 on 2004-03-01.

This European Standard replaces EN 60335-2-63:1993 and EN 60335-2-75:2002.

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) 2005-03-01
- date on which the national standards conflicting with the EN have to be withdrawn (dow) 2007-03-01

This part 2 has to be used in conjunction with EN 60335-1, Household and similar electrical appliances – Safety – Part 1: General requirements. It was established on the basis of the 2002 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 electric 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.

NOTE 1 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.;
- subclauses, notes and annexes that are additional to those in the IEC standard are prefixed with the letter Z.

NOTE 2 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.

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

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

- p NOTE In this document, p is used in the margin to indicate instructions for preparing the printed version.
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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, 98/37/EC, 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 60335-2-75:2002 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

1 Scope

p Add to the first paragraph:

It also applies to commercial electric espresso-coffee machines that can also be heated by gas (see Annex ZAA).

p Add after Note 102:

This standard also deals with the hygiene aspects of appliances.

3 Definitions

p Add:

3.Z101

cleanable surface

surface such that soils can be removed in accordance with the **instructions for maintenance**

3.Z102

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.

7 Marking and instructions

p Add:

7.12.101.Z1 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 This instruction is not required for appliances

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

7.12.Z101 The instructions shall state that access to the **service area** should only be permitted to persons having knowledge and practical experience of the appliance, in particular as far as safety and hygiene are concerned.

7.12.Z102 The **instructions for maintenance** shall include a statement about the acoustical noise emitted by the appliance, depending on the level as specified below. When relevant, the statement shall use the dual-number form of declaration defined in EN ISO 4871, including the value of uncertainty.

NOTE Guidelines on the reduction of acoustical noise are given in EN ISO 11688-1.

7.12.Z102.1 If the A-weighted sound pressure level determined in accordance with Annex ZBB is below 70 dB, no value need be given, but the instructions shall state that the A-weighted sound pressure level is below 70 dB.

7.12.Z102.2 If the A-weighted sound pressure level determined in accordance with Annex ZBB is above 70 dB, the instructions shall state the value in the following form:

A-weighted sound pressure level xx dB, uncertainty y dB

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

22 Construction

p Add:

22.Z101 Appliances for dispensing **potentially hazardous food** shall incorporate a device which automatically prevents dispensing the food if a storage or process temperature reaches a value having an adverse influence on the food.

NOTE An adverse influence is an effect which gives a significant reduction of fitness for consumption of food. A food can be adversely influenced in particular by microbial pathogens or other unwanted micro-organisms, toxins, vermin, domestic animals and other contaminants.

Compliance is checked by inspection.

22.Z102 Surfaces of food areas shall be **cleanable surfaces** and if necessary they shall be capable of being disinfected.

NOTE The food area comprises surfaces in contact with the food and surfaces that the food may contact during preparation of the product.

*Compliance is checked by inspection after having operated, cleaned and disinfected the appliance in accordance with the **instructions for maintenance**.*

22.Z103 Surfaces of splash areas shall be **cleanable surfaces**.

NOTE The splash area comprises surfaces on which part of the food may splash or flow during normal use without it becoming part of the product.

*Compliance is checked by inspection after having operated and cleaned the appliance in accordance with the **instructions for maintenance**.*

22.Z104 Non-food areas that are not adequately separated from food areas shall be constructed so that the retention of moisture, the ingress and harbourage of vermin and soils is prevented. When this is unavoidable, the surfaces of non-food areas shall be **cleanable surfaces**.

NOTE 1 Non-food areas are areas other than food areas and splash areas.

NOTE 2 This requirement does not apply to appliances

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

Compliance is checked by inspection.

22.Z105 Appliances shall be constructed so that hygiene hazards that are identified by a hygiene risk assessment are prevented.

Compliance is checked by inspection.

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p Add:

Annex ZC (normative)

Normative references to international publications with their corresponding European publications

Addition:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
--	--	Test gases - Test pressures - Appliance categories	EN 437	1993 ²⁾
--	--	General guidance for the marking of gas appliances	CR 1472	1994 ²⁾
--	--	European scheme for the classification of gas appliances according to the method of evacuation of the products of combustion (types)	CR 1749	1995 ²⁾
IEC 60335-2-34	– ¹⁾	Household and similar electrical appliances – Safety – Part 2-34: Particular requirements for motor-compressors	EN 60335-2-34	2002 ²⁾
ISO 228-1	– ¹⁾	Pipe threads where pressure-tight are not made on the threads Part 1: Dimensions, tolerances and designation	EN ISO 228-1	2003 ²⁾
ISO 1817	– ¹⁾	Rubber, vulcanized - Determination of the effect of liquids	-	-
ISO 3743-1	– ¹⁾	Acoustics – Determination of sound power levels of noise sources – Engineering methods for small, movable sources in reverberant fields – Part 1: Comparison method for hard-walled test rooms	EN ISO 3743-1	1995 ²⁾
ISO 3744	– ¹⁾	Acoustics – Determination of sound power levels of noise sources using sound pressure – Engineering method in an essentially free field over a reflecting plane	EN ISO 3744	1995 ²⁾
ISO 4871	– ¹⁾	Acoustics – Declaration and verification of noise emission values of machinery and equipment	EN ISO 4871	1996 ²⁾
ISO 11201	– ¹⁾	Acoustics – Noise emitted by machinery and equipment – Measurement of emission sound pressure levels at a work station and at other specified positions – Engineering method in an essentially free field over a reflecting plane	EN ISO 11201	1995 ²⁾

¹⁾ undated reference

²⁾ valid edition at date of issue

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 11688-1	- ¹⁾	Acoustics – Recommended practice for the design of low-noise machinery and equipment – Part 1: Planning	EN ISO 11688-1	1998 ²⁾

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Annex ZAA (normative)

Commercial electric espresso-coffee machines that can also be heated by gas

NOTE Additional clauses and subclauses in this annex are numbered starting with 201.

