

Specification for

Ceiling roses

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- Association of Control Manufacturers — TACMA (BEAMA Ltd.)
- Association of Manufacturers of Domestic Electrical Appliances
- British Electrical Systems Association (BEAMA Ltd.)
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- Electrical Power Engineers' Association
- Electricity Supply Industry in England and Wales
- Institution of Electrical Engineers
- Lighting Industry Federation Ltd.
- National Economic Development Office
- National Inspection Council for Electrical Installation Contracting

The following body was also represented in the drafting of the standard, through a subcommittee:

- Decorative Lighting Association

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Foreword

This revision of this British Standard has been prepared under the direction of the Power Electrical Engineering Standards Committee and supersedes BS 67:1969.

This revised standard comes into force immediately, but to allow manufacturers time to design and introduce any necessary changes, BS 67:1969 will not be withdrawn until 31 December 1987.

NOTE Upon publication of this revision, BSI Sales Department will respond to purchase orders for BS 67 by supplying copies of the 1987 edition. Copies of the 1969 edition may be obtained by quoting the number "BS 67/BS 69"

The main purpose of the revision has been to update the standard so as to bring the requirements and tests into line with other recently published British Standards for accessories which have taken account of relevant International Standards.

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 and ii, pages 1 to 20, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies requirements for ceiling roses having maximum ratings of 6 A and 250 V intended for use in final circuits rated at 16 A maximum for ceiling roses with screw-type supply terminals or 10 A maximum for ceiling roses with screwless supply terminals.

The requirements specified in this standard have particular reference to safety in use.

The ceiling roses are intended for use with cables complying with BS 6004 or BS 6007 having copper conductors and for use with flexible cords complying with BS 6500.

Ceiling roses incorporating means other than rewirable terminals, to facilitate the connection and disconnection of lampholders or luminaires, are not covered by this standard.

NOTE 1 Accessories complying with this standard may be regarded as lighting outlets.

NOTE 2 The titles of the publications referred to in this standard are listed on the inside back cover.

2 Conditions of use

Ceiling roses shall be suitable for use under the following conditions:

- a) an ambient temperature having a peak value not exceeding 40 °C, with an average value not exceeding 35 °C in a period of 24 h, but not subject to exposure to direct radiation from the sun or any other source of heat likely to raise the temperature above the specified ambient temperature;
- b) an ambient temperature having a value not less than – 5 °C;
- c) an altitude not exceeding 2 000 m above sea level;
- d) an atmosphere not subject to excessive pollution by smoke, chemical fumes, salt laden spray, prolonged periods of high humidity or other abnormal conditions.

3 Definitions

For the purposes of this British Standard the following definitions apply.

3.1

ceiling rose

an accessory for connection to the fixed wiring of an installation to pass current to a lampholder or a luminaire by means of the conductors of a flexible cord

3.2

surface-type ceiling rose

a ceiling rose provided with a seating surface such that when mounted as intended it projects wholly outside the surface on which it is mounted

3.3

semi-recessed or flush-type ceiling rose

a ceiling rose intended for mounting with its base partially or completely sunk into a box complying with BS 31, BS 4568-2, BS 4607-5 or BS 4662

3.4

terminal housing

that part of the ceiling rose which locates and separates the terminals

NOTE The terminal housing may, or may not, be integral with the base.

3.5

terminal

a means by which the user can make an electrical connection between the appropriate cable or flexible cord and the conducting parts of the accessory without the use of special tools

3.6

screw-type terminal

a terminal in which the connection is made directly or indirectly by means of screws or nuts of any kind

NOTE The following are examples of screw-type terminals.

a) A pillar terminal is a terminal in which the conductor is inserted into a hole or cavity, where it is clamped under the shank of the screw or screws.

The clamping pressure may be applied directly by the shank of the screw or through an intermediate member to which pressure is applied by the shank of the screw.

b) A screw terminal is a terminal in which the conductor is clamped under the head of the screw.

