AS 2676.1—1990

Australian Standard®

# Guide to the installation, maintenance, testing and replacement of secondary batteries in or on buildings

## Part 1: Vented 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 October 1989 and published on 11 June 1990.

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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 Administrative Services—Australian Construction Services
Department of Defence
Electricity Supply Association of Australia
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# Guide to the installation, maintenance, testing and replacement of secondary batteries in or on buildings

## Part 1: Vented cells

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# PREFACE

This Standard was prepared by the Standards Australia Committee on Secondary Batteries, to partially supersede AS 2676—1983, *Installation and maintenance of batteries in buildings.*

The superseded Standard AS 2676—1983 is to be replaced by the following Standards:

(a) AS 3011.1, *Electrical installations—Secondary batteries installed in buildings*, Part 1: *Vented cells,* which is a statement of minimum requirements and is intended to be suitable for reference in government regulations.

(b) This Standard i.e. AS 2676.1—1990.

(c) A proposed AS 3011.2 to cover sealed cells.

(d) A proposed AS 2676.2 to cover sealed cells.

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 ranges. Even in extra-low voltage installations, short-circuits can cause fire and explosion because of the low internal resistance of batteries.

Tests have shown that batteries of 30 V and above are capable of producing levels of fault current that are difficult to interrupt, and that additional precautions need to be taken to reduce the possibility of accidental short-circuits.

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*(continued)*

STANDARDS AUSTRALIA

# Australian Standard

# Guide to the installation, maintenance, testing and replacement of secondary batteries buildings

## Part 1: Vented cells

## SECTION 1. SCOPE AND GENERAL

**1.1 SCOPE.** This Standard sets out recommended practices for the installation, maintenance, testing, and replacement of vented secondary batteries permanently installed in or on buildings. It is to be read in conjunction with AS 3011, Electrical installations—Secondary batteries installed in buildings, Part 1: Vented cells.

It also provides guidance to determine when batteries should be replaced.

This Standard covers secondary batteries with a nominal voltage of 24 V or greater, and a capacity exceeding 10 A.h at the one-hour rate and includes batteries comprising vented lead-acid cells and alkaline batteries comprising vented cells, (such as nickel-cadmium cells).

This Standard covers requirements for components of the d.c. system of which the battery is a part, where these components comprise an essential part of the d.c. system.

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

AS
1006 Solid stem general purpose thermometers

1136 Low voltage switchgear and controlgear assemblies
1136.1 Part 1: General requirements

1319 Safety signs for the occupational environment

1668 SAA Mechanical Ventilation and Airconditioning Code
1668.1 Part 1: Fire precautions in building with air-handling systems

1680 Code of practice for interior lighting and the visual environment

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.)

2121 SAA Earthquake Code

2184 Low voltage switchgear and controlgear—Moulded-case circuit-breakers for rated voltages up to and including 600 V a.c. and 250 V d.c.

2191 Stationary batteries of the lead-acid Planté positive plate type

2562 Hydrometers—Portable syringe type for lead-acid batteries

2668 Water for use in secondary batteries

2669 Sulphuric acid for use in lead-acid batteries

3000 SAA Wiring Rules

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

3111 Approval and test specification for miniature overcurrent circuit-breakers

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

**1.3.1 Accessories**—items supplied with a battery to facilitate the continued operation of the battery.

NOTE: Such accessories include distilled water in containers, connectors, connecting bolts and nuts, hydrometers and other such items as agreed to by the purchaser and supplier.

**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, to perform certain duties associated with the battery installation on the premises.

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