1 Scope

This annex applies to the gas-heated part of commercial electric espresso-coffee machines having a nominal heat input not exceeding 3,5 kW, which incorporate an **atmospheric injection burner** and a steam or superheated water generator having a maximum rated pressure of 0,3 MPa (3 bar) and a maximum capacity of 35 litres.

3 Definitions

3.Z201

atmospheric injection burner

burner in which part of the air necessary for the combustion, called primary air, is entrained by the gas flow and is mixed upstream of the burner, the remainder of the air, called secondary air, is entrained downstream of the burner

3.Z202

gas rate adjuster

device allowing the gas rate of a burner to be set at a pre-determined value in accordance with the supply conditions

NOTE 1 The adjustment may be continuous (adjustment screw) or discontinuous (change of calibrated orifices, etc.).

NOTE 2 The operation of changing the setting of this device is termed "adjustment of the gas rate".

3.Z203

modulating governor

device which maintains a sensibly constant downstream pressure when the upstream pressure and the gas rate vary within a range of given values

3.Z204

primary air adjuster

device allowing the primary aeration of a burner to be set at a pre-determined value in accordance with the supply conditions

NOTE The operation of changing the setting of this device is termed "adjustment of the primary air".

5 General conditions for the tests

5.4 Addition:

When testing the gas-heated part of the appliance, the influence of the electric part has to be taken into account.

6 Classification

6.Z201 Appliances are classified in accordance with EN 437 with respect to test gases, test pressures and appliance categories.

6.Z202 Appliances shall be of type A in accordance with CEN Report CR 1749 with respect to the method of evacuation of the products of combustion.

7 Marking and instructions

7.1 Addition :

- type of gas and pressure or pressure couple for which the appliance is adjusted;
- category. When more than one category is specified, each of these categories shall be indicated with respect to the appropriate countries of destination;
- nominal heat input.

NOTE For these markings, the CEN Report CR 1472 may be used.

The appliance shall be marked with the substance of the following warning :

WARNING: This appliance is to be installed in accordance with the national regulations and only in a correctly ventilated location.

7.12 Addition :

The instructions shall state the type of gas and the pressure or pressure couple for which the appliance is adjusted.

7.12.1 Addition:

The installation instructions shall contain the substance of the following warnings:

WARNING : Before installation, take care that the conditions of the local gas distribution (type and pressure of gas) are compatible with the adjustment of the appliance.

WARNING : This appliance must be installed and connected in accordance with the national regulations. Special attention is to be paid to the regulations with regard to ventilation.

The installation instructions shall include information with regard to

- connection of the appliance to the gas supply,
- national regulations regarding installation and ventilation of the country where the appliance is to be installed,
- fixing of the appliance, if applicable,
- minimum distances between the appliance and the adjacent walls, if applicable,
- required values of the pressure in accordance with the Wobbe number of the gas used,
- adjusting devices, in particular the type and the characteristics of the gas pressure regulator, if any.

The installation instructions shall include all the necessary information with regard to the conversion from a gas of one group or family to a gas of another group or another family. They shall also include details for adjusting the appliance to the different distribution pressures.

7.Z201 Gas taps shall be marked with

- a disc for “off”,
- a star for “ignition”,
- a large stylized flame for “burner full on”,
- a small stylized flame for “reduced rate”.

NOTE The marking is not required provided that incorrect manipulation is not possible.

Compliance is checked by inspection.

7.Z202 Injectors shall be marked with appropriate means of identification.

Compliance is checked by inspection.

19 Abnormal operation

19.1 Addition:

Burners of gas espresso-coffee machines are subjected to the test of 19.Z201.

19.Z201 *The appliance is adjusted for one of the reference gases corresponding to the category specified. The test is carried out using the reference gas and the corresponding injector.*

For appliances having several identical burners, the test is only carried out on one burner of each type.

The gas is ignited at the injector provided that this is possible without dismantling a major part of the appliance, and also at the burner head if the combustion can be maintained under these conditions. The test is carried out for 15 min at nominal heat input.

*If the combustion cannot be maintained at the injector, the pressure is reduced until the combustion can be maintained. It is not reduced below the minimum pressure specified. If the combustion still cannot be maintained, the test is carried out with the **gas rate adjuster** set at the reduced rate position.*

The burner shall show no deterioration other than that associated with gas combustion.

22 Construction

22.Z201 The operations necessary for the conversion from a gas of one group or family to a gas of another group or another family, and for adapting to the different distribution pressures of a gas, shall be in accordance with the requirements given in 22.Z201.1 to 22.Z201.3 for the different categories. It shall be possible to carry out these operations without having to disconnect the appliance from the gas supply.

The parts necessary for the conversion shall be available from the manufacturer.

22.Z201.1 Category I

22.Z201.1.1 Categories I_{2H}, I_{2L}, I_{2E}, I_{2E+} :

No adjustment of the appliance.

22.Z201.1.2 Category I_{3B/P} :

No adjustment of the appliance.

22.Z201.1.3 Category I₃₊ :

- replacement of injectors or restrictors but only to convert from one pressure couple to another, for example from 28 mbar/37 mbar to 50 mbar/67 mbar;
- adjustment of the primary air to convert from one pressure couple to another.

