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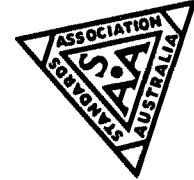
Australian Standard 3143—1982

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APPROVAL AND TEST SPECIFICATION FOR TRANSFORMERS FOR COLD- CATHODE ELECTRIC DISCHARGE LIGHTING SYSTEMS

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**Australian Electrical and Electronic Manufacturers Association
Association of Consulting Engineers Australia
Confederation of Australian Industry
Department of Housing and Construction
Department of Public Works, NSW
Electrical Apparatus Approvals Authorities
Electronic Importers Association
Electricity Supply Association of Australia
Illuminating Engineering Societies of Australia
Public Works Department, Victoria
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Second edition	1982

PREFACE

This revised specification, prepared by Committee LG/3, Auxiliaries For Discharge Lamps, was approved on behalf of the Council of the Standards Association of Australia on 30 September 1981, and was published on 25 January 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 C100, 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 updates the cross-reference to other Australian standards. Committee LG/3 reconfirmed the established criteria, and therefore no attempt has been made to revise the specification technically.

This specification supersedes AS 3143—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:

AS 3000 SAA Wiring Rules

and to the following Australian standard approval and test specification:

AS C100 Definitions and General Requirements for Electrical Materials and Equipment.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

APPROVAL AND TEST SPECIFICATION FOR TRANSFORMERS FOR COLD-CATHODE ELECTRIC DISCHARGE LAMPS AND LIGHTING SYSTEMS

This specification shall be read in conjunction with AS C100. (See also Clause 2, below.)

1 SCOPE. This specification applies to double-wound transformers intended for use in stepping-up the voltage to electric discharge systems designed to produce visible or ultraviolet radiations. It also applies to autotransformers used for stepping-up and controlling the voltage for cold-cathode fluorescent lamps and sterilizing lamps, but does not apply to autotransformers used with sodium-vapour and mercury-vapour lamps.

Capacitors for use with electric-discharge lamps and lighting systems are not covered by this specification.

2 COMPLIANCE WITH SPECIFICATIONS.

2.1 General Requirements of AS C100. This specification shall be read in conjunction with AS C100 and the appropriate provisions of that specification shall apply to the construction of the transformer and the insulation and/or safeguarding of parts which normally carry current.

NOTE: AS 3000 lays down certain requirements in respect of equipment associated with electric discharge lighting installations. Attention is drawn particularly to Clauses 4.23.2, Enclosure of Auxiliaries, and 4.23.6.3, Autotransformers.

2.2 Specific Requirements of this Specification. A transformer shall be deemed to comply with this specification only if it complies with the appropriate requirements of this specification applicable to the type, and satisfactorily passes the relevant tests specified herein for the individual type.

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

3 CONSTRUCTION.

3.1 Case. Unless designed for use within the enclosure of other equipment, the transformer shall be enclosed in a substantial case of metal or non-flammable, non-hygroscopic insulating material.

3.2 Location of Winding and Core. The winding of the transformer shall be positively spaced from any metallic case and from other metal parts in contact with the case by means of suitable insulating material, independently of any filling material.

The core of the transformer shall either be similarly spaced from any metallic case or shall be positively bonded to it by bolting or other suitable means.

3.3 Filling. The transformer, if not of the dry air-cooled type, shall be filled with a compound having a flashpoint higher than 200°C, or be filled with non-flammable material.

4 EARTHING.

4.1 General. Any exposed metal parts of the transformer or its container shall be in good electrical contact with each other and shall be provided with a common earthing facility by means of which all such exposed metal parts may be effectively earthed.

4.2 Double-wound Transformers. In a double-wound transformer, the earthing facility shall be in the form of a suitable earthing terminal, to which the core of the transformer shall be bonded. If the output open-circuit voltage exceeds 7500 V (r.m.s) the midpoint of the output winding shall be directly connected to the earthing terminal.

5 MEANS OF CONNECTION.

5.1 Double-wound Transformers. Any double-wound transformer shall be provided with suitable terminals, effectively insulated. (See also Clause 4.3 of AS C100.)

5.2 Autotransformers. Any autotransformer shall be provided with means of connection comprising either suitable terminals or external insulated leads directly connected to the winding.

If connection is effected by external leads, the cables comprising the leads shall have insulation of voltage grade adequate for the maximum steady-state voltage likely to be sustained, including the voltage prevailing under open-circuit conditions.

NOTE: Where a lead is designed for connection to the neutral conductor only of the supply and this is made clear in the marking specified under Clause 7, the insulation of the lead need not have a voltage grade higher than the voltage to earth of the supply.

The insulation of connecting leads shall be such that the permissible temperature limit for the insulating material is not exceeded when the transformer operates continuously at rated load.

NOTE: Compliance with this requirement will be afforded if the temperature attained by the insulation of leads does not exceed the permissible limit when the autotransformer is subjected to the test described in Clause 11.5.

6 FLEXIBLE CORD AND CONNECTING PLUG.

The transformer shall not be required to comply with the requirements of Clause 4.4 of AS C100 in respect of providing a supply of flexible cord and connecting plug.

7 TERMINAL MARKINGS

7.1 Double-wound Transformers. Unless their purpose is clearly evident, the live terminals of any double-wound transformer shall be appropriately marked.