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APPROVAL AND TEST SPECIFICATION FOR ELECTRIC SOLDERING IRONS



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Represented on the committee which was responsible for the preparation of this standard were the following:

- Australian Consumers Association
- Australian Electrical and Electronic Manufacturers Association
- Confederation of Australian Industry
- Electrical Apparatus Approvals Authorities
- Electrical Testing Laboratories
- Electrical Supply Association of Australia
- Electronics Importers Association

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AMENDMENT No 1
to
AS 3114—1982
Approval and Test Specification for
ELECTRIC SOLDERING IRONS

REVISED TEXT

The 1982 edition of AS 3114 is amended as follows; the amendments should be inserted in the appropriate place.

SUMMARY: The following sections of the standard are covered by this amendment: Clauses 11.2 and 11.5.

Published on 5 October 1984.

Page 5. Clause 11.2.

Delete existing clause and substitute the following:

11.2 Insulation Resistance Test. Insulation resistance shall be measured at a voltage of 500 V d.c. on the soldering iron as a whole, between live parts (contact pins) and exposed metal, accessible metal and a flexible electrode applied to non-conducting parts normally handled in service.

The soldering iron, as received, shall be connected to the supply mains at the marked voltage for 2 min. The insulation resistance shall then be measured, while the iron is hot, and shall be not less than 100 k Ω for single-insulated irons, and not less than 10 M Ω for double-insulated or extra low voltage irons (see Note 1). The iron shall then be allowed to cool to room temperature and the insulation resistance shall again be measured and shall be not less than 100 k Ω and 10 M Ω respectively (see Note 2). The iron shall then be heated for 2 h in an oven at a temperature of approximately 105 °C. At the end of this period the iron shall be allowed to cool to room temperature. The insulation resistance shall again be measured and shall then not be less than 1 M Ω and 10 M Ω respectively.

NOTES:

1. The insulation resistance for elv irons is measured from the mains supply pins or terminals of the transformer to the external metal or to the flexible electrode applied to non-conducting parts of the iron.
2. If the insulation resistance is not less than 1 M Ω or 10 M Ω respectively at this stage the test in the oven need not be carried out.

This amendment forms part of the specification on publication.

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Page 6. Clause 11.5.

Delete existing clause and *substitute* the following.

Immediately following the test of Clause 11.4 the soldering iron shall be allowed to cool to room temperature and the insulation resistance shall be measured at a voltage of 500 V d.c. The value of insulation resistance measured shall be not less than 1 M Ω for single-insulated irons or 10 M Ω for double-insulated irons.

This amendment forms part of the specification on publication.

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PREFACE

This edition of this specification, prepared by Committee EL/2, Electrical Approvals Standards, was approved on behalf of the Council of the Standards Association of Australia on 27 January 1982, and was published on 19 April 1982.

It is one of a series of approval and test specifications issued by the Association. 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 edition is technically identical with the 1974 edition except that it incorporates Amendment No 1 to that edition which was issued in August 1978 and includes changes to the following clauses:

- Clause 6.1—modifies requirements for connection.
- *Table 1—additional tests.
- Clause 11.6—incorporates present terminology for thermal cutouts.
- †Clause 11.7—adds fire test.
- ‡Clause 11.8—adds test for d.c. component.

This specification supersedes AS 3114—1974 from date of publication.

The Association desires to call attention to the fact that this specification does not purport to include all the necessary provisions of a contract.

This specification requires reference to the following Australian standard approval and test specifications:

AS 3100	Definitions and General Requirements for Electrical Materials and Equipment
AS 3126	Extra Low Voltage Transformers
AS C109	Appliance Plugs and Appliance Inlet Sockets.

*Test No 13 forms part of the specification on 1 January 1983.

Test No 14 forms part of the specification on 1 March 1983.

†This Clause forms part of the specification on 1 January 1983.

‡This Clause forms part of the specification on 1 March 1983.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
APPROVAL AND TEST SPECIFICATION FOR
ELECTRIC SOLDERING IRONS

This specification shall be read in conjunction with AS 3100. (See also Clause 3, below.)

1 SCOPE. This specification applies to electric soldering irons designed for connection to direct or alternating current low voltage supply.

It does not apply to an electric soldering iron intended to operate at extra-low voltage obtained from a separate transformer.

NOTE: The e.l.v. transformer referred to above falls within the scope of AS 3126.

2 DEFINITIONS. For the purpose of this specification, the following definitions shall apply:

2.1 Soldering iron—a portable tool, a part of which is a soldering bit heated by means of an electric heating unit contained within the tool.

2.2 Miniature soldering iron—a soldering iron having a mass not exceeding 120 g including the soldering bit, but excluding the attached flexible cord, and which has a rated loading not exceeding 30 W.

3 COMPLIANCE WITH SPECIFICATIONS.

3.1 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 the soldering iron and the insulation and/or safeguarding of parts which normally carry current.

3.2 Specific Requirements of this Specification. A soldering iron 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.

3.3 Requirements of Other Specifications. Equipment and components, the function of which is likely to give rise to a hazard, incorporated in a soldering iron shall comply with the appropriate requirements of any relevant approval and test specification.

4 SAFEGUARDING. All elements and live parts, other than contact pins, shall be completely enclosed within the casing and handle of the soldering iron. Contact pins shall be considered as part of an appliance inlet socket and shall be safeguarded as such (see Clause 6.1 below).

5 HANDLE. The handle shall be made of material which is electrically non-conductive and of low thermal conductivity.

6 MEANS OF CONNECTION.

6.1 Type of Connecting Device. The soldering iron shall be provided with one of the following means of connection to the supply:

- (a) A Type C appliance inlet socket complying with AS C109. The inlet socket shall be so arranged that the temperature of the appliance plug when inserted will not exceed the temperature appropriate for the insulating moulding thereof under the conditions specified in Clause 11.4.
- (b) For miniature soldering irons a power supply cord which shall be assembled with the appliance by one of the following methods:
 - Type X attachment.
 - Type M attachment.
 - Type Y attachment.
 - Type Z attachment.
- (c) For all other soldering irons a power supply cord which shall be assembled with the appliance by one of the following methods:
 - Type X attachment.
 - Type M attachment.
 - Type Y attachment.

6.2 Terminal Blocks. Any terminal block of material which is inherently hygroscopic shall be treated by impregnation or similar means to render it suitable for the intended application.

7 FLEXIBLE CORD AND CONNECTING PLUG.

7.1 Provision and Type. Where required by Clause 4.4 of AS 3100, the soldering iron shall be provided with a supply flexible cord and connecting plug.

Any flexible cord provided with the soldering iron for the purpose of connecting it to the supply shall—

- (a) be of a type complying with AS 3191 as follows:
 - (i) for miniature type soldering irons, an uninkable type or not inferior to a light duty sheathed type;
 - (ii) for normal soldering irons, an uninkable type or not inferior to an ordinary duty sheathed type;
- (b) be correctly wired in accordance with the appropriate requirements of Clause 4.4 of AS 3100; and
- (c) have a free length of not less than 1.8 m.

7.2 Cord Anchorage. Anchorage of flexible cords shall comply with the appropriate requirements of AS 3100.

8 MARKING.

8.1 Required Marking. Every soldering iron shall be marked with the following information in accordance with Clause 7.2 of AS 3100: