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Australian Standard 2176–1978

PRIMARY BATTERIES

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

THE FOLLOWING SCIENTIFIC, INDUSTRIAL, GOVERNMENTAL AND CONSUMER organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Electrical Manufacturers Association

Australian Federation of Consumer Organizations

Confederation of Australian Industry

Department of Defence

Melbourne and Metropolitan Board of Works

National Acoustic Laboratories

Railways of Australia Committee

Telecom Australia

This standard, prepared by Committee EL/22, Primary Cells and Batteries, was approved on behalf of the Council of the Standards Association of Australia on 10 April 1978, and was published on 1 July, 1978.

To keep abreast of progress in industry Australian Standards are regularly reviewed. Suggestions for improvement to published standards, addressed to the head office of the Association, are welcomed.

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AUSTRALIAN STANDARD SPECIFICATION

PRIMARY BATTERIES

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PREFACE

This standard was prepared by the Association's Committee on Primary Cells and Batteries as a revision of AS C387 — 1967, Dry Primary Cells and Batteries, which it accordingly supersedes.

It covers those types of batteries which are at present in common use in Australia, specifies the principal requirements for design and construction, and nominates performance characteristics under a class classification system.

The cell designation system used in this standard is based upon that in IEC 86, Primary Batteries. The IEC system of designation makes provision for identifying the electrochemical system used. However, in this standard the designation system does not provide for the identification of the electrochemical system used; instead, the standard has introduced a system of classifying batteries within one particular size in accordance with their ability to pass various tests.

In the area of marking, this standard differs from the IEC requirements in only one major respect. The IEC require batteries to be marked either with the year and month or week of manufacture, which may be in code, or the expiration of a guarantee period in plain language (clear). This standard requires batteries to be marked with a 'use by' date.

In the data sheets covering the different types of battery, the shapes and dimensions used are identical with those in IEC 86 except for one or two batteries. However, the test loads and durations which simulate different applications do not align with corresponding IEC test data, and consequently, the performance values given in the data sheets do not align with the performance levels specified in IEC 86. The reason for this variation is that the majority of battery operated devices in common use in Australia tend to operate at higher currents and for longer periods than those used elsewhere. For example, most lighting devices on the Australian market operate at much greater output levels.

Throughout the standard, variations between the specified requirements and IEC requirements have been explained in Notes.

Appendix A gives advice to traders and consumers on aspects of distribution, storage, use and disposal of batteries. Appendix B provides guidance on the obtaining of information on batteries which are not included herein.

A test to simulate the use of a battery in flash-cube applications has not yet been formulated, nor have performance levels been set for batteries recommended for this application. Study of these matters by the committee is continuing and requirements will be introduced at a later stage.

In the preparation of this standard, reference was made to the following documents:

IEC 86 Primary Batteries

BS 397 Primary Cells and Batteries

Acknowledgement is made of the assistance received from these documents.

In the application of this standard, reference may be necessary to the following standards:

AS 1199 Sampling Procedures and Tables for Inspection by Attributes.

AS 1399 Guide to the Use of AS 1199, Sampling Procedures and Tables for Inspection by Attributes

AS 1852(50) International Electrotechnical Vocabulary — Electrochemistry and Electrometallurgy

IEC 130–3 Connectors for Frequencies below 3 MHz — Battery Connectors

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard Specification for PRIMARY BATTERIES

1 SCOPE. This specification sets out requirements for dry primary cells and batteries which employ the following chemical systems:

(a) Leclanché.
(b) Alkaline manganese dioxide/zinc.
(c) Silver oxide/zinc.
(d) Mercuric oxide/zinc.
(e) Other proprietary combinations.

NOTES:

1. This specification covers batteries employing one of the above chemical systems or a combination of two or more systems. The designation system described in Clause 4 does not identify the chemical system used, but makes provision for batteries with different performance characteristics.
2. For the purpose of this specification, the term 'battery' means the finished product, ready for use, comprising one or more cells.

Standard sizes and terminals are specified as well as some design and structural features. The data sheets forming a part of this specification contain dimensional details of batteries, recommended applications and performance levels. Capacity tests have been prescribed to simulate different applications.

The performance levels and categories specified are intended primarily as a guide to consumers and equipment designers in the identification and selection of batteries to suit their requirements.

NOTE: It is recommended that for contractual purposes account be taken of the normal distribution of values around the nominal values quoted.

This specification does not apply to rechargeable, reserve type or water-activated batteries.

2 APPLICATION. This specification applies to the following main categories of batteries:

(a) Portable lighting and power.
(b) Electronic equipment.
(c) Photographic equipment.
(d) Watches.
(e) Telephone.