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Australian Standard® 3156—1987

APPROVAL AND TEST SPECIFICATION— ELECTRIC LAWNMOWERS



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

Incorporated by Royal Charter



This Australian standard was prepared by Committee EL/2, Electric Approvals Standards. It was approved on behalf of the Council of the Standards Association of Australia on 20 January 1987 and published on 2 March 1987.

The following interests are represented on Committee EL/2:

- Australian Consumers Association
- Australian Electrical and Electronic Manufacturers Association
- Confederation of Australian Industry
- Consumer Electronics Suppliers Association
- Electrical Apparatus Approvals Authorities
- Electrical Testing Laboratories
- Electricity Supply Association of Australia
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STANDARDS AUSTRALIA

Amendment No 2

to

AS 3156—1987

Approval and test specification—Electric lawnmowers

REVISED TEXT

The 1987 edition of AS 3156, which was amended in May 1988, is further amended as follows; the amendment should be inserted in the appropriate place.

SUMMARY: This Amendment applies to Clause 17.1.

Published on 14 July 1989.

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STANDARDS ASSOCIATION OF AUSTRALIA
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10 MAY 1988

AMENDMENT No 1
to
AS 3156—1987
APPROVAL AND TEST SPECIFICATION—
ELECTRIC LAWMOWERS

REVISED TEXT

The 1987 edition of AS 3156 is amended as follows; the amendment should be inserted in the appropriate place.

SUMMARY: The following section of the Standard is covered by this Amendment: Clause 7.

Published on 9 May 1988.

PREFACE

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 was published to incorporate into the specification changes to the following clauses:

Clause 2—Modifies definition.

Clause 7—Modifies requirements for enclosures.

Clause 8—Deleted—All subsequent clauses renumbered.

Clause 9 (was 10)—New requirements for means of connection.

Clause 10 (was 11)—New requirements for cord extension set.

Clause 11 (was 12)—Modifies requirements for wiring.

Clause 12 (was 13)—Modifies requirements for earthing.

Clause 14 (was 15)—Modifies requirements for switches.

Clause 15 (was 16)—Modifies requirements for brush caps.

Clause 18 (was 19)—Adds a table of tests and modifies the tests required.

Also a list of referenced documents has been added to Clause 1 and a Note with regard to the StandardsMark has been added to Clause 17.

This specification supersedes AS 3156—1982 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.



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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

APPROVAL AND TEST SPECIFICATION—
ELECTRIC LAWNMOWERS

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

1 SCOPE AND REFERENCED DOCUMENTS.

1.1 Scope. This specification applies to electric lawnmowers that are intended for operation at low or medium voltage. It includes self-propelling lawnmowers and edge-trimming appliances.

1.2 Referenced documents. The following documents are referred to in this standard:

1.2.1 Standards.

AS 1939 Classification of Degrees of Protection Provided by Enclosures for Electrical Equipment

1.2.2 Approval and test specifications.

AS 3100 Definitions and General Requirements for Electrical Materials and Equipment

AS 3109 Appliance Couplers for Household and Similar General Purposes

AS 3112 Plugs and Plug Sockets

AS 3120 Cord Extension Sockets

AS 3133 Air-break Switches

AS 3145 Radio Interference Suppression Devices

AS 3191 Electric Flexible Cords

AS 3199 Cord Extension Sets

2 DEFINITIONS. For the purposes of this specification the following definition applies:

2.1 Electric lawnmower—a portable appliance incorporating an electric motor to operate cutters, blades, or the like, and designed for mowing lawns or trimming edges.

NOTE: Unless otherwise indicated, the term 'lawnmower' as used throughout this specification includes 'edge-trimming appliance'.

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 that specification shall apply to the construction of the lawnmower and the insulation and safeguarding of parts which normally carry current.

3.2 Specific requirements of this specification. An electric lawnmower 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 incorporated in an electric lawnmower which are depended upon for safety shall comply with the appropriate requirements of any relevant approval and test specification unless such requirements are varied herein.

4 ENCLOSURE OF LIVE PARTS. If an electric lawnmower incorporates any covers, fittings, or the like, that are detachable without the use of a tool, the removal of such covers or fittings shall not expose live parts to personal contact.

All live parts shall be so located as to ensure adequate clearance from any exposed metal covers. If there is likelihood that, through distortion, a metal cover can be brought within 6 mm from a live part, the live part shall be protected by suitable non-hygroscopic insulating material not less than 0.75 mm thick, securely fastened in position.

5 INSULATION OF HANDGRIPS, ETC.

5.1 General. All parts likely to be used for guiding or handling the lawnmower in ordinary service (i.e. with the supply flexible cord energized) shall be made of, or covered with, substantial thickness of durable insulating material* which remains stable over the temperature range -7°C to 77°C and is unaffected by perspiration; provided however that such parts, if of metal, need not be covered by insulating material if they are separated from live parts by double insulation, and are electrically isolated, by at least 250 V grade insulation, from metal parts of the lawnmower which can become alive in the event of the flexible cord being damaged by the cutting blades.

Such parts shall include handgrips, control levers, and those portions of metal handle bars normally handled by the operator.

5.2 Handgrips. Insulated handgrips shall be not less than 225 mm long, unless provided with a substantial flange at the point or points where the handgrip adjoins uninsulated portions of the lawnmower. Material used for the insulation of handgrips shall have a thickness of not less than—

(a) 2 mm at any point which is accessible to the standard test finger; and

(b) 0.75 mm at any other point.

The material shall be resistant to perspiration, oils, greases, weather, sunlight, and shall pass the high voltage test specified in Clause 18.2.

6 GUARDING OF MECHANISM.

6.1 General. All pulleys, sprocket wheels, gears, belts, chains and the like shall be so located or guarded as to avoid the likelihood of danger to persons or damage to the flexible cord.

6.2 Horizontally rotating cutters. Where the cutters or blades rotate about a vertical axis, they shall be so arranged or guarded as to minimize the likelihood of the flexible cord falling into the blades from above.

* Wood is acceptable as insulating material for handles, provided that the portion normally handled by the operator is of sufficient length, and is treated against the absorption of moisture. Wooden handgrips are, however, not acceptable as an insulating covering over a metal support.