AS 4029.1—1994
IEC 896-1:1987
IEC 896-1/Amd.1:1988
IEC 896-1/Amd.2:1990

Australian Standard®

Stationary batteries—Lead-acid

Part 1: Vented type (based on and including the full text of IEC 896-1)

This Australian Standard was prepared by Committee EL/5, Secondary Batteries. It was approved on behalf of the Council of Standards Australia on 3 August 1994 and published on 5 December 1994.

The following interests are represented on Committee EL/5:

Australian Automobile Association
Australian Automotive Aftermarket Association
Australian Electrical and Electronic Manufacturers Association
Australian Lead Development Association
Australian Chamber of Commerce and Industry
Department of Administrative Services — Australian Construction Services
Department of Defence, Australia
Electricity Supply Association of Australia
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL/5 on Secondary Batteries.

This Standard is the result of a consensus among Australian and New Zealand representatives on the Joint Committee to produce it as an Australian Standard.

Apart from the exceptions described below, this Standard is based on and has been reproduced from IEC 896-1, *Stationary lead-acid batteries. General requirements and methods of test*, Part 1: *Vented types* (1987), Amendment No. 1 to IEC 896-1 (1988), and Amendment No. 2 to IEC 896-1 (1990). Amendments Nos 1 and 2 are bound at the end of this Standard. The text affected by an Amendment is marked in the source document with double margin bars.

It is Part 1 of a three-part Standard, Parts 2 and 3 of which are—

(a) AS 4029.2, *Stationary batteries—Lead-acid* Part 2: *Valve-regulated sealed type;* and

(b) AS 4029.3, *Stationary batteries—Lead-acid* Part 3: *Pure lead positive pasted plate type.*

For the purposes of this Australian Standard, the IEC text is modified as follows:

(a) The IEC text is amended, supplemented or replaced as set out in Appendix ZZ. The changes are indicated by a marginal bar against each clause, table or figure affected by a reference to Appendix ZZ.

(b) New Clause 10A, Life on overcharge, and new Clause 17A, Life on overcharge test, have been added to this Standard. Both appear in Appendix ZZ.

(c) References to other publications are replaced by references to Australian Standards as follows:

Reference to International Standard		*Australian Standard*	
IEC		AS	
50	International Electrotechnical Vocabulary	1852	International Electrotechnical Vocabulary
50.151	Chapter 151: Electrical and magnetic devices	1852.151	Electric and magnetic devices
51	Direct acting indicating analogue electrical measuring instruments and their accessories	1042	Direct-acting indicating electrical measuring instruments and their accessories
359	Expression of the performance of electrical and electronic measuring equipment		—
417	Graphical symbols for use on equipment. Index, survey and compilation of the single sheets	1104	Informative symbols for use on electrical and electronic equipment
485	Digital electronic d.c. voltmeters and d.c. electronic analogue-to-digital converters		—

The following Australian documents are referred to in this Standard:

AS

1216 Classification, hazard identification and information systems for dangerous goods
1216.1 Part 1: Classification and class labels for dangerous goods

2149 Starter batteries—Lead-acid

2668 Water for use in secondary batteries

2669 Sulphuric acid for use in lead-acid batteries

2676 Guide to the installation, maintenance, testing and replacement of secondary batteries in buildings
2676.1 Part 1: Vented cells

2700 Colour standards for general purposes

3011 Electrical installations—Secondary batteries installed in buildings
3011.1 Part 1: Vented cells

4086 Secondary batteries for use with stand-alone power systems
4086.1 Part 1: General requirements

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AUSTRALIAN STANDARD

Stationary batteries—Lead acid

Part 1:
Vented type

SECTION ONE—GENERAL

1. **Scope**

This standard is applicable to lead-acid cells and batteries which are designed for service in fixed location (i.e. not habitually to be moved from place to place) and which are permanently connected to the load and to the d.c. power supply. Batteries operating in such applications are called "stationary batteries".

Any type or construction of lead-acid battery may be used for stationary battery applications. This Part 1 of the standard is applicable to vented types only. A Part 2 will be prepared for valve-regulated types.

2. **Object**

The object of this standard is to specify general requirements and the main characteristics, together with corresponding test methods associated with all types and construction modes of lead-acid stationary batteries, excluding valve-regulated types. Recommendations on the use of tests for stationary battery application are given in Table 1. Recommendations relating the type of cell or monobloc to the use of tests are given in Table 11.

Statements and claims of basic performance data by the manufacturer shall correspond to those tests. The tests may also be used for type qualification.

SECTION TWO—GENERAL REQUIREMENTS AND DEFINITIONS

3. **Mechanical strength**

Stationary cells or batteries shall be designed to withstand mechanical stresses during normal transportation and handling. Resistance to earthquakes, if required, shall be particularly specified.

4. **Electrolyte levels**

4.1 Each cell shall be equipped with a device to indicate the minimum and maximum electrolyte levels.