

Household and similar electrical appliances – Safety –

**Part 2-42: Particular requirements for
commercial electric forced convection
ovens, steam cookers and
steam-convection ovens**

ICS 97.040.20

National foreword

This British Standard is the UK implementation of EN 60335-2-42:2003+A11:2012 incorporating corrigendum September 2007. It is derived from IEC 60335-2-42:2002, incorporating amendment 1:2008. It supersedes BS EN 60335-2-42:2003+A1:2008 which will be withdrawn on 21 December 2014.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by **A1** **A1**.

Where a common modification has been introduced by amendment, the tags carry the number of the amendment. For example, the common modifications introduced by CENELEC amendment A11:2012 are indicated by **C11** **C11**.

The UK participation in its preparation was entrusted by Technical Committee CPL/61, Safety of household and similar electrical appliances, to Subcommittee CPL/61/5, Commercial catering equipment.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Amendments/corrigenda issued since publication

Amd. No.	Date	Comments
17478 Corrigendum No. 1	31 January 2008	Last paragraph of EN foreword replaced. Addition to Annex ZB deleted
	30 June 2009	Implementation of IEC amendment 1:2008 with CENELEC endorsement A1:2008
	31 May 2012	Implementation of CENELEC amendment A11:2012

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English version

**Household and similar electrical appliances -
Safety
Part 2-42: Particular requirements for commercial electric
forced convection ovens, steam cookers
and steam-convection ovens
(IEC 60335-2-42:2002)**

Appareils électrodomestiques
et analogues -
Sécurité
Partie 2-42: Règles particulières pour
les fours électriques à convection forcée,
les cuiseurs à vapeur électriques et
les fours combinés vapeur-convection
électriques à usage collectif
(CEI 60335-2-42:2002)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2-42: Besondere Anforderungen
für elektrische Heißumluftöfen,
Dampfgeräte und Heißluftdämpfer
für den gewerblichen Gebrauch
(IEC 60335-2-42:2002)

This European Standard was approved by CENELEC on 2003-02-01. 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 61E/402/FDIS, future fifth edition of IEC 60335-2-42, prepared by SC 61E of the IEC Technical Committee 61, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60335-2-42 on 2003-02-01.

This European Standard replaces EN 60335-2-42:2000 + corrigendum July 2001.

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) 2003-11-01
- date on which national standards
conflicting with the EN have to be withdrawn (dow) 2006-02-01

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 forced convection ovens, steam cookers and steam-convection ovens.

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.

Introduction

11 The principle objectives of Low Voltage Directive, 2006/95/EC, are covered in this standard. The essential safety requirements of the Machinery Directive 2006/42/EC have also been taken into account for appliances covered by this part. 11

Endorsement notice

The text of the International Standard IEC 60335-2-42:2002 was approved by CENELEC as a European Standard without any modification.

Foreword to amendment A1

The text of document 61E/618/FDIS, future amendment 1 to IEC 60335-2-42:2002, prepared by SC 61E, Safety of electrical commercial catering equipment, of IEC Technical Committee 61, Safety of household and similar electrical appliances, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60335-2-42:2003 on 2008-07-01.

The following dates are applicable:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2009-04-01
- date on which national standards conflicting with the amendment have to be withdrawn (dow) 2011-07-01

This amendment supplements or modifies the corresponding clauses of EN 60335-2-42:2003.

There are no special national conditions causing a deviation from this amendment.

There are no national deviations from this amendment.

Endorsement notice

The text of amendment 1:2008 to the International Standard IEC 60335-2-42:2002 was approved by CENELEC as an amendment to the European Standard without any modification.

In the Bibliography, add the following note to the standard mentioned:

ISO 13732-1

NOTE Harmonized as EN ISO 13732-1:2006 (not modified).

Foreword to amendment A11

This document (EN 60335-2-42:2003/A11:2012) has been prepared by the CLC/TC 61, "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which the amendment has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2012-12-21
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 2014-12-21

This amendment supplements or modifies the corresponding clauses of EN 60335-1:2012, EN 60335-2-42:2003 and EN 60335-2-42:2003/A1:2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

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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 and takes into account the way in which electro-magnetic 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.

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 2-42: Particular requirements for commercial electric forced convection ovens, steam cookers and steam-convection ovens

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electrically operated commercial **forced convection ovens**, **steam cookers**, **steam-convection ovens** and, exclusive of any other use, **steam generators**, not intended for household use, their **rated voltage** being not more than 250 V for single-phase appliances connected between one phase and neutral and 480 V for other appliances.

Ⓒ11 Additional requirements for appliances with power driven moving parts are given in Annex ZE.Ⓒ11

NOTE 101 These appliances are used for example in restaurants, canteens, hospitals and commercial enterprises such as bakeries, butcheries, etc.

The electrical part of appliances making use of other forms of energy is also within the scope of this standard.

As far as is practicable, this standard deals with the common hazards presented by these types of appliances.

