

Household and similar electrical appliances — Safety —

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

ICS 97.040.20

National foreword

This British Standard is the UK implementation of EN 60335-2-6:2003+A11:2010, incorporating corrigenda October 2007 and June 2012. It is derived from IEC 60335-2-6:2002, incorporating amendments 1:2004 and 2:2008 and corrigendum February 2009. It supersedes BS EN 60335-2-6:2003+A2:2008 which will be withdrawn on 1 May 2013.

The start and finish of text introduced or altered by IEC 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**.

The CENELEC common modifications have been implemented at the appropriate places in the text. The start and finish of each common modification is indicated in the text by tags **C** **C**.

Where a common modification has been introduced by CENELEC amendment, the tags carry the number of the amendment. For example, the common modifications introduced by CENELEC amendment A11 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/61/7, Safety of electrical appliances – Heated appliance group.

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
15718	31 May 2006	Implementation of IEC amendment 1:2004 with CENELEC endorsement A1:2005
17500 Corrigendum No.1	31 January 2008	Implementation of CENELEC corrigendum October 2007. In the EN foreword the paragraph following NOTE 2 is replaced. Addition of Annex ZA
	30 November 2008	Implementation of IEC amendment 2:2008 with CENELEC endorsement A2:2008
	30 April 2010	Implementation of IEC corrigendum February 2009 Text modified in 21.102
	30 November 2010	Implementation of CENELEC amendment A11:2010
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**Household and similar electrical appliances -
Safety
Part 2-6: Particular requirements for stationary cooking ranges,
hobs, ovens and similar appliances
(IEC 60335-2-6:2002, modified)**

Appareils électrodomestiques
et analogues -
Sécurité
Partie 2-6: Règles particulières pour les
cuisinières, les tables de cuisson,
les fours et appareils fixes analogues
(CEI 60335-2-6:2002, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2-6: Besondere Anforderungen
für ortsfeste Herde, Kochmulden,
Backöfen und ähnliche Geräte
(IEC 60335-2-6:2002, modifiziert)

This European Standard was approved by CENELEC on 2003-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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

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

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

CENELEC

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

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

Foreword

The text of document 61/2137/FDIS, future fifth edition of IEC 60335-2-6, prepared by the IEC Technical Committee 61, was submitted to the IEC-CENELEC parallel vote.

As a result of the Kista meeting of CENELEC TC 61 in May 2002, a draft amendment prAA containing the relevant existing common modifications was submitted to the formal vote.

The texts of the FDIS and the prAA were approved by CENELEC as a new edition of EN 60335-2-6 on 2003-03-01.

This European Standard replaces EN 60335-2-6:1999 + A1:2001.

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) 2004-03-01
- date on which national standards
conflicting with the EN have to be withdrawn (dow) 2006-03-01

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 stationary electric 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.

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.

Special national conditions causing a deviation from this European Standard are listed in Annex ZA and are in addition to those in EN 60335-1.

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

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 60335-2-6:2002 was approved by CENELEC as a European Standard with agreed common modifications.

Foreword to amendment A1

The text of document 61/2741/FDIS, future amendment 1 to IEC 60335-2-6:2002, prepared by the 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 60335-2-6:2003 on 2004-12-01.

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) 2005-09-01
- date on which national standards conflicting with the amendment have to be withdrawn (dow) 2007-12-01

This amendment supplements or modifies the corresponding clauses of EN 60335-2-6:2003.

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 1:2004 to the International Standard IEC 60335-2-6:2002 was approved by CENELEC as an amendment to the European Standard without any modification.

Foreword to amendment A2

The text of document 61/3410/FDIS, future amendment 2 to IEC 60335-2-6:2002, prepared by 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 A2 to EN 60335-2-6:2003 on 2008-04-16.

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) 2009-02-01
- date on which national standards conflicting with the amendment have to be withdrawn (dow) 2013-05-01

This amendment supplements or modifies the corresponding clauses of EN 60335-2-6:2003.

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 2:2008 to the International Standard IEC 60335-2-6:2002 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:

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

Foreword to amendment A11

A proposal to amend EN 60335-2-6:2003, document CLC/TC 61(SEC)1683, was discussed during the Brussels meeting of CENELEC TC 61 in June 2009, when it was decided to submit a draft for an amendment to the Unique Acceptance Procedure.

The draft was circulated in June 2009 and was approved by CENELEC as amendment A11 to EN 60335-2-6:2003 on 2010-04-14.

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

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) 2011-05-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2013-04-14

This amendment supplements or modifies the corresponding clauses of EN 60335-2-6:2003.

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

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

1 Scope

This clause of Part 1 is replaced by the following.

This International 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 101 Examples of appliances that are within the scope of this standard are

- **griddles;**
- **grills;**
- **induction hobs;**
- **induction wok elements;**
- **pyrolytic self-cleaning ovens;**
- **steam ovens.**

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in household and similar environments.

However, in general, it does not take into account:

- **children** playing with the appliance,
- the use of the appliance by **very young children**
- the use of the appliance by **young children** without supervision,
- **user maintenance** by **children**, including the cleaning of the appliance.

It is recognized that **very vulnerable people** may have needs beyond the level addressed in this standard.

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.

NOTE 103 This standard does not apply to

- appliances intended for commercial catering;
- 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);
- grills, toasters and similar portable cooking appliances (IEC 60335-2-9);
- microwave ovens (IEC 60335-2-25).

