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# Australian Standard 3149—1982

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## APPROVAL AND TEST SPECIFICATION FOR FLEXIBLE ELECTRIC HEATING PADS



**PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA  
STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.**

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This Australian standard was prepared by Committee EL/2, Electrical Approvals Standards. It was approved on behalf of the Council of the Standards Association of Australia on 9 March 1982 and published on 21 June 1982.

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The following interests were represented on the committee responsible for the preparation of this standard:

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

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Revised and issued as AS 3149 .....	1974 J
Second edition .....	1982

## PREFACE

This edition of this specification was prepared by the Association's Committee EL/2, Electrical Approvals Standards.

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 Amendments Nos 1 and 2 to that edition which were issued in August 1978 and July 1979 respectively, and includes changes to the following:

- \*Table 1—additional tests.
- †Clause 13.12—adds fire test.
- ‡Clause 13.13—adds test for d.c. component.

This specification supersedes AS 3149—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 3164	Electric Blankets
AS 3167	Protective Isolating Transformers
AS C109	Appliance Plugs and Appliance Inlet Sockets

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

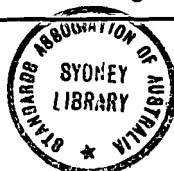
Test No 14 forms part of the specification on 1 March 1983.

†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**  
**FLEXIBLE ELECTRIC HEATING PADS**

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

**1 SCOPE.** This specification applies to flexible heating pads intended for electrical operation by direct or alternating current.

The specification deals also with any transformer supplied with a pad for the purpose of enabling connection to low-voltage supply.

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

**2.1 Electric heating pad**—an appliance in the form of a pad which is heated by means of an electric heating element contained within an enclosure or envelope, whose projected surface area does not exceed 0.6 m<sup>2</sup>; and hereinafter referred to as a 'heating pad'.

**2.2 Heating element**—the actual electrical conducting medium which, designedly, is heated by an electric current.

**2.3 Surface heating area**—the projected area (projected on a horizontal plane on which the heating pad is laid out flat) of that portion of a heating pad into which the heating element is built; it shall not include the area of any marginal hems or flaps surrounding the portion into which the heating element is built.

**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 heating pad and the insulation and/or safeguarding of parts which normally carry current.

**3.2 Specific Requirements of This Specification.** A heating pad 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 heating pad shall comply with the appropriate requirements of any relevant approval and test specification.

**4 MAXIMUM VOLTAGE.** The marked voltage of a heating pad shall not exceed 250 V.

**5 ENCLOSURE.** The enclosure or envelope of a heating pad shall be of strong, durable, flexible and heat-resisting material. Unless the heating element and other live parts are contained in a continuous moisture-proof enclosure, the outer envelope of the heating pad shall be moisture-proof. The envelope shall form a complete enclosure for all live parts of the

heating pad and shall have no openings for ventilation or for any other purpose. All seams shall be secured by double stitching in fabric at an interval of not more than 26 mm or by equivalent means in other materials. The design of the heating pad shall be such that seams will not be subject to undue stress in actual service.

All joints, including the entry of the flexible cord, shall be sealed to prevent the entry of moisture.

Any waterproof covering shall comply with the tests required under Clause 13, provided that any detachable covering shall not be acceptable as providing a waterproof covering.

**6 HEATING UNIT.** The heating element shall be held securely in position and shall be so located that its heat will not be concentrated within less than half of the area of the heating pad. The heating element shall be surrounded by electrical insulating material over its entire length so that it will not be in contact with the outer envelope at any point. Cotton or similar readily combustible material shall not be used in direct contact with the heating element.

The heating element shall be secured on a supporting fabric and shall have adjacent sections evenly spaced. The supporting fabric shall have sufficient rigidity or be so reinforced as to maintain the intended spacing between adjacent sections under conditions of normal use.

Where a heating pad has a marked voltage not exceeding 32 V, the requirements of Clause 5 and this Clause 6 may be modified if an equivalent degree of safety is afforded by special features of design or construction.

**7 MEANS OF CONNECTION.** The heating pad shall be supplied complete with flexible cord complying with AS 3191. Such flexible cord shall be directly connected to the heating element and shall be securely fixed to the pad in such a way that a pull on the flexible cord will not be transmitted to any wiring connections.

Any flexible cord provided with the heating pad for the purpose of connecting it to the supply, shall—

- (a) be of a type not inferior to the following:
  - (i) braided type, or
  - (ii) unkinkable type, or
  - (iii) a sheathed type not inferior to a light duty type;
- (b) be correctly wired in accordance with the appropriate requirements of Clause 4.4 of AS 3100;
- (c) have an unbroken length from the plug of at least 1.8 m; and