22.Z201.1.4 Category I_{3P} :

- for changing the gas: no adjustment of the appliance;
- for changing the pressure: replacement of injectors, adjustment of the gas rate and adjustment of the primary air.

22.Z201.2 Category II

22.Z201.2.1 Categories of appliances designed for use with gases of the first and second families:

- replacement of injectors or restrictors;
- adjustment of the gas rate, for gases of the first family;
- adjustment of the primary air;
- rendering the **modulating governor** inoperative;
- rendering the **gas rate adjuster** inoperative for gases of the second family.

These operations are only acceptable when converting from a gas of the first family to a gas of the second family and vice versa.

22.Z201.2.2 Categories of appliances designed for use with gases of the second and third families:

- replacement of injectors or restrictors;
- adjustment of primary air;
- rendering the **modulating governor** inoperative;
- rendering the **gas rate adjuster** inoperative for gases of the second family.

These operations are only acceptable

- when converting from a gas of one family to a gas of another family,
- when converting from a butane/propane pressure couple to another, for example, 28 mbar/37 mbar to 50 mbar/67 mbar.

When converting from one gas to another within a pressure couple of the third family, only the primary air is allowed to be adjusted.

22.Z201.3 Category III:

- replacement of injectors or restrictors;
- adjustment of the gas rate, for gases of the first family;
- adjustment of the primary air;
- adjustment of the **modulating governor**;
- rendering the **gas rate adjusters** inoperative, for gases of the third family;
- rendering the **modulating governor** inoperative.

These operations are only acceptable

- when converting from a gas of one family to a gas of another family,
- when converting from a butane/propane pressure couple to another couple.

When converting from one gas to another within a pressure couple of the third family, only the primary air is allowed to be adjusted.

22.Z202 The means of connection of the appliance to the gas supply shall be easily accessible. They shall be located so that sufficient space is provided for the tightening **tool**.

Except for appliances of category I₃, the inlet connections shall have a thread which complies with ISO 228-1 or shall have a compression fitting. In the first case, the end of the inlet connection shall be sufficiently flat in order to accommodate a seal.

The pipe incorporating the inlet connection shall be rigidly fixed to the appliance.

Compliance is checked by inspection.

22.Z203 Holes for screws and other fastening means for assembling the appliance shall not end in cavities containing gas.

The tightness of the gas circuit shall be ensured by means of metal to metal joints or joints with seals, for example washes, O-rings or gaskets. Products which seal the thread are only allowed to be used for parts which are not disassembled during **user maintenance**, for example gas taps and injectors. Solder having a melting point lower than 450° C, glues and resins shall not be used to ensure the tightness of the gas circuit.

Compliance is checked by inspection.

22.Z204 Appliances shall be constructed so that under normal working conditions, sufficient air is provided for combustion. The passage for combustion products shall be constructed so that it cannot be obstructed.

The cross-sectional area of the passage for air towards the combustion chamber, and the cross-sectional area of the passage for combustion products, shall not be adjustable.

Compliance is checked by inspection.

22.Z205 It shall be possible to visually check the ignition and operation of the burner.

NOTE It may be necessary to open a shutter to see the burner.

Compliance is checked by inspection

22.Z206 Gas taps shall be mounted so that they are protected against dirt and that their strength, operation, handling and accessibility are not affected by actuation during normal use. They shall be installed in a position for easy access for their replacement and maintenance.

Gas tap levers shall be constructed so that they cannot be incorrectly fitted and shall be protected against accidental movement. When they act by rotation, the opening direction shall be anti-clockwise.

Compliance is checked by inspection.

22.Z207 Cross-sections of flame ports shall not be adjustable.

If a burner is removable, its position shall be well defined. It shall be easy to position it correctly and impossible to position it incorrectly.

Primary air adjusters shall not be incorporated in appliances of categories I_{2H}, I_{2L}, I_{2E}, I_{2E+} and I_{3P}.

NOTE **Primary air adjusters** may be incorporated in other appliances.

It shall only be possible to adjust **primary air adjusters** by means of a **tool**. It shall be possible to lock the adjuster in a position which is appropriate for the gas used.

Air inlets of **primary air adjusters** shall be protected so that accidental blockage is prevented.

Compliance is checked by inspection.

22.Z208 Appliances of categories I_{2H}, I_{2L}, I_{2E}, I_{2E+}, I_{3B/P}, I₃₊, I_{3P}, II_{2H3B/P}, II_{2H3+}, II_{2H3P}, II_{2E3B/P}, II_{2E3+}, II_{2E3P}, II_{2E+3B/P}, II_{2E+3+} and II_{2E+3P} shall not be fitted with **gas rate adjusters** having continuous adjustment. However, it is allowed to set the **gas rate adjuster** at reduced rates for appliances of categories II_{2H3B/P}, II_{2H3+}, II_{2H3P}, II_{2E3B/P}, II_{2E3+}, II_{2E3P}, II_{2E+3B/P}, II_{2E+3+} and II_{2E+3P} when using second family gases. This also applies to appliances of category I_{2E+} which are also of category II_{2E+3+}.

For appliances of categories II_{1a2E} and II_{1a2H}, **gas rate adjusters** may be fitted. However, if these appliances are supplied with a second family gas, any continuous adjustment of the nominal flow rate shall be prevented, adjustment of the reduced flow rate being allowed.

For appliances of category III, it shall be possible to lock the **gas rate adjuster** in the fully open position when the appliance is supplied with third family gases.

