

# Household and similar electrical appliances — Safety —

## Part 1: General requirements

ICS 97.030

## National foreword

This British Standard is the UK implementation of EN 60335-1:2012+A11:2014, incorporating corrigendum January 2014. It is derived from IEC 60335-1:2010, incorporating corrigendum July 2010. It supersedes BS EN 60335-1:2012, which will be withdrawn on 21 November 2014.

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  $\text{C}_{11}$   $\text{C}_{11}$ .

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  $\text{C}$   $\text{C}$ .

The start and finish of text introduced or altered by corrigendum is indicated in the text by tags. Text altered by CENELEC corrigendum January 2014 is indicated in the text by  $\text{AC}_1$   $\text{AC}_1$ .

The IEC corrigendum July 2010 modifies the diagram in Figure 11- Examples of clearances.

National Annex NA (informative) reproduces the original IEC 60335-1:2010 text prior to amendment or deletion by the CENELEC common modifications.

The UK participation in its preparation was entrusted to Technical Committee CPL/61, Safety of household and similar electrical appliances.

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

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

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31 October 2014	Title updated in Foreword to amendment A11 and C11 tags added to the third paragraph in CENELEC foreword

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**Household and similar electrical appliances -  
Safety -  
Part 1: General requirements  
(IEC 60335-1:2010, modified)**

Appareils électrodomestiques et analogues -  
Sécurité -  
Partie 1: Exigences générales  
(CEI 60335-1:2010, modifiée)

Sicherheit elektrischer Geräte für den  
Hausgebrauch und ähnliche Zwecke -  
Teil 1: Allgemeine Anforderungen  
(IEC 60335-1:2010, modifiziert)

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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

This document (EN 60335-1:2012) consists of the text of IEC 60335-1:2010 prepared by IEC/TC 61 "Safety of household and similar electrical appliances", together with the common modifications prepared by CLC/TC 61, "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2012-11-21
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2014-11-21

Ⓒ11 The dow stated in this EN 60335-1:2012 and its relevant amendments is applicable only when the Part 1 is used to test products for which no Part 2 exists. This means that when a Part 2 exists the dow is the one mentioned in the relevant Part 2. Ⓒ11

This document supersedes EN 60335-1:2002 + corr. Jul.2009 + corr. May.2010 + A1:2004 + A2:2006 + A11:2004 + A12:2006 + A13:2008 + A14:2010 + A15:2011 + corr. Jan.2007 + corr. Feb.2007.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60335-1:2010 are prefixed "Z".

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.

This part of EN 60335 is to be used in conjunction with the appropriate Part 2. The Parts 2 contain clauses to supplement or modify the corresponding clauses in Part 1 to provide the relevant requirements for each type of appliance.

NOTE 1 The following annexes contain provisions suitably modified from other IEC standards:

- |           |                               |                             |
|-----------|-------------------------------|-----------------------------|
| – Annex E | Needle flame test             | EN 60695-11-5               |
| – Annex F | Capacitors                    | EN 60384-14                 |
| – Annex G | Safety isolating transformers | EN 61558-1 and EN 61558-2-6 |
| – Annex H | Switches                      | EN 61058-1                  |
| – Annex J | Coated printed circuit boards | EN 60664-3                  |
| – Annex N | Proof tracking test           | EN 60112                    |

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 associated noun are also in bold.

Special national conditions causing a deviation from this European Standard are listed in Annex ZA.

National deviations from this European Standard are listed in Annex ZB.

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.

### **Endorsement notice**

The text of the International Standard IEC 60335-1:2010 was approved by CENELEC as a European Standard with common modifications.

## **Foreword to amendment A11**

This document (EN 60335-1:2012/A11:2014) has been prepared by CLC/TC 61 "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-06-16
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2014-11-21

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).

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.

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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 electromagnetic 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 the functions of an appliance are covered by different parts 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.

NOTE 1 Throughout this publication, when "Part 2" is mentioned, it refers to the relevant part of IEC 60335.

- ☐ For appliances not covered by a particular Part 2 of EN 60335 additional consideration may need to be given to particular categories of likely users, including vulnerable people and children and to related specific risks (e.g. access to live parts, or to hot surfaces or to moving parts) that may be covered by a particular Part 2 considered to be closest to the product under examination.☐

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 2 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 3 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.

Individual countries may wish to consider the application of the standard, as far as is reasonable, to appliances not mentioned in a part 2, and to appliances designed on new principles.

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.

NOTE 4 Standards dealing with non-safety aspects of household appliances are

- IEC standards published by TC 59 concerning methods of measuring performance;
- CISPR 11, CISPR 14-1, IEC 61000-3-2 and IEC 61000-3-3 concerning electromagnetic emissions;
- CISPR 14-2 concerning electromagnetic immunity;
- IEC standards published by TC 111 concerning environmental matters.

- ☐ The principal objectives of the Low Voltage Directive, 2006/95/EC, are covered by this standard. The essential safety requirements of the following directives, which can be applicable to some household and similar appliances, have also been taken into account:

- 2006/42/EC – Machinery directive;
- 89/106/EEC – Construction products directive;
- 97/23/EC – Pressure equipment directive.

The Essential Health and Safety Requirements (EHSR) of the Directive 2006/42/EC are covered by Annex ZE. The application of EN 60335-1 alone does not give presumption of conformity for a product. This is achieved by complying with the requirements of EN 60335-1 and the relevant Part 2, when this Part 2 is also listed in the OJ under the Directive.☐

# HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

## Part 1: General requirements

### 1 Scope

Ⓒ This European Standard deals with the safety of electrical appliances for household environment and commercial purposes, their **rated voltage** being not more than 250 V for single-phase and 480 V for others.

NOTE 1 Battery-operated appliances and other d.c. supplied appliances are within the scope of this standard.

NOTE Z1 Examples of appliance for household environment are appliances for typical housekeeping functions used in the household environment that may also be used by non expert users for typical housekeeping functions:

- in shops, offices and other similar working environments;
- in farm houses;
- by clients in hotels, motels and other residential type environments;
- in bed and breakfast type environments.

NOTE Z2 Household environment includes the dwelling and its associated buildings, the garden, etc.

Appliances and machines intended to be used by expert or trained users in shops, in light industry and on farms, and appliances and machines which are declared to be for commercial use by lay persons are within the scope of this standard.

Additional requirements for such appliances are given in Annex ZE.

NOTE 2  $\overline{AC_1}$  Void  $\overline{AC_1}$ .

NOTE Z3 Examples of such appliances and machines are catering equipment, cleaning machines for commercial use, and appliances for hairdressers.

NOTE Z4 Criteria applied for the allocation of products covered by standards in the EN 60335 series under either the Low Voltage Directive (LVD) or the Machinery Directive (MD) are given for information in Annex ZF.

This standard deals with the reasonably foreseeable hazards presented by appliances and machines that are encountered by all persons.

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.

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

NOTE 3 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 4 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);
- audio, video and similar electronic apparatus (IEC 60065);
- appliances for medical purposes (IEC 60601);
- hand-held motor-operated electric tools (IEC 60745);
- personal computers and similar equipment (IEC 60950-1);
- transportable motor-operated electric tools (IEC 61029). Ⓒ