

Safety of household and similar electrical appliances —

Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances for household use

The European Standard EN 60335-2-6:1999, with the incorporation of amendment A1:2001, has the status of a British Standard

ICS 97.040.20

National foreword

This British Standard is the English language version of EN 60335-2-6:1999, including amendment A1:2001. It was derived by CENELEC from IEC 60335-2-6:1997, including Corrigendum 1998 and amendment 1:2000. It supersedes BS EN 60335-2-6:1991 which will be withdrawn on 2006-04-01.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by a sideline in the margin.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**. 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**.

The UK participation in its preparation was entrusted by Technical Committee CPL/61, Safety of electrical appliances, to Subcommittee CPL/61/07, Safety of electrical appliances — Heated appliance group, which has the responsibility to:

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

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

Cross-references

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

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 December 1999

Summary of pages

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English version

Safety of household and similar electrical appliances — Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances for household use

(includes amendment A1:2001)

(IEC 60335-2-6:1997 + corrigendum 1998 + A1:2000, modified)

Sécurité des appareils
électrodomestiques et analogues —
Partie 2: Règles particulières pour les cuisinières,
les fours et appareils fixes analogues
(inclut l'amendement A1:2001)
(CEI 60335-2 6:1997 + corrigendum 1998
+ A1:2000, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke —
Teil 2: Besondere Anforderungen für
ortsfeste Herde, Kochmulden, Backöfen
und ähnliche Geräte
enthält Änderung A1:2001)
(IEC 60335-2-6:1997 + Berichtigung 1998
+ A1:2000, modifiziert)

This European Standard was approved by CENELEC on 1999-04-01. Amendment A1 was approved by CENELEC on 2001-09-01. 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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 61/1073/FDIS, future fourth edition of IEC 60335-2-6 prepared by the IEC Technical Committee 61, was submitted to the IEC-CENELEC parallel vote in December 1996 but the draft did not receive sufficient support in CENELEC. The comments were discussed during the Edinburgh meeting in May 1997 and during the Fehraltorf meeting in October 1997, when it was decided to submit a new draft for EN 60335-2-6 to the formal vote.

This draft was circulated in August 1998 and was ratified by CENELEC as EN 60335-2-6 on 1999-04-01.

This European Standard replaces EN 60335-2-6:1990 + corrigendum June 1991 and its amendments A2:1992, A51:1993 + corrigendum May 1993, A3:1993, A52:1995, A53:1995 and A54:1997.

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) 2000-01-01
- date on which national standards conflicting with the EN have to be withdrawn (dow) 2006-04-01

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 stationary cooking ranges, hobs, ovens and similar appliances.

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 tables 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.

Foreword to amendment A1

The text of amendment 1:2000 to the International Standard IEC 60335-2-6:1997, prepared by the IEC Technical Committee 61, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A1 to EN 60335-2-6:1999 on 2001-09-01.

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) 2002-08-01
- date on which national standards conflicting with the amendment have to be withdrawn (dow) 2006-04-01

This amendment supplements or modifies the corresponding clauses of EN 60335-2-6:1999.

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

There are no national deviations from this amendment.

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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. 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.

1 Scope

This clause of Part 1 is replaced by:

This standard deals with the safety of **stationary electric cooking ranges, hobs**, ovens and similar appliances 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 Examples of appliances which are within the scope of this standard:

- **stationary grills;**
- **stationary griddles;**
- **pyrolytic self-cleaning ovens;**
- **induction hobs;**
- **steam ovens;**
- the electrical part of appliances supplied with energy other than electricity.

So far as practicable, this standard deals with the common hazards presented by appliances which are encountered by all persons in and around the home.

This standard does not in general take into account

- the use of appliances by young children or infirm persons without supervision.;
- playing with the appliance by young children.

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.

NOTE 3 This standard does not apply to

- appliances intended exclusively for industrial purposes;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);
- portable cooking appliances (IEC 60335-2-9);
- microwave cooking appliances (IEC 60335-2-25);
- commercial electric ranges, ovens and hob elements (IEC 60335-2-36);
- commercial electric griddles and griddle grills (IEC 60335-2-38);
- commercial electric forced convection ovens, steam cookers and steam convection ovens (IEC 60335-2-42).

NOTE 4 Requirements for combination microwave ovens are under consideration; meanwhile IEC 60335-2-25 may be used in conjunction with this standard.

NOTE Z1 For appliances which are supplied with gas, EN 30 is also applicable.

2 Definitions

This clause of Part 1 is applicable except as follows

2.2.6

Addition:

NOTE For appliances having more than three **heating units** per phase, a diversity factor is applied to the **rated power input** when determining the current used to establish the size of the terminals and the nominal cross-sectional area of the **supply cord**. The diversity factor F is calculated from the following formula, where N is the number of **heating units** per phase which can be energized together:

$$F = 0,35 + \frac{0,65}{\sqrt{N}}$$

2.2.9

Replacement:

normal operation

operation of the appliance as specified in 2.2.9.1 to 2.2.9.6.

