

Specification for

Festoon and temporary lighting cables and cords

ICS 29.060.20

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Committees responsible for this British Standard

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- Association of Consulting Engineers
- British Approvals Service for Cables
- British Cable Makers Confederation
- British Plastics Federation
- Department of Trade and Industry — Consumer Safety Unit, CA Division
- Electricity Association
- Association of Manufacturers Allied to the Electrical and Electronic Industry (BEAMA Ltd.)
- British Retail Consortium
- Chartered Institution of Building Services Engineers
- ERA Technology Ltd.
- Electrical Installation Equipment Manufacturers' Association (BEAMA Ltd.)
- Engineering Industries Association
- Institution of Incorporated Executive Engineers
- Lift and Escalator Industries Association
- London Underground Ltd.
- Portable Electric Tool Manufacturers Association
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Foreword

This new edition of BS 6726 has been prepared by Technical Subcommittee GEL/20/1. It supersedes BS 6726:1991, which is withdrawn. This standard is published to meet a demand for insulated cables which are suitable for festoon and temporary lighting in decorative situations or on building sites, etc.

This edition introduces technical changes but it does not reflect a full review of the standard, which will be undertaken in due course.

Where harmonized code designations are given, the requirements are in conformity with those of all countries which accept the basic principles of harmonization in accordance with the requirements of CENELEC. Other designs shown as national types are not harmonized but are regarded as representing a particular requirement in the UK which is not reflected in other countries.

This edition incorporates technical changes to align with CENELEC Harmonization Documents HD 21.5 S3, HD 22.8 S2 and HD 21.11. Thus, BS 6726 now implements HD 21.8, HD 21.11 and HD 22.8, and partially implements HD 21.5.

Colours for core identification as agreed within CENELEC have been included in the appropriate tables.

A guide to the use of cables and cords is given in annex A (informative) and guidance to manufacturers on procedures for routine testing in annex B (informative). Annexes C, D, E and F are normative.

Certification. Attention is drawn to the certification services (see inside back cover) of the British Approvals Service for Cables (BASEC). These services include licensing manufacturers to use BASEC certification trade marks as independent assurance that cables or cords have been designed and manufactured to appropriate British Standards. BASEC is a subscriber to an agreement in CENELEC whereby cables or cords coming within Harmonizing Code Designations, and manufactured under a BASEC licence, can carry marks acceptable to other signatory countries (CENELEC "Common Marking").

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their 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, pages i to iv, pages 1 to 20, an inside back cover and a back cover.

Section one. General

1 Scope

This British Standard specifies requirements and dimensions for insulated cables and cords for operation at rated voltages up to and including 300/500 V. This standard places in one publication the requirements for all the cables and cords for use in the construction of temporary and decorative lighting chains, irrespective of application, together with those for certain other special usage cables for connection to luminaires.

The manner in which the cables are used, and the particular application for each cable and cord, are covered by other British Standards, especially the particular sections of BS EN 60598-2 and BS 4533-102. A guide to use for harmonized types of cables and cords is included in BS 7540.

The types of cables and cords for which requirements are included in this standard are:

- | | | |
|----------------------------|---|------------|
| a) Table 3 | Rubber-insulated and sheathed cable, flat twin | 300/500 V; |
| b) Table 4a),
b) and c) | Rubber-insulated and sheathed cord, single core and flat twin | 300/500 V; |
| c) Table 5 | Rubber-insulated and sheathed cord, circular twin | 300/500 V; |
| d) Table 6 | Rubber-insulated and sheathed cord, single core | 300/300 V; |
| e) Table 9a)
and b) | PVC-insulated and sheathed cable and cord, flat twin | 300/500 V; |
| f) Table 10 | PVC-insulated and sheathed cord, circular twin | 300/500 V; |
| g) Table 11 | PVC-insulated and sheathed cord, flat twin | 300/300 V; |
| h) Table 12 | PVC-insulated non-sheathed cord, single core | 300/300 V; |
| i) Table 13 | Divisible two layer PVC-insulated cable, flat twin | 300/300 V. |

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the publication referred to applies.

