AS/NZS 3113:2005
Reconfirmed 2016

AS/NZS 3113:2005

Australian/New Zealand Standard™

Approval and test specification—Ceiling roses

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-004, Electrical Accessories. It was approved on behalf of the Council of Standards Australia on 8 December 2004 and on behalf of the Council of Standards New Zealand on 17 December 2004.
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This Standard was issued in draft form for comment as DR 04376.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF
AS/NZS 3113:2005
Approval and test specification—Ceiling roses

RECONFIRMATION NOTICE

Technical Committee EL-004 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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NOTES

Australian/New Zealand Standard™

Approval and test specification—Ceiling roses

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-004, *Electrical Accessories*, to supersede AS/NZS 3113:2001 from the date of publication.

The objective of this Standard is to provide the Australian and New Zealand electrical industry including manufacturers, test laboratories and regulators with requirements and test methods for ceiling roses.

This Standard is one of a series of approval and test specifications to be read in conjunction with AS/NZS 3100 *Approval and test specification—General requirements for electrical equipment*. The purpose of this series is to outline conditions which shall be met to secure approval for the sale and use of electrical equipment in Australia and New Zealand. Only safety matters and related conditions are covered.

The essential safety requirements in AS/NZS 3820 that could be applicable to ceiling roses are covered by this Standard taken in conjunction with any other relevant requirements affecting safety.

This Standard was revised to introduce the following technical and editorial changes:

(a) Changes to fire test requirements.

(b) Updating of cross-references to referred Standards and other minor editorial changes.

This Standard does not purport to include all the necessary provisions of a contract.

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1 SCOPE AND REFERENCED DOCUMENTS

1.1 Scope

This specification applies to ceiling roses having a current rating up to, and including, 16 A and intended for use at low voltages.

1.2 Referenced documents

The following Standards are referred to in this document.

AS/NZS	
3000	Electrical Installations (known as the Australian/New Zealand Wiring Rules)
3100	Approval and test specification—General requirements for electrical equipment
3121	Approval and test specification—Insulating mouldings

2 DEFINITIONS

For the purpose of this specification, the following definitions apply.

2.1 Ceiling rose

A device intended primarily for mounting on a ceiling, and incorporating facilities for effecting a junction between a flexible cord and a cable of an electrical installation.

2.2 Flush ceiling rose

A ceiling rose intended for mounting on a junction box, and when so mounted having its connecting facilities contained within the box.

2.3 Surface ceiling rose

A ceiling rose intended for mounting on a flat surface, mounting device, or junction box, and when so mounted having its connecting facilities exposed by the removal of a detachable cover.

3 COMPLIANCE WITH SPECIFICATION

3.1 General requirements of AS/NZS 3100

This specification shall be read in conjunction with AS/NZS 3100 and the appropriate provisions of AS/NZS 3100 shall apply to the construction of a ceiling rose and the insulation and safeguarding of parts which normally carry current.

3.2 Specific requirements of this specification

A ceiling rose shall be deemed to comply with this specification only if it complies with all the appropriate requirements of this specification and passes the relevant tests specified herein.

4 DESIGN AND CONSTRUCTION

4.1 General

Ceiling roses shall be of robust design and construction, have adequate mechanical strength, and shall contain adequate facilities for the connection of fixed wiring and of a flexible cord.

4.2 Insulating material

The insulating portions of ceiling roses shall consist of—

(a) insulating material having properties not inferior to those of Class 100 mouldings complying with AS/NZS 3121; or

(b) ceramic material of a type such that, after immersion in water for 48 h and after all visible drops of water have been removed from the surface by means of a clean dry coth, it shall not have increased in mass by more than 2 percent.

All insulating materials, except ceramic, used in the construction of a ceiling rose shall further comply with the requirements of Clause 8.7.

4.3 Terminals

4.3.1 *General*

Terminals shall be of suitable corrosion-resisting metal of sufficient hardness and rigidity for the intended application.

4.3.2 *Number and size*

Ceiling roses shall be provided with not less than three sets of terminals. Each set shall be capable of accommodating three fixed wiring conductors, plus one flexible cord conductor, of appropriate sizes according to the current rating of the ceiling rose. In addition, one of the three sets of terminals shall be for the termination of an earthing conductor and identified in accordance with Clause 7.3.