2.2.9.1 Hob elements other than **induction hob elements**, are operated with vessels containing cold water. The vessel is made of unpolished commercial quality aluminium, has a flat bottom and is covered with a lid. Thermal controls are adjusted to their highest setting until the water boils and then adjusted so that the water boils gently. Water is added to maintain the level during boiling.

NOTE 1 The lid is positioned so that steam does not affect the test.

In case of doubt, vessels as specified in Figure 101 are used.

Induction hob elements are operated with vessels as specified in Figure 102 which contain approximately half their capacity of cooking oil at room temperature. Thermal controls are adjusted to their highest setting until the oil temperature reaches $180\text{ °C} \pm 4\text{ °C}$ and then adjusted so that this temperature is maintained.

For all **hob elements** the diameter of the bottom of the vessel is approximately equal to the diameter of the **cooking zone** and the quantity of liquid is specified in Table 101. The vessel is positioned centrally on the **cooking zone**.

NOTE 2 If several **cooking zones** are marked for one **hob element**, the most unfavourable zone is used for the test.

NOTE 3 For non-circular **cooking zones**, the smallest non-circular vessel is used which will cover the **cooking zone** as far as possible, taking into account the **hob** rim and the other vessels. The quantity of liquid is determined on the basis of the minor diameter of the **cooking zone**.

Table 101 — Quantity of liquid in the vessel

Diameter of cooking zone mm	Quantity of water or oil l
≤ 110	0,6
>110 and ≤ 145	1
>145 and ≤ 180	1,5
>180 and ≤ 220	2
>220 and ≤ 300	3

2.2.9.2 Ovens are operated empty with the door closed. Thermal controls are adjusted so that the mean temperature in the centre of the oven is maintained at

- $220\text{ °C} \pm 4\text{ °C}$ for ovens with forced air circulation;
- $240\text{ °C} \pm 4\text{ °C}$ for other ovens.

NOTE If the temperature cannot be attained, the thermal control is adjusted to its highest setting.

Ovens without thermal controls are switched on and off so that the temperature in the centre of the oven is maintained at $240\text{ °C} \pm 15\text{ °C}$.

Steam ovens are operated in accordance with the instructions for use. Controls are adjusted to their highest setting until the cooking temperature is reached and then adjusted to the lowest setting that maintains this temperature.

Steam generators intended to be filled by hand are filled according to the instructions for use, water being added to maintain the steam generation.

Steam generators intended to be filled automatically are connected to a water supply, the pressure of which is set according to the instructions for installation.

The supply water has a temperature of

- $15\text{ °C} \pm 5\text{ °C}$ for appliances to be connected to a cold water supply;
- $60\text{ °C} \pm 5\text{ °C}$ or the temperature indicated in the instructions, whichever is the higher, for appliances to be connected to a hot water supply.

Steam ovens are also operated while generating steam but with the thermal controls adjusted as for operation without steam.

2.2.9.3 Grills are operated empty with the grill pan and food supports in the most unfavourable position for normal use, the door and any other accessories being positioned in accordance with the instructions for use. In the absence of such instructions, the door and other accessories are placed in the most unfavourable position in which they may be left. Thermal controls are adjusted to their highest setting. However, if the instructions for use for **grills** incorporated in ovens specify a lower setting, this setting is used. Any reflectors intended to be placed above heating elements are in position.

2.2.9.4 Rotating spits in ovens or **grills** are operated with the load on the rotating spit as shown in Figure 103. The appliance is operated taking into account the instructions for use with regard to

- the heating elements to be operated;
- the setting of the thermal control;
- the position of the door and grill pan.

In the absence of such instructions, the control is adjusted to its highest setting and the door is fully open or is placed in the most unfavourable intermediate position in which it may be left. Any grill pan is placed in its lowest position.

2.2.9.5 Warming drawers and similar compartments are operated in the closed position with their controls adjusted to the highest setting.

2.2.9.6 Griddles are operated so that the temperature at the centre of the heated surface is maintained at $275\text{ }^{\circ}\text{C} \pm 15\text{ }^{\circ}\text{C}$ by adjusting their thermal controls or by switching the supply on or off.

2.101

heating unit

any part of the appliance which fulfils an independent cooking or warming function

NOTE Examples are **hob elements**, ovens, **grills** and warming drawers.

2.102

hob surface

horizontal part of the appliance on which vessels can be placed

2.103

cooking zone

area marked on a **hob surface** where the vessel is placed when heating food

NOTE When a **hob element** protrudes above the **hob surface**, its surface is the **cooking zone**.

2.104

hob element

heating unit attached to the **hob surface** or positioned below the **cooking zone**

2.105

induction hob element

hob element which heats metallic vessels by means of eddy currents

NOTE The eddy currents are induced in the bottom of the vessel by the electromagnetic field of a coil.

2.106

hob

appliance which incorporates a **hob surface** and one or more **hob elements**, and which is built in or may be part of a **cooking range**

2.107

induction hob

hob containing at least one **induction hob element**

2.108

griddle

heating unit having a surface on which the food is placed directly for cooking

2.109

grill

heating unit constructed so that the food is supported on a grid or spit and is cooked by radiant heat

NOTE The cooking operation in a **grill** is known as grilling or broiling.