

Safety of household and similar electrical appliances —

Part 2-27: Particular requirements for skin exposure to ultraviolet and infrared radiation

The European Standard EN 60335-2-27:1997, with the incorporation of amendments A11:1997 and A1:2000, has the status of a British Standard

ICS 97.170

National foreword

This British Standard is the English language version of EN 60335-2-27:1997 including amendments A11:1997, A1:2000 and corrigendum October 2003. It is derived from IEC 60335-2-27:1995 including amendment 1:2000. It supersedes BS EN 60335-2-27:1992 which will be withdrawn on 1999-12-01.

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. Where a common modification has been introduced by amendment, the tags carry the number of the amendment. For example, the common modifications introduced by CENELEC amendment A11 are indicated by A11 A11.

The start and finish of text introduced or altered by 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 UK participation in its preparation was entrusted by Technical Committee CPL/61, Safety of electrical appliances, to Subcommittee CPL/61/01/15, Appliances for the care of skin and hair, 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.

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 15 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 July 1997

© BSI 2 February 2004

ISBN 0 580 27596 5

Amendments issued since publication

Amd. No.	Date	Comments
9888	March 1998	
12042	March 2001	See national foreword
14846 Corrigendum No. 1	2 February 2004	Replacement of last paragraph in the foreword to amendment A11 and addition of Annex ZB

Descriptors: household electrical appliances, skin treatment appliances, infrared radiation, ultraviolet radiation, safety requirements, protection against electric shock, fire protection, protection against mechanical hazard

English version

Safety of household and similar electrical appliances — Part 2-27: Particular requirements for appliances for skin exposure to ultraviolet and infrared radiation

(includes amendments A11:1997 and A1:2000)
(IEC 60335-2-27:1995 + A1:2000, modified)

Sécurité des appareils électrodomestiques
et analogues —
Partie 2-27: Règles particulières pour les
appareils d'exposition de la peau aux
rayonnements ultraviolets et infrarouges
(inclut les amendements A11:1997 et A1:2000)
(CEI 60335-2-27:1995 + A1:2000, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke —
Teil 2-27: Besondere Anforderungen für
Hautbehandlungsgeräte mit Ultraviolett- und
Infrarotstrahlung
(enthält Änderungen A11:1997 und A1:2000)
(IEC 60335-2-27:1995 + A1:2000, modifiziert)

This European Standard was approved by CENELEC on 1997-03-11. Amendment A11 was approved by CENELEC on 1997-10-01 and amendment A1 was approved by CENELEC on 2000-04-01. 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, 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

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

Foreword

The proposal to endorse IEC 60335-2-27:1995, document CLC/TC 61 (SEC) 1024, was circulated under the enquiry procedure in June 1995. This proposal was discussed during the Copenhagen meeting in May 1996, when it was decided to submit a draft for EN 60335-2-27 to the formal vote.

This draft was circulated in September 1996 and was ratified by CENELEC as EN 60335-2-27 on 1997-03-11.

This European Standard has been prepared by the secretariat of CENELEC Technical Committee TC 61.

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) 1997-12-01
- date on which national standards conflicting with the EN have to be withdrawn (dow) 1999-12-01

For products which have complied with EN 60335-2-27:1992 including its amendments A2:1992 and A51:1994 before 1999-12-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2004-12-01.

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 electric appliances for skin exposure to ultraviolet and infrared radiation.

Where a particular subclause of part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. Where this standard states “addition”, “modification” or “replacement”, the relevant text of part 1 is to be adapted accordingly.

Subclauses, tables and figures which are additional to those in part 1 are numbered starting with 101. Annexes which are additional to those in part 1 are lettered AA, BB, etc.

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.

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.

Endorsement notice

The text of the International Standard IEC 60335-2-27:1995 was approved by CENELEC as an European Standard without any modification.

Foreword to amendment A11

During the discussion on the proposal to endorse IEC 60335-2-27:1995 at the Copenhagen meeting in May 1996, it was decided to submit a draft for an amendment to prEN 60335-2-27 to the Unique Acceptance Procedure (UAP).

This draft was circulated as prAA in November 1996 and was approved by CENELEC as amendment A11 on 1997-10-01.