Gas rate adjusters shall be constructed to prevent accidental adjustment by the user. It shall be possible to lock them after adjustment.

Compliance is checked by inspection.

24 Components

24.Z201 Flame supervision devices shall be constructed so that, in the event of failure of one of its essential operating components, the gas supply to the burner is shut off automatically.

NOTE A flame supervision device is a device which shuts off the supply of gas to automatically prevent hazardous conditions.

Compliance is checked under the conditions of EN 437. The ignition and extinction delays shall not exceed 20 s and 60 s respectively. However, in the case of direct ignition having a flame supervision device using electrical means, these delays shall not exceed 5 s.

24.Z202 Ignition devices shall ensure safe and fast ignition.

The components of the ignition device shall be constructed to avoid damage or accidental displacement during use.

The components of the ignition device shall be constructed to avoid damage or accidental displacement during use.

The respective positions of the ignition device and the burner shall be well defined.

NOTE An ignition device is a device which ignites one or more burners directly or indirectly.

Compliance is checked by inspection.

Z201 Nominal heat input

The heat input obtained at the normal test pressure shall be equal to the nominal heat input with a tolerance of $\pm 5\%$. However, for appliances using liquefied petroleum gas having a pressure from 3 kPa to 3,7 kPa (30 mbar to 37 mbar), the tolerance is $+5\% - 10\%$.

The measurements are made under the conditions specified in EN 437, after the appliance has been operated for 10 min at its maximum gas rate, any thermostat being rendered inoperative.

The nominal heat input Q_n , expressed in kW, is given by:

$$Q_n = 0,278 M_n \times H_m$$

or

$$Q_n = 0,263 V_n \times H_v$$

where

M_n is the nominal mass rate expressed in kg/h;

V_n is the nominal volume rate expressed in m³/s;

H_m is the calorific value of the reference gas expressed in MJ/kg;

H_v is the calorific value of the reference gas expressed in MJ/m³.

These mass and volume rates correspond to a measurement and flow of reference gas under reference conditions (i.e. assuming a dry gas at 15 °C and under a pressure of 1 013 mbar). In practice, the values obtained during the tests do not correspond to these reference conditions, and therefore have to be corrected to bring them to the values that would actually have been obtained if these reference conditions had been achieved during the tests, at the injector outlet. The corrected mass rate is calculated using the following formula, according to whether it has been determined by weighing or on the basis of a volume rate:

- determination by weighing (for the third family gases):

$$\frac{M_o}{M} = \sqrt{\frac{1013,25 + p}{p_a + p} \times \frac{273,15 + t_g}{288,15} \times \frac{d_r}{d}}$$

- determination on the basis of volume rate:

$$\frac{V_o}{V} = \sqrt{\frac{1013,25 + p}{1013,25} \times \frac{p_a + p}{1013,25} \times \frac{288,15}{273,15 + t_g} \times \frac{d_r}{d}}$$

The corrected mass rate is calculated from the formula:

$$M_o = 1,226 V_o \times d_r$$

where

M_o is the mass rate expressed in kg/h and obtained under reference conditions;

M is the mass rate expressed in kg/h and obtained under test conditions;

V_o is the volume rate expressed in m³/h and obtained under reference conditions at the appliance inlet;

V is the volume rate expressed in m³/h and obtained under test conditions (measured at, or corrected to, pressure p and temperature t_g);

p_a is the atmospheric pressure expressed in mbar;

p is the gas supply pressure expressed in mbar;

t_g is the temperature of the gas, expressed in °C, under the measurement conditions at the appliance inlet;

d is the relative density of the dry test gas in relation to dry air;

d_r is the relative density of the dry reference gas in relation to dry air.

These formulae are used to calculate, from the mass rate (M) or volume rate (V) measured during the test, the corresponding M_o or V_o values which would have been obtained under reference conditions. It is these values M_o and V_o which are compared with the values M_n and V_n calculated from the nominal heat input using the formulae given earlier in this clause:

If a wet counter is used, or if the gas used is saturated with moisture, the value d is replaced by the value of the density of the wet gas

$$d_h = \frac{(p_a + p - p_w) \times (d + 0,622) \times W}{p_a + p}$$

where

p_w is the water pressure, expressed in mbar, at temperature t_g .

NOTE In the case of a second family gas, this correction is negligible.

To check the heat input of the appliance, each of the reference gases of the appliance category is used successively in accordance with EN 437.

The tests are carried out at the pressures indicated by the manufacturer in accordance with the provisions of Table 6 of EN 437.

With the appliance fitted with each of the prescribed injectors, the heat input is measured for each of the reference gases at the appropriate normal test pressures in accordance with the provisions of Table 6 of EN 437.

Z202 Tightness of the gas circuit and escape of unburnt gas

Z202.1 The gas circuit shall be gas-tight

Compliance is checked by the following test:

The test is carried out with air at ambient temperature and at a pressure of 15 kPa (150 mbar) upstream of the appliance. However, if the appliance is intended for use with third family gases at 11,2 kPa/14,8 kPa (112 mbar/148 mbar) pressure couple, the test is carried out at a pressure of 22 kPa (220 mbar). All the controls are opened, as if the appliance were in operation, but all the injectors are sealed. To determine the escape rate, a volumetric method is used allowing direct measurement of the escape to an accuracy of 0,01 l/h. The apparatus shown in Figure ZAA.1, which is given as an example, shall be used in case of litigation. The test is first carried out when the appliance is delivered, and repeated after completion of all the appliance tests, after one disconnection and replacement of any part placed in the gas circuit whose disconnection is specified in the instructions.