The clamping pressure may be applied directly by the head of the screw or through an intermediate part, such as a washer, clamping plate or anti-spread device.

c) A stud terminal is a terminal in which the conductor is clamped under a nut.

The clamping pressure may be applied directly by a suitably shaped nut or through an intermediate part, such as a washer, clamping plate or anti-spread device.

3.7

screwless terminal

a connecting terminal for the connection and subsequent disconnection of one conductor or the dismountable interconnection of two or more conductors capable of being dismantled, the connection being made, directly or indirectly, by means of springs or wedges, eccentrics or cones, etc.

3.8

load terminals

terminals intended to accommodate flexible conductors for the connection of a lamp load, via a lampholder or luminaire

3.9 supply terminals

terminals intended to accommodate conductors of the fixed wiring

3.10 loop terminal

a supply terminal intended for the interconnection of live conductors without the provision for the connection of flexible cords

3.11 cover

that part of the external enclosure which is intended to be removed to gain access for installation purposes

3.12 live parts

current carrying parts, and those metal parts in contact with them during normal use

NOTE Earthing terminals are not considered to be current carrying parts.

3.13 rated current

the maximum load, in amperes, which may be connected to the load terminals

3.14 type test

a test, or a series of tests, conducted on a sample, consisting of one or more similar items, to determine whether or not ceiling roses, manufactured to the same design as the sample, are capable of meeting the requirements of the specification

4 General requirements

Ceiling roses shall be so designed and constructed that when installed in the proper manner and in normal use they function reliably and cause no danger to persons or surroundings.

Ceiling roses shall be capable of meeting all the relevant requirements and tests specified herein.

NOTE Where tolerances are not specified in this standard the values are to be regarded as nominal.

5 General conditions for type testing

5.1 All tests in this standard are type tests.

5.2 Unless otherwise specified in this standard ceiling roses shall be tested as delivered and installed, as in normal use, at an ambient temperature of 20 ± 5 °C.

5.3 A total sample of nine ceiling roses shall be submitted to inspection and tests in the following order of clauses:

- a) three ceiling roses: clauses **4** to **13** and clauses **19** and **20** (mainly inspection);

- b) three ceiling roses: clauses **10** to **13**, **14.3** to **14.6** and clauses **16** and **19** (general tests);

- c) three ceiling roses: **14.1**, **14.2** and clauses **17**, **18** and **21** (material tests).

5.4 If no ceiling rose fails in the tests specified in **5.3**, then ceiling roses of that type shall be deemed to comply with this standard.

If one ceiling rose fails in any individual test, or series of tests, specified in **5.3** and that ceiling rose can be shown to be not representative of normal design or production, then a separate set of three ceiling roses shall be submitted to the relevant test or series of tests specified in **5.3**. If no ceiling rose fails in this re-test then ceiling roses of that type shall be deemed to comply with this standard.

If more than one ceiling rose fails in the tests specified in **5.3** then ceiling roses of that type shall be deemed not to comply with this standard.

6 Ratings

6.1 Ceiling roses shall have a rated voltage of 250 V.

6.2 Ceiling roses shall have a rated current not exceeding 6 A.

7 Classification

Ceiling roses shall be classified as follows.

- a) According to the method of mounting as:
 - 1) surface-type (see **3.2**); or
 - 2) semi-recessed or flush-type (see **3.3**).
- b) According to load-supporting capability (see **13.5**) as:
 - 1) intended to support mechanical loads by means of a flexible cord complying with BS 6500;
 - 2) intended to support mechanical loads as nominated by the manufacturer in addition to those specified in **7 b) 1)**, by means other than a flexible cord.
- c) According to the current-carrying terminal arrangement as:
 - 1) having provision for the connection of switch wiring; or
 - 2) having no provision for the connection of switch wiring.
- d) According to terminal type as:
 - 1) having screw-type terminals; or
 - 2) having screwless terminals; or
 - 3) having a combination of both types of terminal.

