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Australian Standard®

Approval and test specification— Cord extension sockets

[Title allocated by Defence Cataloguing Authority:
Connector, plug electrical (female, cord extension, approval and test
specification)]



STANDARDS AUSTRALIA 

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The following interests are represented on Committee EL/4:

Australian Electrical and Electronic Manufacturers Association
Confederation of Australian Industry
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Electrical Contractors Association of Australia
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PREFACE

This Standard was prepared by the Standards Australia Committee on Electrical Accessories to supersede AS 3120—1987.

It is one of a series of Approval and Test Specifications issued by the organization. These Specifications are accompanied by a general Specification AS 3100, containing definitions and general requirements for electrical materials and equipment. The purpose of these Specifications is to outline conditions which must be met to secure approval for the sale and use of electrical equipment in Australia. Only safety matters and related conditions are covered.

This Standard was revised to incorporate Amendment No 1, December 1987 (which affected Clauses 21.2 and 22.2 and Table 3), Amendment No 2, July 1989 (which affected Clauses 6.2, 20, 22.4, 22.11 and 22.14 and Table 3) and to introduce major technical changes in an attempt to increase the safety of the established 3-pin flat-pin plug/socket system; in particular, to overcome the problems associated with partial engagement or disengagement.

A major change is the introduction of requirements for a full 360° projection surrounding the socket face of a 10 A rated cord extension socket for a depth of 8.3 mm. An accompanying change is being introduced in AS 3112, *Approval and test specification—Plugs and socket-outlets*, for 2-pin and 3-pin flat-pin plugs of up to 10 A rating, i.e. the shape of the plug is 'controlled' for a distance of 8.6 mm from the front face. This dimensional control allows for the plug to be inserted into, and withdrawn from, the cord extension socket with a full 360° projection, with no access to a pin, whilst live, being possible.

To allow for manufacturer retooling and, in particular, to take account of incompatibility with existing plugs and plug-in devices in cord extension sockets with a full 360° projection, the plug changes are being introduced 2 years from date of publication in AS 3112, whereas the cord extension socket changes **shall not** form part of the Specification until 5 years after publication, but must be applied 7 years from publication.

Other major changes include the introduction of—

- (a) requirements for the ergonomic design of cord extension sockets, i.e. provision of a functionally adequate finger grip; and
- (b) specification of the depth (from the socket-outlet face) required to make the first point of contact with socket contacts.

Other changes include updating of the cross-reference to referred Standards and renumbering of Clauses. This Specification supersedes AS 3120—1987 (including Amendment No 1, December 1987 and Amendment No 2, July 1989) from date of publication, with the exception of—

- (i) Clause 8.3 which forms part of the Specification 2 years from date of publication.
- (ii) Table 1 dimensional change to the major axis of the live pin aperture for 10 A and 15 A rated cord extension sockets, which forms part of the Specification 4 years from date of publication.
- (iii) Clauses 9.2 (and the accompanying new Figure 1) and 13.1 (new), which **shall not** form part of the Specification until at least 5 years from date of publication, but **must be applied** 7 years from publication.
- (iv) Clause 13.3 (new) which forms part of the Specification 5 years from date of publication.
- (v) Clause 13.4 which forms part of the Specification 2 years from date of publication for 10 A and 15 A cord extension sockets, and 5 years from publication for 20 A cord extension sockets.
- (vi) The concluding paragraphs of Clauses 18.2 and 18.3 which form part of the Specification 7 years from date of publication.

Standards Australia points out that this Specification does not purport to include all the necessary provisions of a contract.

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Approval and test specification—Cord extension sockets

1 SCOPE. This Specification specifies essential safety requirements for cord extension sockets, as defined in Clause 4, intended for use at extra-low, low and medium voltages.

This Specification does not apply to cord extension sockets which are enclosed within an appliance in such a way that they are not exposed to personal contact, or which are intended for use solely where they will be so enclosed.

2 APPLICATION.

2.1 General requirements of AS 3100. This Specification shall be read in conjunction with AS 3100 and the appropriate provisions of AS 3100 shall apply to the construction of a cord extension socket and the insulation and safeguarding of parts which normally carry current.

2.2 Specific requirements of this Specification. A cord extension socket shall be deemed to comply with this Specification only if it complies with all the requirements of this Specification and passes the tests specified herein.

3 REFERENCED DOCUMENTS. The Approval and Test Specifications below are referred to in this Standard.

AS

- 3100 Definitions and general requirements for electrical materials and equipment
- 3109 Appliance couplers for household and similar general purposes
- 3109.1 Part 1: General requirements
- 3112 Plugs and socket-outlets
- 3121 Insulating mouldings
- 3133 Air break switches

4 DEFINITION. For the purpose of this Specification, the definition below applies.

Cord extension socket (hereinafter referred to as a 'socket')—a device arranged for attachment to a flexible cord and having contacts whereby a detachable connection may be made with pins of a plug.

5 EXEMPTIONS FOR EXTRA-LOW VOLTAGE SOCKETS. Extra-low voltage type sockets shall not be required to comply with Clauses 17, 18 and 22.2.

6 LIMITATION OF OUTLETS. Sockets shall accommodate one plug only.

7 TERMINALS AND INTERNAL CONNECTIONS.

7.1 Material. Terminals and internal connections intended primarily for carrying current shall be of suitable corrosion-resisting metal, of sufficient hardness and rigidity for the intended application.

7.2 Construction of terminals. The terminals shall be capable of accommodating the conductors of a flexible cord of current rating corresponding to the marked current rating of the socket.

Facilities shall be provided to prevent slipping or spreading of the conductors or conductor strands. Where the facilities are such that the conductor is to be located around the shank of the terminal screw and clamped under the screw head, the following shall apply:

- (a) When the terminal screw is screwed in to the limit of its thread, the clearance between the head of the screw and the washer or means of retention of the conductor shall not exceed 0.4 mm.
- (b) The terminal screw shall be of sufficient length to enable it to be backed off sufficiently from the washer or means of retention of the conductor so that the conductor may be located around the shank without difficulty.
- (c) Where the means of retention of the conductor is not continuous, e.g. prongs, there shall be at least three points of retention and the maximum angle between any two points shall not exceed 150 degrees.
- (d) Where the means of retention of the conductor is continuous, e.g. portion of the insulating moulding, the angle subtended by the arc of the means of retention shall be not less than 180 degrees.

When the socket is correctly assembled, the terminals shall be held firmly in position.