

Australian Standard™

Traction batteries—Lead-acid

Part 1.1: Vented cells—Requirements

This Australian Standard was prepared by Committee EL-005, Secondary Batteries. It was approved on behalf of the Council of Standards Australia on 26 November 2004.
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The following are represented on Committee EL-005:

Australian Automobile Association
Australian Automotive Aftermarket Association
Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Energy Supply Association of Australia
Engineers Australia

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Traction batteries—Lead-acid

Part 1.1: Vented cells—Requirements

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-005 on Secondary Batteries to supersede (in part) AS 2402—1994, *Lead-acid traction batteries*.

AS 2402—1994 has been split into four parts as follows:

Traction batteries—Lead-acid, Part 1.1 Vented cells—Requirements

Traction batteries—Lead-acid, Part 1.2 Vented cells—Installation and usage

Traction batteries—Lead-acid, Part 2.1 Valve-regulated cells—Requirements

Traction batteries—Lead-acid, Part 2.2 Valve-regulated cells— Installation and usage

It is intended that Parts 1.2 and 2.2 will replace the relevant requirements in AS 2359, *Powered industrial trucks*.

In this Standard, the dimensions of traction battery cells, requirements for measuring instruments, rated capacity and the battery test life are based on IEC 254-1, *Lead-acid traction batteries, Part 1: General requirements and methods of test*, and IEC 254-2, *Lead-acid traction batteries, Part 2: Dimensions of cells and terminals and marking of polarity on cells*. Additional requirements not covered by these IEC publications have been included to cover Australian conditions. Acknowledgment is made of the assistance received from BS 2550, *Specification for lead-acid traction batteries*.

The useful life obtained from a battery is also dependent on the performance of the battery charger. Performance requirements for battery chargers for lead-acid batteries are specified in AS 2548.1, *Battery chargers for lead-acid traction batteries—Battery chargers for vented cells*.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA

Australian Standard
Traction batteries—Lead-acid

Part 1.1: Vented cells—Requirements

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for lead-acid batteries of the vented type intended for installation in electric traction vehicles, industrial trucks, mechanical handling equipment, diesel locomotive starting applications, semi-traction applications (e.g. golf buggies and wheelchairs) and other applications where deep cycling is required.

A complete battery consists of one or more self-contained units connected in series or parallel. Each unit consists of individual cells or monoblocs assembled into a battery tray.

NOTE: Recommendations for the design of battery trays are given in Appendix A.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS

- | | |
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| 1349 | Bourdon tube pressure and vacuum gauges |
| 1915 | Electrical equipment for explosive atmospheres—Battery-operated vehicles |
| 2359 | Powered industrial trucks |
| 2359.1 | Part 1: General requirements |
| 2402 | Traction batteries—Lead-acid |
| 2402.2.1 | Part 2.1: Valve-regulated cells—Requirements |
| 2668 | Water for use in secondary batteries |
| 2669 | Sulphuric acid for use in lead-acid batteries |

AS/NZS

- | | |
|--------|---|
| 5000 | Electric cables—Polymeric insulated |
| 5000.1 | Part 1: For working voltages up to and including 0.6/1(1.2)kV |

IEC

- | | |
|---------|--|
| 60051 | Direct acting indicating analogue electrical measuring instruments and their accessories |
| 60051-2 | Part 2: Special requirements for ammeters and voltmeters |

1.3 DEFINITIONS

For the purpose of this Standard, the following definitions apply.

1.3.1 Actual capacity

The quantity of electricity, usually expressed in ampere hours (A.h), that a fully charged battery can deliver for a specific set of operating conditions, including discharge rate, temperature, initial state of charge, age and final voltage.