At the end of the test, the escape shall not exceed the value of 140 cm³/h, whichever is the number of components mounted in parallel or in series on the appliance.

Z202.2 There shall be no escape of unburnt gas between the injector and the burner head.

Compliance is checked by the following test carried out with reference gas at nominal heat input. When air adjustment takes place by sealing inside the body of the mixer, the test is carried out by placing the adjuster in a position of maximum closure. Any **primary air adjuster** is placed in its position of maximum closure,

- either at the lowest rate which can be obtained during cycling of the thermostat, if the appliance is fitted with such a device, or,
- at the lowest rate capable of maintaining combustion at the burner head if provision is made for the appliance to operate at a reduced rate by adjusting the controls, whether or not there is a marked reduced-rate position.

A gas detector is used to search for any escape between the injector outlet and the burner parts. The concentration of gas in the air is determined with a precision of 0,005 %.

Z203 Combustion

The volume content of carbon monoxide (CO) in the air and water vapour free products of combustion shall not exceed:

- 0,10 % when the appliance is supplied with the reference gas under the normal or the special conditions described below;
- 0,20 % when the appliance is supplied with the incomplete combustion limit gas.

Compliance is checked by the following test.

The appliance is initially adjusted at its nominal heat input with reference gas and normal test pressure. When the appliance is at working conditions, a sample of the combustion products is drawn from the exit zone taking care that the device is positioned to ensure that the sample is representative of the average combustion. Tubes connected at a single point with their other ends placed in different parts of the exit zone or drawing shafts (see Figure ZAA.2) are means of extracting the sample. The drawing of the combustion products is made at a flow rate of 1,5 l/min.

The carbon monoxide (CO) is measured by means of instruments that allow the CO content to be detected, starting from 5×10^{-6} parts in volume. The CO measuring instruments are not to be influenced by the presence of carbon dioxide (CO₂) in the combustion products. CO₂ is to be determined by means of instruments that allow measurements with less than 2 % relative error to be carried out.

Z204 Ignition, cross-lighting and flame stability

The ignition and cross-lighting shall be rapid and smooth. The flames shall be stable. A slight tendency to flame lift at the moment of ignition is allowed but the flames shall be stable 60 s after ignition.

Compliance is checked by the following tests which are carried out at cold and at operating temperatures.

*The burner, fitted with the appropriate nozzle, is supplied with each reference gas corresponding to the category of the appliance, at normal test pressure in order to obtain the nominal heat input. The **primary air adjuster** is then adjusted to obtain an optimum flame with satisfactory appearance.*

Without modifying the regulation of the burner, the pressure at the appliance inlet is reduced to a value equal to 70 % of the normal pressure for gases of the first and second family and to the minimum pressure for gases of the third family (see Table 6 of EN 437).

*Under these conditions, ignition of the burner and cross-lighting of its different parts shall occur correctly. This test is repeated at modulated minimum heat input and then with the **gas tap** set for reduced heat input.*

Z205 Flame breakaway

Flame breakaway is not allowed. However, during the ignition stage, a slight tendency to breakaway is tolerated.

Compliance is checked by the following test which is carried out at cold.

Adjust the burner for the reference gas corresponding to each category to which the appliance belongs, in order to obtain the nominal heat input. Replace each reference gas with the corresponding flame lift limit gas, increasing the supply gas pressure to the maximum value specified in Table 6 of EN 437.

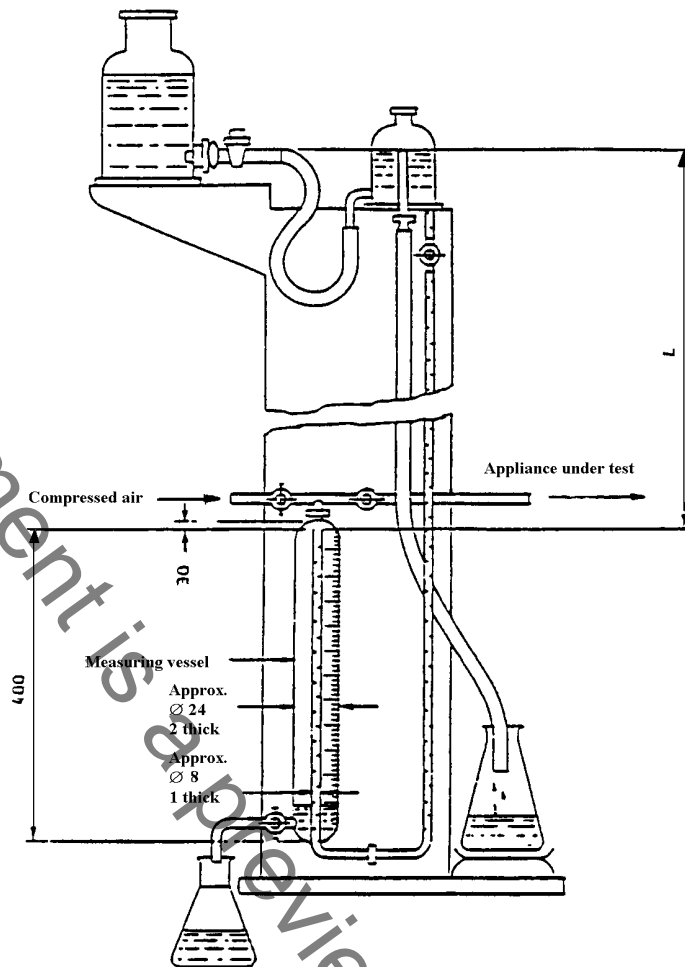
Z206 Flame backfire

Flame backfire towards the nozzle is not allowed.