BS 4066-1, *Tests on electric cables under fire conditions — Part 1: Method of test on a single vertical insulated wire or cable.*

BS 4727-2-08, *Glossary of electrotechnical, power, telecommunication, electronics, lighting and colour terms — Part 2: Terms particular to power engineering — Group 08: Electric cables.*

BS 6360, *Specification for conductors in insulated cables and cords.*

BS 6469, *Methods of test for insulation and sheaths of electric cables.*

BS 6500:1994, *Specification for insulated flexible cords and cables.*

BS 7655-1.1, *Specification for insulating and sheathing materials for cables — Part 1: Elastomeric insulating compounds — Section 1.1: Harmonized types.*

BS 7655-2.1, *Specification for insulating and sheathing materials for cables — Part 2: Elastomeric sheathing compounds — Section 2.1: Harmonized types.*

BS 7655-3.1, *Specification for insulating and sheathing materials for cables — Part 3: PVC insulating compounds — Section 3.1: Harmonized types.*

BS 7655-4.1:1997, *Specification for insulating and sheathing materials for cables — Part 4: PVC sheathing compounds — Section 4.1: Harmonized types.*

BS 7655-4.2:1997, *Specification for insulating and sheathing materials for cables — Part 4: PVC sheathing compounds — Section 4.2: General application.*

BS EN 60811-1-1, *Insulating and sheathing materials for electric cables. Common test methods — Part 1-1: General application — Measurement of thickness and overall dimensions — Tests for determining the mechanical properties.*

PD 2379, *Register of colours of manufacturers' identification threads for electric cables and cords.*

3 Definitions

For the purpose of this British Standard, the definitions given in BS 4727-2-08 apply together with the following.

3.1

rated voltage U_0

power-frequency voltage to earth for which the cable is designed

3.2

rated voltage U

power-frequency voltage between conductors for which the cable is designed

4 Voltage designation

The rated voltage of a cable is the reference voltage for which the cable is designed, and which serves to define the electrical tests. It shall be expressed, in volts, by the following expression:

$$U_0/U$$

where:

U_0 is the r.m.s. value between any insulated conductor and earth or the surrounding medium;

U is the r.m.s. value between any two phase conductors of a multicore cable or of a system of single core cables.

NOTE 1 In an alternating current system, the rated voltage of a cable should be at least equal to the nominal voltage of the system for which it is intended and this applies both to the value U_0 and to the value U .

In a direct current system, the nominal voltage of the system should be not higher than 1.5 times the rated voltage of the cable.

NOTE 2 The operating voltage of a system may permanently exceed the nominal voltage of such a system by 10 %. A cable can be used at 10 % higher operating voltage than its rated voltage if the latter is at least equal to the nominal voltage of the system.

The rated voltages recognized for the purposes of this standard shall be 300/300 V and 300/500 V.

5 Core identification

5.1 General

Each core shall be identified by its colour. The colour shall be either throughout the whole of the insulation or on its surface, except for cores in accordance with Tables 12 and 13 which shall be coloured as specified.

5.2 Colours

The colours of the cores shall be as specified in Tables 3 to 6 and Tables 9 to 13, as appropriate.

5.3 Clarity and durability

The colours shall be clearly identifiable and durable. Conformity shall be checked by trying to remove the colours of the cores by rubbing the core lightly 10 times with a piece of cotton wool or cloth soaked in water.

6 Marking

6.1 Indication of origin

All cables shall be provided with an indication of origin consisting of either an identification thread or threads or the continuous (see 6.5) marking of the manufacturer's name or trademark.

If coloured threads are used, the colours shall conform to those registered in PD 2379, where applicable.

The marking of the manufacturer's name or trademark, if used, shall be by one of the following methods:

- printed tape within the cable or cord;
- printing, indenting or embossing on the insulation of at least one core (always including the core coloured blue, if present);
- printing, indenting or embossing on the sheath, if any.

6.2 CENELEC "common marking"

It shall be permitted for a cable for which a harmonized code designation is given in Tables 3 to 6 and 9 to 13 to carry an indication that it has been manufactured under a licence issued by one of the approvals organizations subscribing to the CENELEC agreement on the use of a commonly agreed marking for the cables and cords. If it does carry such an indication this shall be one of the following.

- Continuous (see 6.5) marking of the cable with the mark of the approvals organization, followed by the common marking <HAR> applied by one of the three methods specified in 6.1;
- An identification thread extending throughout the length of the cable or cord indicating the approvals organization. The base colour shall be yellow and this shall be serially dyed or printed red and black. The lengths of the coloured sections shall conform to the dimensions laid down by CENELEC for that approvals organization (see PD 2379).

