

Household and similar electrical appliances — Safety —

Part 2-90: Particular requirements for commercial microwave ovens

The European Standard EN 60335-2-90:2002, with the incorporating of amendment A1:2003, has the status of a British Standard

ICS 97.040.20

National foreword

This British Standard is the official English language version of EN 60335-2-90:2002, including amendment A1:2003 and Corrigendum November 2003. It is identical with IEC 60335-2-90:2002 including amendment 1:2003. It supersedes BS EN 60335-2-90:1998 which will be withdrawn on 2005-10-01.

CENELEC Corrigendum November 2003 changes the date of withdrawal on the foreword to Amendment A1.

The UK participation in its preparation was entrusted by Technical Committee CPL/61, Safety of household electrical appliances, to Subcommittee CPL/61/2, Safety of microwave ovens, 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

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

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 does not of itself confer immunity from legal obligations.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 13 January 2003

Summary of pages

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English version

**Household and similar electrical appliances -
Safety
Part 2-90: Particular requirements for commercial microwave ovens
(including amendment A1:2003)
(IEC 60335-2-90:2002 + A1:2003)**

Appareils électrodomestiques et
analogues - Sécurité
Partie 2-90: Règles particulières pour les
fours micro-ondes à usage commercial
(inclut l'amendement A1:2003)
(CEI 60335-2-90:2002 + A1:2003)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2-90: Besondere Anforderungen
für gewerbliche Mikrowellenkochgeräte
(enthält Änderung A1:2003)
(IEC 60335-2-90:2002 + A1:2003)

This European Standard was approved by CENELEC on 2002-09-24. Amendment A1 was approved by CENELEC on 2003-09-01. 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, Hungary, Iceland, Ireland, Italy, Lithuania, 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

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Ref. No. EN 60335-2-90:2002 + A1:2003 E



Documents

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Foreword

The text of document 61B/220/FDIS, future second edition of IEC 60335-2-90, prepared by SC 61B of the IEC Technical Committee 61, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60335-2-90 on 2002-09-24.

This European Standard replaces EN 60335-2-90:1997.

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) 2003-07-01
- date on which national standards
conflicting with the EN have to be withdrawn (dow) 2005-10-01

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 microwave 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.

p NOTE In this document, p is used in the margin to indicate instructions for preparing the printed version.

Foreword to amendment A1

The text of document 61B/257/FDIS, future amendment 1 to IEC 60335-2-90:2002, prepared by SC 61B of 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 60335-2-90:2002 on 2003-09-01.

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) 2004-06-01
- date on which national standards conflicting with the amendment have to be withdrawn (dow) 2006-09-01

This amendment supplements or modifies the corresponding clauses of EN 60335-2-90:2002.

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 1:2003 to the International Standard IEC 60335-2-90:2002 was approved by CENELEC as an amendment to the European Standard without any modification.

Introduction

p Add:

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 60335-2-90:2002 was approved by CENELEC as a European Standard without any modification.

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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 which 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 2-90: Particular requirements for commercial microwave ovens

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of **microwave ovens** intended for commercial 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.

Appliances covered by this standard incorporate a door for user access to the **cavity**.

NOTE 101 The appliance may be built into a vending machine, in which case IEC 60335-2-75 may also be applicable.

NOTE 102 IEC 60335-2-36 or IEC 60335-2-42 may also be applicable to ovens incorporating conventional heating means.

NOTE 103 Appliances that use non-electrical energy are within the scope of this standard.

In general, this standard does not take into account

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

NOTE 104 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 and similar authorities.

NOTE 105 This standard does not apply to

- household **microwave ovens** including **combination microwave ovens** (IEC 60335-2-25)
- conveyor-type microwave ovens;
- industrial microwave heating equipment (IEC 60519-6)
- appliances for medical purposes (IEC 60601)
- 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).

2 Normative references

This clause of Part 1 is applicable except as follows.

3 Definitions

This clause of Part 1 is applicable except as follows.

3.1.7 *Addition:*

NOTE 101 The **rated frequency** is the input frequency.

3.1.9 *Replacement:*

normal operation

operation of the appliance under the following conditions

The appliance is operated with $1\,000\text{ g} \pm 50\text{ g}$ of potable water at an initial temperature of $20\text{ °C} \pm 2\text{ °C}$ in a cylindrical borosilicate glass vessel having a maximum thickness of 3 mm and an outside diameter of approximately 190 mm. The vessel is placed on the centre of the **shelf**. If the **rated microwave power output** exceeds 2 200 W, two such vessels are used and placed contiguously in the **cavity**.

3.101

microwave oven

appliance using electromagnetic energy in one or several of the ISM frequency bands¹ between 300 MHz and 30 GHz, for heating food and beverages in a **cavity**

3.102

rated microwave power output

microwave power output assigned to the appliance by the manufacturer

3.103

cavity

space enclosed by the inner walls and the door in which the load is placed

3.104

shelf

horizontal support in the **cavity** on which the load is placed

3.105

door interlock

device or system that prevents the operation of the magnetron unless the oven door is closed

3.106

monitored door interlock

door interlock system that incorporates a supervision device

3.107

temperature-sensing probe

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

4 General requirement

This clause of Part 1 is applicable.

¹ ISM frequency bands are the electromagnetic frequencies established by the ITU and reproduced in CISPR 11.