

Australian Standard[®]

**Electrical equipment for explosive
atmospheres—Battery-operated
vehicles**

This Australian Standard was prepared by Committee EL/14, Electrical Equipment in Hazardous Areas. It was approved on behalf of the Council of Standards Australia on 12 November 1991 and published on 17 January 1992.

The following interests are represented on Committee EL/14:

Australian Coal Association
Australian Electrical and Electronic Manufacturers Association
Australian Institute of Petroleum
Confederation of Australian Industry
Department of Labour, Vic.
Department of Mineral Resources, N.S.W.
Department of Resource Industries, Qld
Electrical Contractors Associations of Australia
Institute of Instrumentation and Control
Insurance Council of Australia
Regulatory authorities (electrical)
Testing interests
WorkCover Authority, N.S.W.

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PREFACE

This Standard was prepared by the Standards Australia Committee on Electrical Equipment in Hazardous Areas, to supersede AS 1915—1983. It is intended for the guidance of manufacturers, users, regulatory authorities and associated interests, and for use with the relevant electrical safety regulations .

The following are the major changes in this edition:

- (a) Amendment to the IP requirements.
- (b) Clarification has been made regarding the application of the Standard.
- (c) Amendment of the requirement for internal earthing connection facilities within flameproof enclosures.

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STANDARDS AUSTRALIA

Australian Standard

Electrical equipment for explosive atmospheres—Battery-operated vehicles

1 SCOPE This Standard applies to battery-operated vehicles (i.e. trucks and tractors) which incorporate a storage battery of the lead-acid type as the source of power, which may be all-electric or electrohydraulic in operation, and which may be used where flammable gases or vapours may be present in the atmosphere. It does not apply to battery-operated vehicles within the scope of AS 2595.1.

The Standard prescribes requirements for the electrical components and those mechanical or hydraulic components which may be capable of producing arcs, sparks, or hot surfaces that will present a fire or explosion hazard in the presence of flammable gases or vapours. It also prescribes the tests to which certain components will be subjected to establish their compliance with this Standard.

Hazards other than the ignition of gases or vapours are excluded from this Standard.

NOTE: Some authorities require that battery-operated vehicles, in addition to complying with this Standard, also comply with AS 2359.1.

2 APPLICATION This Standard is intended for application by designers and manufacturers of battery-operated vehicles. It is also intended for application by certifying authorities in assessing compliance on the basis of type tests.

This Standard does not contain requirements for ensuring that, in production, the equipment continues to comply. However, it is the manufacturer's responsibility to make the routine verifications and tests necessary to ensure that production models continue to comply with the Standard and are not inferior to the prototype or sample submitted for testing.

Likewise this Standard does not include requirements for ensuring that maintenance work is carried out to ensure that equipment, originally manufactured in accordance with this Standard, continues to comply with the Standard. It is the owner's responsibility to ensure that appropriate maintenance is undertaken on a regular basis.

3 REFERENCED DOCUMENTS The documents below are referred to in this Standard:

AS

| | |
|--------|---|
| 1939 | Degrees of protection provided by enclosures for electrical equipment (IP Code) |
| 2359 | Industrial trucks |
| 2359.1 | Part 1: Design and manufacture |
| 2380 | Electrical equipment for explosive atmospheres—Explosion-protection techniques |
| 2380.1 | Part 1: General requirements |
| 2380.2 | Part 2: Flameproof enclosure d |
| 2380.6 | Part 6: Increased safety |
| 2380.7 | Part 7: Intrinsic safety i |
| 2402 | Lead-acid traction batteries |
| 2595 | Electrical equipment for coal mines—Electrical requirements for underground mining machines and accessories |
| 2595.1 | Part 1: Equipment for use in explosive atmospheres |

4 DEFINITIONS For the purpose of this Standard, the definitions given in AS 2380.1 and those below apply.

4.1 Battery container—single unit containing a number of cells.

4.2 Rated capacity (rating)—capacity, in ampere hours, of a cell assigned to it by the manufacturer under specified conditions of discharge.

4.3 Terminal post—lead post projecting through the lid of a cell from which connection is made to the external circuit or to a terminal post of another cell.

4.4 Vent plug—removable plug fitted to the cell cover over the hole used for filling or topping-up, and designed to provide for the escape of gases from the cell while obstructing the passage of acid spray.

5 GROUPING Battery-operated vehicles shall be grouped in accordance with AS 2380.1.

6 TEMPERATURE CLASSIFICATION Battery-operated vehicles shall be classified in accordance with AS 2380.1.