NOTE 102 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;
- in many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities and similar authorities;
- in many countries additional requirements are specified for pressure appliances.

Ⓒ11 NOTE 103 This standard does not apply to

- machines designed exclusively for industrial purposes,
- machines intended to be used in locations where a corrosive or an explosive atmosphere is present (dust, vapour or gas),
- continuous process machines for the mass production of food,
- machinery for processing cosmetics, chemicals and pharmaceutical products,
- microwave ovens (IEC 60335-2-90).Ⓒ11

2 Normative references

This clause of Part 1 is applicable.

3 Definitions

This clause of Part 1 is applicable except as follows.

3.1.4 Addition:

NOTE 101 The **rated power input** is the sum of the power inputs of all the individual elements in the appliance that can be on at one time; where there are several such combinations possible, that giving the highest power input is used in determining the **rated power input**.

3.1.9 Replacement:

normal operation

operation of the appliance under the following conditions

- Dry heat mode

The appliance is operated with all the shelves or the shelf trolley in position according to the manufacturer's instructions but with no load. The controls are set so that the mean value of the temperature over the **thermostat** cycle at the geometric centre of each usable space in the interior of the oven is maintained at $220\text{ °C} \pm 4\text{ °C}$. Stepped controls are set so that this temperature is $220\text{ °C} \pm 15\text{ °C}$.

For ovens that are unable to attain a temperature of 220 °C , the controls are set at the maximum.

For ovens that are capable of attaining temperatures in excess of 270 °C , the controls are set so that the mean value of the temperature is $50\text{ °C} \pm 4\text{ °C}$ below the maximum temperature attainable.

- Steaming only mode

The appliance is operated in accordance with the manufacturer's instructions with all controls intended to be operated by the user adjusted to their maximum setting until reaching operating temperature. They are then readjusted, if possible, to the lowest setting that maintains that temperature.

Appliances with **steam generators** intended to be filled by hand or by a manually operated tap are filled to the **indicated level** on the **steam generator**.

Appliances with **steam generators** intended to be filled automatically are connected to a water supply having the pressure designated by the manufacturer. Where the manufacturer specifies a range of pressures, the pressure is adjusted to give the most unfavourable conditions.

The incoming water is maintained at

- $15\text{ °C} \pm 5\text{ °C}$ in the case of appliances intended for connection to a cold water supply;
- $60\text{ °C} \pm 5\text{ °C}$ or the temperature indicated in the instruction sheet, whichever is the higher, in the case of appliances intended for connection to a hot water supply only.

NOTE 101 If the appliance is intended for connection to either a hot or cold water supply, the temperature of the water is that which gives the most unfavourable results.

Lids, doors, and covers are in position and closed.

The **cooking compartment** of the appliance contains a water load, initially at $15\text{ °C} \pm 5\text{ °C}$, comprising $0,5\text{ l/kg}$ of the manufacturer's declared maximum food load. The water load is evenly distributed between the shelves or pans.

NOTE 102 Since pans may be perforated to allow for circulation of steam, the water load may be contained in suitable containers evenly distributed over the shelves or pans.

- Combination mode

The appliance is operated as for the steaming only mode but with the forced convection fan/s and elements for heating the **cooking compartment** on and the temperature controls set as for the dry heat mode.

In all the above cases, motors incorporated in the appliance are operated in the intended manner under the most severe conditions that can be expected in normal use, taking into account the manufacturer's instructions.

3.101

forced convection oven

an appliance intended for the cooking of food by heated air that is circulated by mechanical means within the **cooking compartment**. The pressure within the **cooking compartment** does not differ significantly from atmospheric pressure

3.102**steam cooker**

an appliance intended for the cooking of food only by means of direct steam contact. The pressure within the **cooking compartment** can exceed atmospheric pressure

3.103**atmospheric steam cooker**

an appliance in which the pressure within the **cooking compartment** does not differ significantly from atmospheric pressure

3.104**steam-convection oven**

an appliance intended for the cooking of food either by means of direct steam contact or by heated air circulated by mechanical means within the **cooking compartment** or by a combination of these two modes. The pressure within the **cooking compartment** does not differ significantly from atmospheric pressure

3.105**rated pressure**

the maximum working pressure of **steam cookers** and **steam generators** assigned by the manufacturer to the pressurized parts of the appliance

3.106**steam generator**

that part of the appliance designed specifically for the generation of steam for exclusive use in a **cooking compartment**

NOTE The **steam generator** may be either combined within the **cooking compartment**, remote from the **cooking compartment** but contained within the same casing or function as a separate unit providing steam for one or more **cooking compartments**.

3.107**cooking compartment**

that part of the appliance in which the cooking or food heating process takes place

3.108**indicated level**

a mark on the appliance or **steam generator** to indicate the maximum liquid level for correct operation

3.109**installation wall**

 fixed construction containing supply facilities for wall mounted appliances on one or both sides 

4 General requirement

This clause of Part 1 is applicable except as follows.

5 General conditions for the tests

This clause of Part 1 is applicable except as follows.