

Luminaires —

Part 2: Particular requirements —

Section 2.20 Lighting chains

The European Standard EN 60598-2-20:1997 with the incorporation of amendment A1:1998 and amendment A2:2004, has the status of a British Standard

ICS 29.140.40

National foreword

This British Standard is the English language version of EN 60598-2-20:1997, including amendments A1:1998 and A2:2004, Corrigendum December 1998 and Corrigendum September 2004. It was derived by CENELEC from IEC 60598-2-20:1996 including amendments A1:1998 and A2:2004. It supersedes BS EN 60598-2-20:1992 which will be withdrawn on 1998-04-01.

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 A2 is indicated by [A2] [A2].

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 [C] [C]. 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 [C11] [C11].

The UK participation in its preparation was entrusted to Technical Committee CPL/34/4, Luminaires, 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.

From 1 January 1997, all IEC publications have the number 60000 added to the old number. For instance, IEC 27-1 has been renumbered as IEC 60027-1. For a period of time during the change over from one numbering system to the other, publications may contain identifiers from both systems.

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 16, an inside back cover and a back cover.

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

Amendments issued since publication

Amd. No.	Date	Comments
10117	November 1998	Indicated by a sideline
10561 Corrigendum	December 1999	Change to date of withdrawal (dow) of national standards conflicting with EN amendment A1
15237	4 August 2004	See National Foreword
15417 Corrigendum No. 2	27 October 2004	Change to date of withdrawal (dow) of national standards conflicting with EN amendment A2
15492 Corrigendum No. 3	12 January 2005	Text omitted from previous IEC amd 2
16055 Corrigendum No. 4	23 January 2006	Correction to Figure 2

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 March 1998

© BSI 23 January 2006

ISBN 0 580 29013 1

ICS 29.140.40

Supersedes EN 60598-2-20:1991 and its amendment
Incorporates corrigendum December 1998 and corrigendum September 2004

Descriptors: Illumination, construction of the electric circuit, testing, definitions, electrical safety requirements

English version

Luminaires —
Part 2: Particular requirements —
Section 20: Lighting chains

(includes amendment A1:1998 and A2:2004)
(IEC 60598-2-20:1996 + A1:1998 + A2:2004, modified)

Luminaires —

Partie 2: Règles particulières —

Section 20: Guirlandes lumineuses

(inclut les amendements A1:1998 et A2:2004)

(CEI 60598-2-20:1996 + A1:1998 + A2:2004,
modifiée)

Leuchten —

Teil 2: Besondere Anforderungen —

Hauptabschnitt 20: Lichtketten

(enthält Änderungen A1:1998 und A2:2004)

(IEC 60598-2-20:1996 + A1:1998 + A2:2004,
modifiziert)

This European Standard was approved by CENELEC on 1996-07-02, amendment 2 was approved by CENELEC on 2004-02-01. 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 34D/381/FDIS, future amendment to IEC 60598-2-20:1982, prepared by SC 34D, Luminaires, of IEC TC 34, Lamps and related equipment, was submitted to the IEC-CENELEC parallel vote. Because this amendment was to be incorporated in a new edition of the IEC standard, CENELEC approved EN 60598-2-20 on 1996-07-02 incorporating those common modifications from the previous edition of EN 60598-2-20 which were not covered by the text of 34D/328/FDIS, as well as the texts of amendments A11:1992 and prA12. The common modifications to IEC 60598-2-20:1996 were prepared by the Technical Committee CENELEC TC 34Z, Luminaires and associated equipment.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1998-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1998-04-01

For products which have complied with EN 60598-2-20:1991 and its amendment A11:1992 before 1998-04-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2003-04-01.

Annexes designated “normative” are part of the body of the standard. Annexes designated “informative” are given for information only. In this standard, Annex ZA and Annex ZB are normative and Annex A is informative. Annex ZA and Annex ZB have been added by CENELEC.

Foreword to amendment A1

The text of document 34D/477/FDIS, future Amendment 1 to IEC 60598-2-20:1996, prepared by SC 34D, Luminaires, of IEC TC 34, Lamps and related equipment, was submitted to the IEC-CENELEC parallel vote.

A draft amendment (prA11), prepared by the Technical Committee CENELEC TC 34Z, Luminaires and associated equipment, was submitted to the Unique Acceptance Procedure.

The two documents were combined and approved by CENELEC as amendment A1 to EN 60598-2-20:1997 on 1998-04-01.