Compliance is checked by the following test which is carried out under hot conditions.

Adjust the burner for the reference gas corresponding to each category to which the appliance belongs, in order to obtain the nominal heat input. Replace each reference gas with the corresponding flame backfiring limit gas, decreasing the supply gas pressure to the minimum value specified in Table 6 of EN 437.

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The dimensions are given (in millimetres) as a guide.

The values of 'L' are those corresponding to the pressure given in EN 437.

Figure ZAA.1 - Apparatus for testing tightness

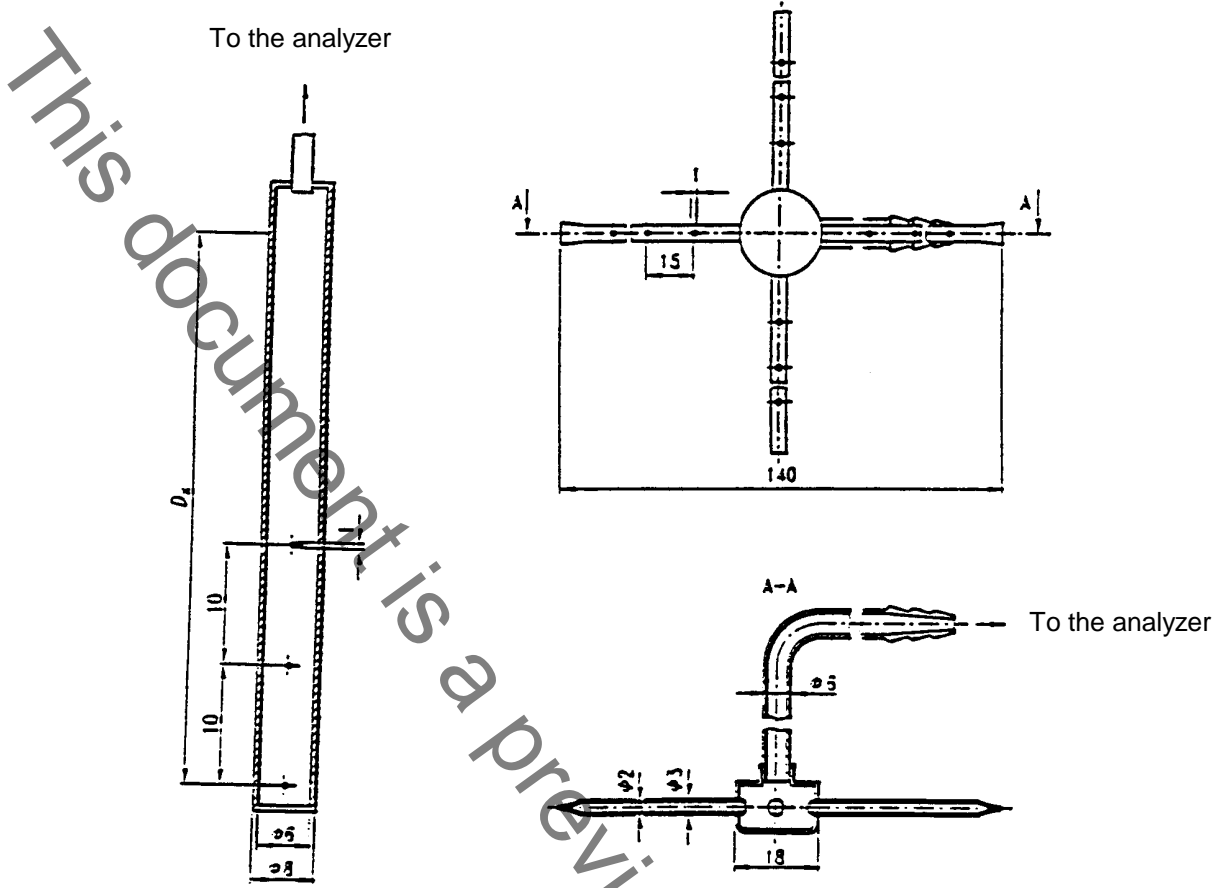


Figure ZAA.2 – Alternative means for extracting the sample

Annex ZBB
(normative)**Measurement of acoustical noise**

The sound pressure level is measured in accordance with EN ISO 11201. The sound power level is measured in accordance with EN ISO 3744, or with EN ISO 3743-1 if a suitable hard-walled test room is available.

The tests are carried out with the appliance placed on the hard floor of the test room as in normal use. The appliance is supplied at rated voltage and operated under the most unfavourable conditions of normal use.

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STANDARD

60335-2-75

Deuxième édition
Second edition
2002-11

**Appareils électrodomestiques et analogues –
Sécurité –**

**Partie 2-75:
Règles particulières pour les distributeurs
commerciaux avec ou sans moyen de paiement**

**Household and similar electrical appliances –
Safety –**

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



Numéro de référence
Reference number
CEI/IEC 60335-2-75:2002

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

**APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES –
SÉCURITÉ –****Partie 2-75: Règles particulières pour les distributeurs commerciaux
avec ou sans moyen de paiement**

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La présente partie de la Norme internationale CEI 60335 a été établie par le comité d'études 61 de la CEI: Sécurité des appareils électrodomestiques et analogues.

Cette seconde édition annule et remplace la première édition parue en 1995 et son amendement 1 (1998), dont elle constitue une révision technique.

Cette version bilingue (2005-07) remplace la version monolingue anglaise.