Neither of these indications shall be used for a cable shown in Tables 3 to 6 and 9 to 13 as being a national type.

The name CENELEC, in full or abbreviated, shall not be directly marked on, or in, the cable.

6.3 Durability

Any marking by printing shall be durable.

Conformity shall be checked by rubbing the marking lightly 10 times with a piece of cotton wool or cloth soaked in water.

6.4 Legibility

All markings shall be legible. The colours of the identification threads shall be easy to recognize or shall become recognizable by cleaning with petrol or other suitable solvent, if necessary.



6.5 Continuity of marks

Each specified mark shall be regarded as continuous if the distance between the end of the mark and the beginning of the next identical mark does not exceed:

- a) 550 mm if the marking is on the outer sheath of the cable or cord;
- b) 275 mm if the marking is:
 - 1) on the insulation of an unsheathed cable cord;
 - 2) on the insulation of a sheathed cable or cord;
 - 3) on a tape within a sheathed cable or cord.

NOTE A “specified mark” is any mark that constitutes a requirement of this British Standard, or the optional CENELEC common marking specified in 6.2.

7 Construction and overall dimensions

7.1 Construction

The construction of the cables shall be as specified in Tables 3 to 6 and Tables 9 to 13, as appropriate.

Conformity shall be checked by examination and measurement.

7.2 Mean overall dimensions

The mean overall dimensions of the cables shall be within the limits specified in Tables 3 to 6 and Tables 9 to 13, as appropriate.

Conformity shall be checked by the method described in BS EN 60811-1-1.

NOTE For national types and sizes, the lower limit is an indicative value and does not constitute a requirement of this standard.

8 Electrical requirements

8.1 Conductor resistance

The d.c. resistance of each conductor of the cables specified in Tables 3 to 6 and 9 to 13, measured on a sample of completed cable not less than 1 m in length, shall conform to the appropriate values given in BS 6360.

8.2 Voltage test on complete cable

When the cable is tested in accordance with C.1 and C.2, no breakdown of the insulation shall occur.

8.3 Voltage test on cores

For cables for which this test is specified, no breakdown of the insulation shall occur when the cable is tested in accordance with C.1 and C.3.

8.4 Insulation resistance

For cables which have insulation made of PVC, the insulation resistance of the cable when tested in accordance with C.1 and C.4, shall not be less than the minimum value given in Tables 9 to 13, as appropriate.

8.5 Long term resistance of insulation to d.c.

For cables which have insulation made of PVC, the exterior of the insulation shall show no signs of damage nor suffer electrical breakdown when the cord is tested in accordance with C.1 and C.5.

NOTE Discoloration of the insulation may be ignored.

8.6 Test to check the absence of faults on insulation

When the cable is tested in accordance with C.1 and C.6, it shall withstand the applied voltage without failure of the insulation.

8.7 Surface resistance of sheath

For cables which have a sheath made of EM 2 compound, the surface resistance of the sheath, when tested in accordance with C.1 and C.7, shall be not less than $1 \times 10^9 \Omega$.

9 Requirements for mechanical strength of cables

9.1 Flexing requirements

When the cable is tested in accordance with annex D, using the load and diameter of pulleys given in Table 1 and the current given in Table 2, no open-circuit of any conductor or short-circuit between cores shall occur during flexing. When the cable is subsequently subjected to the voltage test specified in annex D, no breakdown of the insulation shall occur.

9.2 Requirements for separation of cores

When the cables to Table 13 are tested in accordance with annex F, the tensile force required to separate the cores shall be between 3 N and 30 N.

In addition, the inner layer shall not be visible at the conclusion of the test.

Table 1 — Load to be used and diameter of pulleys for flexing test

Nominal cross-sectional area of conductors mm ²	Load kg	Diameter of pulleys mm
0.5	0.5	60
0.75	1.0	80
1.5	1.0	120
2.5	1.5	120

Table 2 — Current for flexing test

Nominal cross-sectional area of conductors mm ²	Current for PVC-insulated cables A	Current for rubber-insulated cables A
0.5	1.5	—
0.75	3	—
1.5	—	16
2.5	12.5	25

10 Test under fire conditions

Cables shall conform to BS 4066-1.

The test shall be performed on a sample of the complete cable.