

Australian Standard<sup>®</sup>

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**Electrical installations —  
Secondary batteries installed in  
buildings**

**Part 2: Sealed cells**

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This Australian Standard was prepared by Committee EL/5, Secondary Batteries. It was approved on behalf of the Council of Standards Australia on 23 December 1991 and published on 16 March 1992.

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The following interests are represented on Committee EL/5:

Australian Automobile Association  
Australian Automotive Aftermarket Association  
Australian Electrical and Electronic Manufacturers Association  
Australian Federation of Consumer Organizations  
Australian Lead Development Association  
Confederation of Australian Industry  
Department of Defence  
Electricity Supply Association of Australia  
Federal Chamber of Automotive Industries  
Institution of Engineers, Australia  
Railways of Australia  
Telecom Australia

Additional interest participating in preparation of Standard:

Civil Aviation Authority

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*This Standard was issued in draft form for comment as DR 90091.*

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First published as AS 3011.2—1992.

PUBLISHED BY STANDARDS AUSTRALIA  
(STANDARDS ASSOCIATION OF AUSTRALIA)  
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 7301 5

## PREFACE

This Standard was prepared by the Standards Australia Committee on Secondary Batteries. It is a statement of minimum requirements and is intended to be suitable for reference in government regulations.

Over the last few years 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.

Recent tests have shown that batteries of 30 V 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 sealed lead-acid cells and sealed alkaline cells.

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## STANDARDS AUSTRALIA

## Australian Standard

## Electrical installations — Secondary batteries installed in buildings

## Part 2: Sealed cells

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE** This Standard sets out requirements for the installation of sealed 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 or on buildings, structures or premises to ensure safety from fire and electric shock.

AS 2676.2 provides guidance on the installation and maintenance of sealed secondary batteries.

This Standard covers sealed cells only. The installation and maintenance of vented cells are covered by AS 3011.1 and AS 2676.1.

NOTE: 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 are given in AS 3015 (Int)—1991, Electrical installations — Extra-low voltage (d.c.) power supplies in public telecommunications networks.

**1.2 REFERENCED DOCUMENTS** The following documents are referred to in this Standard:

AS

1136	Low voltage switchgear and controlgear assemblies
1136.1	Part 1: General requirements
1680	Interior lighting
1680.1	Part 1: General principles and recommendations
1775	Low voltage switchgear and controlgear — Air-break switches, isolators and fuse-combination units (up to and including 1000 V a.c. and 1200 V d.c.)
2676	Guide to the installation, maintenance, testing and replacement of secondary batteries in buildings
2676.1	Part 1: Vented cells
2676.2	Part 2: Sealed cells
3000	SAA Wiring Rules
3011	Electrical installations — Secondary batteries installed in buildings
3011.1	Part 1: Vented cells

**1.3 DEFINITIONS** For the purpose of this Standard, the definitions below apply.

**1.3.1 Accessible, readily** — capable of being reached quickly and without climbing over or removing obstructions, mounting upon a chair, or using a movable ladder, and in any case not more than 2 m above the ground, floor or platform.

**1.3.2 Authorized person** — the person in charge of the premises, or other person appointed or selected by the person in charge of the premises, who performs certain duties associated with the battery installation on the premises.

NOTE: In some states, work on low and medium voltage equipment may be undertaken by licensed personnel only.

**1.3.3 Battery** — a unit consisting of one or more cells connected in a series, parallel or series-parallel arrangement to supply the voltage and current requirements of a connected load.

**1.3.4 Battery enclosure** — an enclosure containing batteries that is suitable for use in an area other than a battery room or an area restricted to authorized personnel.

**1.3.5 Battery room** — a room specifically intended for the installation of batteries.

**1.3.6 Cell** — an assembly of electrodes and electrolytes which constitutes the basic unit of a battery.

**1.3.7 Charging** — an operation during which a battery receives electric energy, which is converted to chemical energy, from an external circuit. The quantity of electric energy is known as the charge.

NOTE: Charge is usually measured in ampere hours.

**1.3.8 Horizontally mounted cell** — a cell designed to operate with its terminals and valves mounted on a vertical face (see Figure 1(a)).

**1.3.9 May** — indicates the existence of an option.

**1.3.10 Monobloc battery** — a secondary battery in which two or more cells are fitted in a multi-compartment container.