Le texte anglais de cette norme est issu des documents 61/2224FDIS et 61/2299/RVD. Le rapport de vote 61/2299/RVD donne toute information sur le vote ayant abouti à l'approbation de cette norme.

La version française de cette norme n'a pas été soumise au vote.

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –**
**Part 2-75: Particular requirements for commercial dispensing appliances
and vending machines**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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 technical committee 61: Safety of household and similar electrical appliances.

This second edition cancels and replaces the first edition published in 1995 and its amendment 1 (1998). It constitutes a technical revision.

This bilingual version (2005-07) replaces the English version.

The text of this standard is based on the following documents:

FDIS	Report on voting
61/2224/FDIS	61/2299/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.

La présente partie 2 doit être utilisée conjointement avec la dernière édition de la CEI 60335-1 et ses amendements. Elle a été établie sur la base de la quatrième édition (2001) de cette norme.

NOTE 1 L'expression «Partie 1» utilisée dans la présente norme fait référence à la CEI 60335-1.

La présente partie 2 complète ou modifie les articles correspondants de la CEI 60335-1 de façon à transformer cette publication en norme CEI: Règles de sécurité pour les distributeurs commerciaux électriques avec ou sans moyen de paiement.

Lorsqu'un paragraphe particulier de la Partie 1 n'est pas mentionné dans cette partie 2, ce paragraphe s'applique pour autant qu'il soit raisonnable. Lorsque la présente norme spécifie «addition», «modification» ou «remplacement», le texte correspondant de la Partie 1 doit être adapté en conséquence.

NOTE 2 Le système de numérotation suivant est utilisé:

- paragraphes, tableaux et figures: ceux qui sont numérotés à partir de 101 sont complémentaires à ceux de la Partie 1;
- notes: à l'exception de celles qui sont dans un nouveau paragraphe ou de celles qui concernent des notes de la Partie 1, les notes sont numérotées à partir de 101, y compris celles des articles ou paragraphes qui sont modifiés ou remplacés;
- annexes: les annexes supplémentaires sont appelées AA, BB, etc.

NOTE 3 Les caractères d'imprimerie suivants sont utilisés:

- exigences: caractères romains;
- *modalités d'essais: caractères italiques;*
- notes: petits caractères romains.

Les mots en **gras** dans le texte sont définis à l'Article 3. Lorsqu'une définition concerne un adjectif, l'adjectif et le nom associé figurent également en gras.

Les différences suivantes existent dans les pays indiqués ci-après.

- 6.1: La classe 0I est autorisée pour les appareils pour utilisation à l'intérieur dont la tension assignée ne dépasse pas 150 V (Japon).
- 11.7: Le nombre de cycles de vente est spécifié pour déterminer la durée de l'essai (USA).
- 13.2: Les limites du courant de fuite sont différentes (Japon).
- 16.2: Les limites du courant de fuite sont différentes (Japon).
- 20.1: L'essai est différent (USA).
- Article 21: Les enveloppes métalliques ne sont pas soumises à l'essai (USA).
- 22.7: Un dispositif limiteur de pression doit fonctionner avant que la pression assignée du récipient n'ait été dépassée (USA).
- 22.7: La pression d'essai est de cinq fois la pression assignée (USA).
- 24.103: Les coupe-circuit à réarmement automatique sont autorisés si leur fiabilité a été vérifiée (USA).
- 25.7: Des câbles d'alimentation sous gaine ordinaire de polychlorure de vinyle sont autorisés (Australie et Nouvelle Zélande).
- 25.7: Des câbles plus légers sont autorisés (USA).
- 27.2: L'addition n'est pas applicable (USA).
- Annexe AA: La tenue des parties en élastomère est vérifiée de façon différente (USA).

Le comité a décidé que le contenu de cette publication ne sera pas modifié avant la date de maintenance indiquée sur le site web de la CEI sous «<http://webstore.iec.ch>» dans les données relatives à la publication recherchée. A cette date, la publication sera

- reconduite,
- supprimée,
- remplacée par une édition révisée, ou
- amendée.

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 this publication 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.

INTRODUCTION

Il a été considéré en établissant la présente Norme internationale que l'exécution de ses dispositions était confiée à des personnes expérimentées et ayant une qualification appropriée.

Cette norme reconnaît le niveau de protection internationalement accepté contre les risques électriques, mécaniques, thermiques, liés au feu et au rayonnement des appareils, lorsqu'ils fonctionnent comme en usage normal en tenant compte des instructions du fabricant. Elle couvre également les situations anormales auxquelles on peut s'attendre dans la pratique.

Cette norme tient compte autant que possible des exigences de la CEI 60364, de façon à rester compatible avec les règles d'installation quand l'appareil est raccordé au réseau d'alimentation. Cependant, des règles nationales d'installation peuvent être différentes.

Si un appareil compris dans le domaine d'application de cette norme comporte également des fonctions qui sont couvertes par une autre partie 2 de la CEI 60335, la partie 2 correspondante est appliquée à chaque fonction séparément, dans la limite du raisonnable. Si cela est applicable, on tient compte de l'influence d'une fonction sur les autres fonctions.

Cette norme est une norme de famille de produits traitant de la sécurité d'appareils et a préséance sur les normes horizontales et génériques couvrant le même sujet.

Un appareil conforme au texte de la présente norme ne sera pas nécessairement jugé conforme aux principes de sécurité de la norme si, lorsqu'il est examiné et soumis aux essais, il apparaît qu'il présente d'autres caractéristiques qui compromettent le niveau de sécurité visé par ces exigences.