8 Marking and information

8.1 Ceiling roses shall be marked with the following information on their main part, or one of the parts fixed to it in normal use:

- a) rated voltage, i.e. 250 V;
- b) rated current, specified by the manufacturer;
- c) ceiling roses provided with screwless terminals for installation wiring shall be marked "Not to be used in circuits with ratings exceeding 10 A";
- d) name or trade mark of the manufacturer or responsible vendor;
- e) the number of this British Standard, i.e. BS 67¹⁾.

8.2 When symbols are used, they shall be as follows:

- amperes A
- volts V
- earth $\oplus$ or $\equiv$

NOTE It is recommended that, where practicable, the symbol $\oplus$ should be used.

- line L
- neutral N

For the marking of the rated current and rated voltage, figures may be used alone. The figure for rated current shall be placed before or above that for the rated voltage and separated from the latter by a line, e.g. 6 A 250 V, or $\frac{6}{250}$.

8.3 Where any terminal is provided for particular connection purposes there shall be marking to indicate its intended use, (e.g. LOOP). Such marking shall not be placed on screws, washers or other easily removable parts.

8.4 Marking shall be easily legible and durable.

8.4.1 Compliance shall be checked by inspection and by rubbing the markings for 15 s with a cloth soaked in water and again for 15 s with a cloth soaked in petroleum spirit. The marking shall remain legible. Markings produced by an engraving or moulding process are deemed to comply without test.

8.5 Ceiling roses classified in accordance with clause 7 b) 2) shall be provided with installation information regarding their safe working mechanical loads and the method of fixing to mounting surfaces.

8.5.1 Compliance shall be checked by inspection.

9 Dimensions

9.1 Semi-recessed or flush ceiling roses shall be so designed that they can be fitted to the following relevant mounting boxes.

- a) For circular ceiling roses the box shall be as specified in BS 31, BS 4568-2 or BS 4607-5.
- b) For square ceiling roses the box shall be as specified in BS 4662 (UA1 size).

9.2 Surface mounting ceiling roses shall be provided with at least two holes of at least 5.0 mm diameter, to accommodate mounting screws.

NOTE The two holes should preferably be on nominal centres of 50.8 mm or 60.3 mm.

10 Accessibility of live parts

10.1 Ceiling roses shall be so designed and constructed that when properly assembled, correctly wired and fitted with flexible cord and cover as in normal use, live parts are not accessible.

10.1.1 Compliance shall be checked by applying, with a force of 5 N, test pin I of BS 3042:1971 to all accessible parts of the ceiling rose, when fitted with a circular twin 0.5 mm² flexible cord complying with Table 15 of BS 6500:1984 connected to the load terminals.

10.2 Ceiling roses shall be so designed and constructed that when properly assembled, correctly wired and fitted with cover, but not fitted with flexible cord, live parts are not accessible.

10.2.1 Compliance shall be checked by applying, with a force of 5 N, test finger I of BS 3042:1971 to all accessible parts of the ceiling rose.

10.3 When an associated controlling switch is in the "OFF" position and the ceiling rose is dismantled to the extent necessary to remove or replace a corresponding flexible cord, any conducting part which may remain electrified shall not be accessible to accidental contact.

10.3.1 Compliance shall be checked by applying, with a force of 5 N, test finger I of BS 3042:1971 in a manner most likely to make contact with such parts, with the ceiling rose fitted with 1.0 mm² insulated conductors from a cable complying with Table 5 (a) of BS 6004:1984.

¹⁾ Marking BS 67 on or in relation to a product is a claim by the manufacturer that the product has been manufactured in accordance with the requirements of the standard. The accuracy of such a claim is therefore solely the manufacturer's responsibility. Enquiries as to the availability of third party certification should be addressed to the appropriate certification body.

