

Safety of household and similar electrical appliances —

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

The European Standard EN 60335-2-42:2000 has the status of a British Standard

ICS 97.040.20

National foreword

This British Standard is the official English language version of EN 60335-2-42:2000. It is identical with IEC 60335-2-42:2000. It supersedes BS EN 60335-2-42:1996 which will be withdrawn on 01/10/2002.

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, 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.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 24, an inside back cover and a back cover.

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English version

Safety of household and similar electrical appliances
Part 2-42: Particular requirements for commercial electric
forced convection ovens, steam cookers and steam-convection ovens
(IEC 60335-2-42:2000)

Sécurité des appareils
électrodomestiques et analogues
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 60335-2-42:2000)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2-42: Besondere Anforderungen
für elektrische Heissumluftöfen,
Dämpfgeräte und Heissluftdämpfer
für den gewerblichen Gebrauch
(IEC 60335-2-42:2000)

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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.

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CENELEC

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

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Foreword

The text of document 61E/354/FDIS, future fourth 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 2000-04-01.

This European Standard replaces EN 60335-2-42:1995 and its amendments A1:1996 and A2:1999.

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) 2001-01-01
- date on which national standards
conflicting with the EN have to be withdrawn (dow) 2003-04-01

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 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.

Subclauses, figures and notes which are additional to those in part 1 are numbered starting with 101.

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

National deviations from this European Standard are listed in annex ZB and are in addition to those in 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 of part 1 concerns an adjective, the adjective and the associated noun are also in bold.

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. If the product has 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.

Products covered by this standard may incorporate pressurized components for which the Pressure Equipment Directive, 97/23/EC, is applicable. An examination by CENELEC TC 61 has concluded that the relevant safety requirements of the directive are covered by this standard.

Endorsement notice

The text of the International Standard IEC 60335-2-42:2000 was approved by CENELEC as a European Standard without any modification.

CONTENTS

Clause	Page
1 Scope.....	4
2 Definitions	4
3 General requirement	7
4 General conditions for the tests	7
5 Void	7
6 Classification	7
7 Marking and instructions	8
8 Protection against access to live parts.....	9
9 Starting of motor-operated appliances	9
10 Power input and current	10
11 Heating.....	10
12 Void	11
13 Leakage current and electric strength at operating temperature	11
14 Void	11
15 Moisture resistance.....	11
16 Leakage current and electric strength.....	13
17 Overload protection of transformers and associated circuits.....	13
18 Endurance	13
19 Abnormal operation.....	13
20 Stability and mechanical hazards	15
21 Mechanical strength.....	16
22 Construction	17
23 Internal wiring	19
24 Components	20
25 Supply connection and external flexible cords.....	20
26 Terminals for external conductors	20
27 Provision for earthing	20
28 Screws and connections	21
29 Creepage distance, clearances and distances through insulation	21
30 Resistance to heat, fire and tracking	21
31 Resistance to rusting	21
32 Radiation, toxicity and similar hazards.....	21
Annexes	23
Figure 101 – Splash apparatus.....	22

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –

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:

This 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.

NOTE 1 These appliances are used for example in kitchens such as 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.

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

NOTE 2 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 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.

This standard does not apply to

- appliances where the cooking process is not only carried out by direct steam contact but also with the food partially or completely immersed in a liquid;
- appliances designed exclusively for industrial purposes;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);
- continuous process appliances for the mass production of food;
- microwave ovens;
- appliances with electrode heaters.

2 Definitions

This clause of part 1 is applicable except as follows.

2.2.4 Addition:

NOTE The **rated power input** is the sum of the power inputs of all the individual elements in the appliance which 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**.

2.2.9 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 which are unable to attain a temperature of 220 °C , the controls are set at the maximum.

For ovens which 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 1 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 2 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 which can be expected in normal use taking into account the manufacturer's instructions.

2.2.101

forced convection oven

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

2.2.102

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

2.2.103

atmospheric steam cooker

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

2.2.104

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

2.2.105

rated pressure

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

2.2.106

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 combined within the **cooking compartment**, remote from the **cooking compartment** but contained within the same casing, or as a separate unit providing steam for one or more **cooking compartments**.

2.2.107

cooking compartment

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

2.2.108

indicated level

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

2.2.109 installation wall

a special fixed construction containing supply facilities for appliances installed in conjunction with it

3 General requirement

This clause of part 1 is applicable except as follows.

Addition:

NOTE 101 The d.c. component in the appliance neutral is limited (Australia).

4 General conditions for the tests

This clause of part 1 is applicable except as follows.

4.10 Addition:

*Appliances intended for installation in a bank of other appliances and appliances intended to be fixed to an **installation wall** are enclosed to obtain protection against electric shock and harmful ingress of water equivalent to that obtained when installed in accordance with the instructions provided with the appliance.*

NOTE Appropriate enclosures or additional appliances may be needed for test purposes.

4.101 *Appliances are tested as **heating appliances**, even if they incorporate a motor.*

4.102 *Appliances, when assembled in combination with or incorporating other appliances, are tested in accordance with the requirements of this standard. The other appliances are operated simultaneously in accordance with the requirements of the relevant standards.*

If a part of the appliance or the whole appliance is intended to be used for different functions covered by different standards, the relevant standard is applied to each function separately, so far as is reasonable.

5 Void

6 Classification

This clause of part 1 is applicable except as follows.

6.1 Replacement:

Appliances shall be of **class I** with respect to protection against electric shock.

Compliance is checked by inspection and by the relevant tests.

NOTE **Class 0I appliances** are allowed (Japan).