In this European Standard the common modifications to the International Standard are indicated by the symbols **[C]** and **[C]**.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1999-01-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2005-04-01

Foreword to amendment A2

The text of amendment 2:2002 to the International Standard IEC 60598-2-20:1996, prepared by SC 34D, Luminaires, of IEC TC 34, Lamps and related equipment, together with the common modifications prepared by the Technical Committee CENELEC TC 34Z, Luminaires and associated equipment, was submitted to the formal vote and was approved by CENELEC as amendment A2 to EN 60598-2-20:1997 on 2004-02-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2005-02-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2006-02-01

Annex ZA and Annex ZB have been added by CENELEC.

Contents

	Page
Foreword	2
20.1 Scope	4
20.1.1 Normative references	4
20.2 General test requirements	4
20.3 Definitions	4
20.4 Classification of luminaires	5
20.5 Marking	5
20.6 Construction	6
20.7 Creepage distances and clearances	8
20.8 Provisions for earthing	8
20.9 Terminals	8
20.10 External and internal wiring	9
20.11 Protection against electric shock	10
20.12 Endurance tests and thermal tests	10
20.13 Resistance to dust and moisture	11
20.14 Insulation resistance and electric strength	11
20.15 Resistance to heat, fire and tracking	11
Annex A (informative) Tumbling barrel test	14
Annex ZA (normative) Normative references to international publications with their corresponding European publications	15
Annex ZB (normative) Requirements for Edison screw lampholders E5 and E10 and similar small lampholders of the push-in type	16
Figure 1 — <i>deleted</i>	11
Figure 2 — Example of test device suitable for checking security of lampholder contacts	12
Figure 3 — Example of test device suitable for winding a flexible pipe	13

20.1 Scope

A2 This section of IEC 60598-2 specifies requirements for lighting chains fitted with series- or parallel- or a combination of series/parallel-connected incandescent lamps for use either indoors or outdoors on supply voltages not exceeding 250 V.

NOTE 1 A Christmas tree chain is an example of a lighting chain fitted with series or series/parallel connected lamps. A chain for illuminating ski-tracks or promenades is an example of a lighting chain fitted with parallel connected lamps. **A2**

A chain for illuminating ski-tracks or promenades is an example of a lighting chain fitted with parallel connected lamps.

NOTE 2 For lighting chains fitted with lampholders of the push-in type, the appropriate requirements of this section apply.

NOTE 3 In some countries the term “strings” is used instead of “chains”.

A2 NOTE 4 For lighting chains with non-standardized lamps (e.g. lamps of the push-in type) the lamps are regarded as part of the lighting chain and consequently included in the testing (and thereby in the test certificate, if any). **A2**

20.1.1 Normative references

The section of IEC 60598-2 specifies requirements for lighting chains fitted with series- or parallel- or a combination of series/parallel-connected incandescent lamps for use either indoors or outdoors on supply voltages not exceeding 250 V.

IEC 83:1975, *Plugs and socket-outlets for domestic and similar general use. Standards.*

IEC 227, *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V.*

IEC 245, *Rubber insulated cables of rated voltages up to and including 450/750 V.*

IEC 320:1981, *Appliance couplers for household and similar general purposes.*

C2 IEC 60238:1998, *Edison screw lampholders.* **C2**

A2 IEC 60598-1:1999, *Luminaires — Part 1: General requirements and tests.*

IEC 61184, *Bayonet lampholders.*

IEC 61347-2-11, *Safety of lamp controlgear — Part 2-11: Particular requirements for miscellaneous electronic circuits used with luminaires.* **A2**

CISPR 14:1993, *Limits and methods of measurement of radio interference characteristics of household electrical appliances, portable tools and similar electrical apparatus.*

20.2 General test requirements

The provisions of Section 0 of IEC 598-1 apply. The tests described in each appropriate section of IEC 598-1 shall be carried out in the order listed in this section of IEC 598-2.

20.3 Definitions

For the purpose of this section, the definitions given in Section 1 of IEC 598-1 apply together with the following definitions.

20.3.1

A2 lighting chain

luminaire comprising an assembly of series-connected lampholders, parallel-connected lampholders or series/parallel-connected lampholders and interconnecting insulated conductors

NOTE 1 For lighting chains with non-standardized lamps (e.g. lamps of the push-in type) the lamps are regarded as part of the chain.

NOTE 2 For lighting chains with non-removable lamps, the lamps are regarded as part of the chain.

NOTE 3 A lighting chain may incorporate control devices (e.g. flasher units, see Clause 20.6.16). **A2**

20.3.2

sealed chain

a lighting chain enclosed in a rigid or flexible insulating translucent pipe or tube, sealed at the ends and having no joints **A2**