10.4 Ceiling roses shall be provided with an enclosure to prevent inadvertent contact with live parts. If this enclosure includes a removable cover, the cover shall either:

- a) require the use of a tool for its removal; or
- b) comply with **10.4.1**; or
- c) comply with **10.4.2**.

10.4.1 Screw type covers of ceiling roses shall not be removable without the cover being turned through an angle of more than 270° .

10.4.1.1 Compliance shall be checked by mounting the ceiling rose on a flat plain surface, wired as in normal use and with the cover tightened to a torque, in newton metres, equal to 0.02 times the effective thread diameter, in millimetres, of the securing thread. The cover shall not be removable without first being turned through an angle greater than 270° .

10.4.2 Live parts shall not be accessible with the cover removed.

10.4.2.1 Compliance shall be checked by mounting the ceiling rose as in normal use and correctly wired but with the cover removed. It shall not be possible to touch live parts with test finger I of BS 3042:1971 applied with a force of 5 N.

10.5 In applying the tests described in **10.1.1**, **10.2.1**, **10.3.1** and **10.4.2.1** a supply of 45 ± 5 V, in series with a suitable indicating lamp, shall be connected between the test pin or test finger and the relevant conducting parts of the ceiling rose.

11 Provision for earthing

11.1 All ceiling roses shall be provided with an earthing terminal as specified in clause **12**.

11.2 Provision shall be made for the effective earthing of all metal parts that may become live in the event of failure of the insulation of the ceiling rose or conductors and which are capable of being touched by test finger I of BS 3042:1971, when the ceiling rose is correctly wired and mounted as in normal use. This requirement does not apply to screws in or through non-conducting material and separated by such material from live parts in such a way that, in normal use, they cannot become live. Any connection between the earthing terminal or earthing contact and parts required to be connected thereto shall be of low resistance.

11.2.1 Compliance shall be checked by measuring the resistance between the earthing terminal and any other metal required to be earthed. The resistance shall not exceed 0.05Ω at 25 A.

12 Terminals

12.1 Terminals shall be provided for the connection of line, neutral and protective earthing conductors. Terminals intended for the connection of fixed wiring shall permit the connection, without special preparation, of one, two or three 1.0 mm^2 or 1.5 mm^2 solid conductors, except in the case of the terminal for the connection of switch wiring, which shall permit the connection of one or two such conductors. There shall be separate means to permit the connection of line and neutral conductors of a flexible cord from 0.5 mm^2 to 1.0 mm^2 .

Terminals shall be of a type in which each conductor is gripped firmly and they shall be so designed as to prevent the strands of the conductor from slipping out.

NOTE A screw type terminal may clamp rigid conductors individually or collectively.

12.1.1 Compliance shall be checked by inspection.

12.2 Screw type terminals shall be so located that they are prevented from rotating when the terminal screws are turned.

When pillar type terminals are used they shall meet the following requirements:

- a) minimum nominal diameter of terminal screw: 2.5 mm;
- b) minimum thickness of wall through which the terminal screw passes: half core diameter of the thread of the terminal screw;
- c) the diameter of the conductor hole shall not permit a clearance greater than 0.4 mm on either side of the terminal screw. The screw shall be long enough under the head to extend to the far side of the conductor hole. The screw shall have a slightly rounded end, and the wall of the hole (against which the screw clamps the conductor) shall be unbroken.

12.2.1 Compliance shall be checked by inspection, measurement and the following test.

A rigid conductor of 1.0 mm^2 cross-sectional area shall be placed in the terminal. Screws and nuts shall be tightened and loosened five times by means of a suitable screwdriver or spanner applying a torque as shown in Table 1.

NOTE It is essential that the shape of the blade of the test screwdriver suits the head of the screw being tested and that the screw is not tightened in jerks.

The conductor shall be moved each time the screw or nut is loosened.

During the test, no change shall occur that impairs the further use of the terminal.