



Electrical installations — Secondary batteries installed in buildings

Part 1: Vented cells



AS 3011.1:2019

This Australian Standard® was prepared by EL-005, Secondary Batteries. It was approved on behalf of the Council of Standards Australia on 9 December 2019.

This Standard was published on 20 December 2019.

The following are represented on Committee EL-005:

- Australasian Fire and Emergency Service Authorities Council
- Australian Industry Group
- Clean Energy Council
- Communications, Electrical and Plumbing Union — Electrical Division
- Consumers Federation of Australia
- CSIRO
- Electrical Compliance Testing Association of Australia
- Electrical Regulatory Authorities Council
- Energy Networks Australia
- Energy Storage Council
- Engineers Australia
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This Standard was issued in draft form for comment as DR AS 3011.1:2019.

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ISBN 978 1 76072 686 7



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Originated as part of AS 2676—1983.
Revised in part and redesignated as AS 3011—1987.
Revised and redesignated as AS 3011.1—1990.
Previous edition 1992.
Third edition 2019.

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Preface

This Standard was prepared by the Standards Australia Committee EL-005, Secondary batteries, to supersede AS 3011.1—1992.

The objective of this Standard is to specify minimum requirements for the installation of vented lead-acid batteries and vented alkaline batteries to ensure safety from fire and electric shock.

The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

Contents

Preface	ii
Introduction	iv
1 Scope and general	1
1.1 Scope	1
1.2 Normative references	1
1.3 Terms and definitions	1
2 General requirements	3
2.1 General	3
2.1.1 Hydrogen emission	3
2.1.2 Alarms	3
2.1.3 Battery accommodation	3
2.1.4 Arrangement of cells	3
2.1.5 Ventilation	3
2.2 Battery room requirements	4
2.2.1 General	4
2.2.2 Battery room layout and floor area	4
2.2.3 Take-off battery terminals and outgoing busbars and cables	4
2.2.4 Inter-tier and inter-row connections	5
2.2.5 Inter-cell connectors	5
2.2.6 Luminaires	5
2.2.7 Location of general purpose outlets	5
2.3 Battery enclosure requirements	5
2.3.1 Enclosure construction	5
2.3.2 Take-off battery terminals and outgoing busbars and cables	5
2.3.3 Battery compartment circuits	6
3 Installation	6
3.1 General	6
3.2 Connections	6
3.3 Protection	6
3.3.1 Overcurrent protection	6
3.3.2 Warning notices	6
3.3.3 Switchgear	6
3.3.4 Earth-leakage detection	6
3.3.5 Main isolating switch	6
3.3.6 Section isolating equipment	7
3.3.7 Fire safety and warning signs	7
Appendix A (normative) Minimum clearances for battery rooms	8
Bibliography	10

Introduction

Both the ampere-hour capacity and voltage of battery installations have increased to the point where some voltages now border on the medium and high voltage range. Even in extra-low voltage installations, the low internal resistances of batteries under short-circuit conditions can cause severe injuries to staff working on a battery or cell, or cause fire and explosion.

Tests have shown that batteries of 24 V d.c. and above may present problems in breaking fault currents and that additional precautions need to be taken to reduce the possibility of accidental short-circuits.

In preparing this Standard, the Committee considered the requirements of both vented lead-acid cells and vented alkaline cells.

Australian Standard®

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1 Scope and general

1.1 Scope

This Standard sets out requirements for the installation of vented lead-acid and vented alkaline secondary batteries with a nominal voltage exceeding 24 V and a capacity exceeding 10 A.h at the 1 h rate of discharge, permanently installed in buildings, structures or premises. This Standard applies to premises with critical power continuity requirements, for example acute care hospitals, sub-station support and black start.

NOTE 1 Refer to AS 2676.1 for guidance on the installation and maintenance of vented secondary batteries.

NOTE 2 This Standard applies to vented cells only. Refer to AS 3011.2 and AS 2676.2 for the installation and maintenance of sealed cells.

NOTE 3 Refer to AS/NZS 3015 for requirements specifically applicable to the design and installation of extra-low voltage (d.c.) power supplies that are used by telecommunications carriers in the provision of public telecommunications networks.

NOTE 4 Refer to AS 5139 for general installation and safety requirements for battery energy storage systems (BESSs).

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

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

AS/NZS 1680.1, *Interior and workplace lighting, Part 1: General principles and recommendations*

AS/NZS 3000, *Electrical installations (known as the Australian/New Zealand Wiring Rules)*

AS/NZS IEC 60947.2, *Low-voltage switchgear and controlgear, Part 2: Circuit-breakers*

AS/NZS IEC 60947.3, *Low-voltage switchgear and controlgear, Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units*

AS/NZS 61439.1, *Low-voltage switchgear and controlgear assemblies, Part 1: General rules*

1.3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

1.3.1

authorized person

person in charge of the premises, or the licensed electrical contractor or electrician or other competent person appointed or selected by the person in charge of the premises to perform certain duties associated with the battery installation on the premises