Un appareil utilisant des matériaux ou présentant des modes de construction différents de ceux décrits dans les exigences de cette norme peut être examiné et essayé en fonction de l'objectif poursuivi par ces exigences et, s'il est jugé pratiquement équivalent, il peut être estimé conforme aux principes de sécurité de la norme.

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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.

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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APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – SÉCURITÉ –

Partie 2-75: Règles particulières pour les distributeurs commerciaux avec ou sans moyen de paiement

1 Domaine d'application

L'article de la Partie 1 est remplacé par l'article ci-après.

La présente Norme internationale traite de la sécurité des **distributeurs** et **distributeurs avec moyen de paiement** commerciaux électriques, avec ou sans moyen de paiement, destinés à la préparation et à la distribution d'aliments, de boissons et de produits de consommation, leur **tension assignée** n'étant pas supérieure à 250 V pour les appareils monophasés et à 480 V pour les autres appareils.

NOTE 101 Comme exemples d'appareils entrant dans le domaine d'application de la présente norme, on peut citer

- les machines à thé ou à café en vrac;
- les **distributeurs avec moyen de paiement** de cigarettes;
- les appareils de chauffage des liquides à usage commercial;
- les machines à café espresso;
- les **distributeurs avec moyen de paiement** de boissons chaudes ou froides;
- les **distributeurs** d'eau chaude;
- les **distributeurs** de crème glacée ou de crème fouettée;
- les **distributeurs** de glace;
- les **distributeurs avec moyen de paiement** de journaux, de bandes ou disques audio ou vidéo;
- les **distributeurs avec moyen de paiement** de boissons et de nourriture sous emballage;
- les présentoirs réfrigérés.

Les appareils peuvent avoir plusieurs fonctions.

NOTE 102 D'autres normes peuvent être applicables pour certaines fonctions telles que

- la réfrigération (CEI 60335-2-24);
- le chauffage par micro-ondes (CEI 60335-2-25);
- la fonction de moulin à café (CEI 60335-2-64).

Dans la mesure du possible, la présente norme traite des risques ordinaires présentés par les appareils, encourus par les utilisateurs et les **agents d'entretien**. Cependant, cette norme ne tient pas compte en général de l'emploi de l'appareil comme jouet par des jeunes enfants.

NOTE 103 L'attention est attirée sur le fait que

- pour les appareils destinés à être utilisés dans des véhicules ou à bord de navires ou d'avions, des exigences supplémentaires peuvent être nécessaires;
- dans de nombreux pays, des exigences supplémentaires sont spécifiées pour les appareils comportant des récipients sous pression.
- dans de nombreux pays, des exigences supplémentaires sont spécifiées par les organismes nationaux de la santé publique, par les organismes nationaux responsables de la protection des travailleurs, par les organismes nationaux responsables de l'alimentation en eau et par des organismes similaires.

NOTE 104 La présente norme ne s'applique pas

- aux appareils prévus exclusivement pour des usages domestiques;
- aux appareils prévus exclusivement pour des usages industriels;

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**;
- 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).

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;

- aux appareils destinés à être utilisés dans des locaux présentant des conditions particulières, telles que la présence d'une atmosphère corrosive ou explosive (poussières, vapeur ou gaz);
- aux marmites électriques à usage collectif (CEI 60335-2-47);
- aux bains-marie électriques à usage collectif (CEI 60335-2-50);
- aux machines de service et machines de divertissement (CEI 60335-2-82);
- aux appareils utilisés uniquement pour distribuer de l'argent;
- aux meubles d'exposition;
- aux appareils comportant des chauffe-eau du type à électrodes.

2 Références normatives

L'article de la Partie 1 est applicable avec les exceptions suivantes.

Addition:

CEI 60335-2-34, *Appareils électrodomestiques et analogues – Sécurité – Partie 2-34: Règles particulières pour les motocompresseurs*

ISO 1817:1999, *Caoutchouc vulcanisé – Détermination de l'action des liquides*

3 Définitions

L'article de la Partie 1 est applicable avec les exceptions suivantes.

3.1.9 Remplacement:

conditions de fonctionnement normal

fonctionnement de l'appareil dans les conditions suivantes

L'appareil est mis en fonctionnement en **mode veille** jusqu'à établissement des conditions de régime puis suivant la procédure de distribution la plus défavorable. L'appareil est réapprovisionné, lorsque cela est nécessaire, conformément aux instructions d'emploi ou aux **instructions d'entretien**, et la période de fonctionnement suivante est commencée aussi vite que possible.

Les couvercles des **appareils de type professionnel** et des **appareils de type surveillé** sont placés dans la position pour laquelle ils sont prévus.

3.6.2 Remplacement:

partie amovible

partie qui peut être retirée sans l'aide d'un **outil**, partie qui est retirée conformément aux instructions d'emploi ou aux **instructions d'entretien**, même si un **outil** ou une **clé d'accès** est nécessaire pour le retrait, ou partie qui ne satisfait pas à l'essai de 22.11.

NOTE 101 Si, pour effectuer l'installation, il faut enlever une partie, et même si cela est indiqué dans les instructions, cette partie n'est pas considérée comme amovible.

NOTE 102 Une partie qui peut être ouverte est considérée comme une partie qui peut être retirée.

3.7.3 Remplacement:

coupe circuit thermique

dispositif qui, en fonctionnement anormal, limite la température de la partie commandée par l'ouverture automatique du circuit ou par réduction du courant, et qui est construit de façon telle que son réglage ne puisse pas être modifié par l'utilisateur ou par l'**agent d'entretien**

- 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**