4.4 Strength of screw threads and fixings

All screws which have to be removed or loosened for the purpose of connecting conductors shall pass the test for screw threads and fixings of AS/NZS 3100.

5 BODY

5.1 General

The design and arrangement of the mounting face shall be such as will ensure an even and firm seating when the ceiling rose is mounted as intended.

Where knock-outs are provided in the wall forming the recess, they shall not substantially reduce the wall strength.

5.2 Holes for fixing screws

At least two holes shall be provided for fixing screws.

The holes shall be positioned and arranged so that the fixing screws do not make contact with live metal parts during normal insertion and withdrawal. In addition, the holes shall, for ceiling roses intended for use with junction boxes, be symmetrically disposed (on a diameter or a line), and for all other types be substantially symmetrical.

5.3 Attachment of cover

Where a cover is provided, suitable means shall be incorporated in the body of the ceiling rose for securely fixing the cover in position. Where a screw-on cover is provided, an appropriate flange or stop shall be incorporated in the body against which the cover may bear evenly.

5.4 Insulating barriers

Live parts shall be separated from each other, from earthing terminals, and from earthed metal if any, by insulating barriers that form an integral part of the ceiling rose, or of the terminals.

5.5 Cord anchorage

Ceiling roses shall be provided with an arrangement which will effectively reduce the stress on the flexible cord terminals, and which will pass the test of Clause 8.5.

6 COVER AND FLEXIBLE CORD ENTRY

6.1 Cover

Any ceiling rose intended for surface mounting shall be provided with a suitable cover for enclosing the terminal facilities. The cover shall be of a size and shape which will ensure adequate clearances when assembled on the body.

The interior surfaces of the cover shall be free from any projections likely to damage or stress the flexible cord when the cover is attached or while being attached.

Where a cover can be detached only by means of a tool, the securing means shall not utilize the fixing holes of the base and shall be arranged so that such means are adequately insulated from any internal terminal or conductor.

6.2 Flexible cord entry

The opening through which the flexible cord enters shall be formed or bushed so as to minimize abrasion of the protective covering or insulation and shall have a diameter of not less than 9.5 mm nor more than 12.5 mm.

7 MARKING

7.1 Required marking

The ceiling rose shall be marked with the following information in accordance with the relevant marking requirements of AS/NZS 3100:

(a) The name, or registered trade name, or mark of the manufacturer.

(b) The voltage.

(c) The current rating, in amperes.

(d) If not the only type of ceiling rose marketed by the manufacturers, the ceiling rose shall also be marked with a catalogue number, type number or name, or other marking which will distinguish it from any other ceiling rose marketed by that manufacturer.

7.2 Location of the marking

The marking required by Clause 7.1 shall be located as follows:

(a) Item (a)—on any suitable portion of the body or cover.

(b) Items (b) and (c)—any suitable position so that it is visible when the ceiling rose is mounted in position and with the cover removed; such marking shall not be placed on the cover.

(c) Item (d)—on any suitable portion of the ceiling rose or on the container in which the ceiling rose is supplied by the manufacturer.

7.3 Earthing connections

The earthing terminals shall be marked in accordance with the requirements for marking earth connections of AS/NZS 3100. Such marking shall be located either on, or adjacent to, the earthing terminal and be clearly visible with the cover, if any, removed.

8 TESTS

8.1 General

Ceiling roses shall be subjected to the tests specified in Table 1, carried out in the order stated therein, and shall comply with the requirements thereof.

TABLE 1

TESTS TO BE APPLIED AND ORDER OF APPLICATION

Test number	Description of test	Clause reference for test procedure and criteria	Sample identification
1	Insulation resistance test	8.2	A
2	High voltage test	8.3	A
3	Test of screw threads and fixings	8.4	A
4	Flexible cord anchorage test	8.5	A
5	Temperature and fire-risk test	8.6	A
6	Resistance to fire test	8.7	A
	Number of samples		1

8.2 Insulation resistance test

Prior to the test, the ceiling rose shall be mounted on a metal plate by means of metal fixing screws, corresponding in respect of their diameter, size, and type of head to the screws which would normally be used for fixing the ceiling rose. The metal plate shall extend at least 6 mm beyond each edge of the mounting face of the ceiling rose.

The insulation resistance shall then be measured at a voltage of 500 V d.c. as follows:

(a) Between live parts and any external metal, including the mounting plate, the live parts of the ceiling rose being connected together.