NOTE Z101 For appliances that are supplied with gas, EN 30 is also applicable.

2 Normative references

This clause of Part is applicable except as follows.

Addition:

IEC 60584-1, *Thermocouples – Part 1: Reference tables*

ISO 15717:1998, *Kitchen equipment – Safety requirements and test methods for kitchen cabinets and work tops*

3 Definitions

This clause of Part 1 is applicable except as follows.

3.1.6 Addition:

NOTE 101 For appliances having more than three **heating units** per phase, a diversity factor is applied to the **rated current** or **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 that can be energized together:

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

3.1.9 Replacement:

normal operation

operation of the appliance as specified in 3.1.9.101 to 3.1.9.107

3.1.9.101 Hob elements, other than **induction hob elements** A_2 and **induction wok elements** A_2 , 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.

A_2 **Induction hob elements** are operated with vessels as specified in Figure 102 that contain cooking oil at room temperature. Thermal controls are adjusted to their highest setting until the oil temperature reaches $180\text{ }^{\circ}\text{C} \pm 4\text{ }^{\circ}\text{C}$ and then adjusted so that this temperature is maintained. The oil temperature is measured 10 mm above the centre of the bottom of the vessel.

Induction wok elements are operated with a wok having an equivalent sphere diameter that does not differ from the equivalent sphere diameter of the **induction wok element** cavity by more than $\pm 1\%$.

The wok is made of low carbon steel having a maximum carbon content of 0,08 %. The wok is filled to approximately half of its height with cooking oil at room temperature. Thermal controls are adjusted to their highest setting until the oil temperature reaches $180\text{ }^{\circ}\text{C} \pm 4\text{ }^{\circ}\text{C}$ and then adjusted so that this temperature is maintained. The oil temperature is measured 10 mm above the centre of the bottom of the vessel. A_2

For all **hob elements** A_2 other than **induction wok elements** A_2 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	1,0
> 145 and ≤ 180	1,5
> 180 and ≤ 220	2,0
> 220 and ≤ 300	3,0

3.1.9.102 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 °C ± 4 °C for **ovens** with forced air circulation;
- 240 °C ± 4 °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 °C ± 15 °C.

Steam ovens are operated in accordance with the instructions. 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, 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.

The supply water has a temperature of

- 15 °C ± 5 °C for appliances to be connected to a cold water supply;
- 60 °C ± 5 °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.

3.1.9.103 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. 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 **grills** incorporated in **ovens** specify a lower setting, this setting is used. Any reflectors intended to be placed above heating elements are in position.

3.1.9.104 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 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.

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

3.1.9.106 Griddles are operated so that the temperature at the centre of the heated surface is maintained at 275 °C ± 15 °C by adjusting their thermal controls or by switching the supply on or off.

3.1.9.107 Cooking ranges are operated with their individual **heating units** being operated under their stated conditions of **normal operation**.

3.101

oven

appliance having a heated cavity with a door and constructed so that food, which may be in a container, can be placed on a shelf

3.102

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.

3.103**hob**

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

3.104**cooking range**

appliance incorporating a **hob** and an **oven** and which may incorporate a **grill** or **griddle**

3.105**pyrolytic self-cleaning oven**

oven in which cooking deposits are removed by heating the **oven** to a temperature exceeding 350 °C

3.106**steam oven**

oven intended for cooking food by steam generated at atmospheric pressure in the appliance

3.107**griddle**

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

3.108**induction hob**

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

3.109**heating unit**

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

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

3.110**hob surface**

horizontal part of the appliance on which vessels can be placed

3.111**hob element**

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

3.112**induction hob element**

hob element that 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.

3.113**pan detector**

device incorporated in a **hob element** that prevents its operation unless a vessel is placed on the **cooking zone**

3.114**cooking zone**

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

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

3.115

touch control

control actuated by contact or proximity of a finger, with little or no movement of the contact surface

3.116

temperature-sensing probe

device that is inserted into the food to measure its temperature and which is a part of an **oven** control

3.117

rated water pressure

water pressure assigned to the appliance by the manufacturer

A₂ 3.118

induction wok element

induction hob element with the hob surface of an approximate spherical shape to accept a wok **A₂**

C₁₁ 3.Z101

children

young persons comprising **very young children**, **young children** and **older children**

NOTE **Children** are not expected to perform cleaning or **user maintenance** of the appliance.

3.Z102

very young children

young persons aged from 0 up to and including 36 months

NOTE **Very young children** are not expected to use appliances.

3.Z103

young children

young persons older than 36 months and younger than 8 years

NOTE **Young children** are not expected to use appliances safely unless continuous supervision is given.

3.Z104

older children

young persons aged from 8 years up to and including 14 years

NOTE **Older children** can use appliances safely after they have been given appropriate supervision or instruction concerning **use of the appliance**.

3.Z105

vulnerable people

persons having reduced physical, sensory or mental capabilities (e.g. partially disabled, elderly having some reduction in their physical and mental capabilities), or lack of experience and knowledge (e.g. **older children**)

NOTE **Vulnerable people** can use appliances safely after they have been given appropriate supervision or instruction concerning **use of the appliance**.

3.Z106

very vulnerable people

persons having very extensive and complex disabilities

NOTE **Very vulnerable people** are not expected to use appliances safely unless continuous supervision is given or appliances are adapted accordingly with arrangements beyond the scope of this standard. **C₁₁**