This amendment has been prepared by the secretariat of CENELEC Technical Committee TC 61.

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) 1998-05-01
- date on which national standards conflicting with the amendment have to be withdrawn (dow) 2000-05-01

For products which have complied with EN 60335-2-27:1997 before 2000-05-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2005-05-01.

This amendment supplements or modifies the corresponding clauses of EN 60335-2-27:1997.

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

National deviations from this European Standard are listed in Annex ZB and are in addition to those in EN 60335-1.

NOTE Amendment numbers connecting A1 refer to the endorsement of IEC amendments, while those commencing A11 originate in CENELEC.

Foreword to amendment A1

The text of document 61/1760/FDIS, future amendment to IEC 60335-2-27:1995 prepared by the IEC Technical Committee 61, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60335-2-27 on 2000-04-01.

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) 2001-01-01
- date on which national standards conflicting with the amendment have to be withdrawn (dow) 2005-05-01

This amendment supplements or modifies the corresponding clauses of EN 60335-2-27:1997.

As a consequence of endorsing amendment 1:2000 to IEC 60335-2-27, amendment A11:1997 to EN 60335-2-27 is withdrawn.

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

There are no national deviations from this amendment.

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.

Contents

	Page
Foreword	2
1 Scope	4
2 Definitions	4
3 General requirement	5
4 General conditions for the tests	5
5 Void	5
6 Classification	5
7 Marking and instructions	5
8 Protection against access to live parts	7
9 Starting of motor-operated appliances	7
10 Power input and current	7
11 Heating	8
12 Void	8
13 Leakage current and electric strength at operating temperature	8
14 Void	8
15 Moisture resistance	8
16 Leakage current and electric strength	8
17 Overload protection of transformers and associated circuits	8
18 Endurance	8
19 Abnormal operation	8
20 Stability and mechanical hazards	9
21 Mechanical strength	9
22 Construction	10
23 Internal wiring	11
24 Components	11
25 Supply connection and external flexible cords	11
26 Terminals for external conductors	11
27 Provision for earthing	11
28 Screws and connections	12
29 Creepage distances, clearances and distances through insulation	12
30 Resistance to heat, fire and tracking	12
31 Resistance to rusting	12
32 Radiation, toxicity and similar hazards	12
Annex A (normative) Normative references	15
Annex AA (normative) Measurement of luminance	15
Annex ZB (informative) A-deviations	15
Figure 101 — UV action spectrum	14
Table 101 — Limits of effective irradiance	12
Table 102 — Maximum transmission of the goggles	13

1 Scope

This clause of part 1 is replaced by:

This standard deals with the safety of electric appliances incorporating emitters for exposing the skin to ultraviolet and infrared radiation, for household and similar use, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

NOTE 1 Appliances may also incorporate motors and heating elements.

Appliances not intended for normal household use but which nevertheless may be a source of danger to the public, such as appliances intended to be used in tanning salons, beauty parlours and similar premises, are also within the scope of this standard.

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 and similar authorities;
- IEC 60598-1 is applicable as far as is reasonable.

NOTE 3 This standard does not apply to

- appliances for medical 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).

2 Definitions

This clause of part 1 is applicable except as follows:

2.101

ultraviolet emitter (UV emitter)

radiating source designed to emit non-ionizing electromagnetic energy at wavelengths of 400 nm or less $\overline{A_1}$ $\overline{A_1}$

2.102

UV type 1 appliance

appliance provided with a **UV emitter** such that the biological effect is caused by radiation having wavelengths longer than 320 nm and characterized by a relatively high irradiance in the range 320 nm to 400 nm

2.103

UV type 2 appliance

appliance provided with a **UV emitter** such that the biological effect is caused by radiation having wavelengths both shorter and longer than 320 nm and characterized by a relatively high irradiance in the range of 320 nm to 400 nm

2.104

UV type 3 appliance

appliance provided with a **UV emitter** such that the biological effect is caused by radiation having wavelengths both shorter and longer than 320 nm and characterized by a limited irradiance over the whole UV radiation band

2.105

UV type 4 appliance

appliance provided with a **UV emitter** such that the biological effect is mainly caused by radiation having wavelengths shorter than 320 nm