(b) Between live parts of the ceiling rose.

(c) Between live parts of the ceiling rose and the earthing terminal.

(d) Between live parts of the ceiling rose and a flexible electrode applied to non-conducting parts normally accessible in service.

The insulation resistance so measured shall be not less than 50 MΩ.

8.3 High voltage test

Prior to the test the ceiling rose shall be mounted as indicated in Clause 8.2.

The ceiling rose shall then be subjected to a high voltage (electric strength) of AS/NZS 3100 with the following a.c. voltages applied for 1 min.

(a) Between the parts set out in Items (b) and (c) of Clause 8.2 for ceiling roses rated at 250V or less ..... 1000 V r.m.s.

(b) Between the parts set out in Items (b) and (c) of Clause 8.2 for ceiling roses rated at greater than 250 V .....1000 V + 2 × working voltage with a maximum of 2000 V.

(c) Between the parts set out in items (a) and (d) of Clause 8.2 .....3500 V r.m.s.

There shall be no failure, partial failure, or arcing over during the test, and immediately following the test. As a check against any impairment of insulation, the insulation resistance test described in Clause 8.2 shall be repeated.

8.4 Test of screw threads and fixings

All thread fastenings used for the connection of conductors and any screw used to secure removable covers shall pass the test for screw threads and fixings of AS/NZS 3100.

Two tests shall be carried out on each terminal, connected respectively:

(a) For terminals intended for fixed wiring—

(i) 1×1 mm^2; and

(ii) 3×2.5 mm^2.

(b) For terminals intended for flexible cord—

(i) 1×0.75 mm^2; and

(ii) $1 \times$ the size applicable to the maximum current rating of the ceiling rose.

8.5 Flexible cord anchorage test

The conductors of a 2-core circular ordinary duty PVC 0.75 mm^2 flexible cord shall be correctly connected to the appropriate terminals of the ceiling rose.

A direct pull shall be applied through the flexible cord in the direction in which the flexible cord enters the ceiling rose. Over a period of 10 s the pull shall be increased uniformly to a value of 160 N, maintained at that value for a further 10 s, and then released. This test shall be performed three times.

The flexible cord shall then be replaced with a 3-core heavy duty flexible cord of a size appropriate to the maximum current rating of the ceiling rose. This test shall be performed three times.

The cord anchorage shall be deemed inadequate if either before the direct pull reaches the specified value or during the time for which the pull is maintained—

(a) the flexible cord or any strand of the flexible conductors part from the terminals; or

(b) the terminals break away or are impaired.

8.6 Temperature and fire-risk test

Any material or insulation of the ceiling rose shall not attain excessive temperatures in normal use.

Compliance is checked by the temperature and fire risk test of AS/NZS 3100, except that the ceiling rose shall be mounted on the ceiling of a right-angle test corner, comprising three matt black painted 10 mm to 20 mm thick particle board sections, including ceiling. A clearance of approximately 10 mm shall be maintained between the ceiling rose and each wall of the enclosure.

The ceiling rose shall be connected so that the test current passes through all live terminals and the load is applied through a 1 m length of 0.75 mm^2 flexible cord for a ceiling rose marked 10 A or less, and a 1 m length of 1 mm^2 flexible cord for a ceiling rose marked greater than 10 A.

The value of the test current shall be the marked current rating of the ceiling rose.

Temperatures attained shall not exceed those specified in AS/NZS 3100 nor shall the temperature rise of any terminal exceed 40°C.

8.7 Resistance to fire test*

Ceiling roses are deemed to be unattended accessories. This test shall be carried out in accordance with the requirements for the resistance to fire test of AS/NZS 3100 with all glow wire tests on parts of insulating material supporting, in contact with, or in close proximity to current carrying connections to be carried out at 750°C.

8.7 Resistance to fire test†

Ceiling roses shall comply with the requirements for resistance to fire in accordance with AS/NZS 3100 Annex A as follows:

(a) The glow-wire test temperature 'T' shall be 750°C.

(b) Other relevant parts shall be subjected to the glow-wire test with a test temperature of 750°C.

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* This Clause ceases to be part of the Standard on 9 July 2006.

† This Clause forms part of the Standard on publication but shall be applied from 9 July 2006.

NOTES

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