

AS 3731.2—1995

IEC 622:1988

IEC 622:1988/Amd.2:1992

IEC 622:1988/Cor.:1992

Australian Standard[®]

**Stationary batteries —
Nickel-cadmium**

Part 2: Valve regulated type

This Australian Standard was prepared by Committee EL/5, Secondary Batteries. It was approved on behalf of the Council of Standards Australia on 29 June 1995 and published on 5 October 1995.

The following interests are represented on Committee EL/5:

Australian Automobile Aftermarket Association
Australian Automobile Association
Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Australian Lead Development Association
Department of Defence, Australia
Electrical Development Association of New Zealand
Electricity Supply Association of Australia
Federal Chamber of Automotive Industries, Australia
Institution of Engineers, Australia
Telstra (Australia)

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standard users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications. This information is supplemented each month by the magazine 'The Australian Standard', which subscribers receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced or stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

Australian Standard[®]

**Stationary batteries —
Nickel-cadmium**

Part 2: Valve-regulated type

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL/5 on Secondary Batteries to supersede AS 3731.2—1989, *Stationary batteries — Nickel-cadmium, Part 2: Sealed type*.

This Standard is the result of a consensus among representatives on the Joint Committee to produce it as an Australian Standard.

This Standard is identical with and has been reproduced from IEC 622:1988, *Sealed nickel-cadmium prismatic rechargeable single cells*, including Amendment No. 2:1992 (which includes Amendment No. 1) and a Corrigendum of August 1992. The Corrigendum and Amendment are bound at the end of this Standard. The text affected by the Amendment is marked in the source document by double marginal bars.

The objective of this Standard is to provide users of valve-regulated nickel-cadmium batteries with specifications covering their construction and performance.

Statements expressed in mandatory terms in Notes to tables and figures are deemed to be requirements of this Standard.

This Standard is Part 2 of the following series:

AS

3731 Stationary batteries—Nickel-cadmium

3731.1 Part 1: Vented type

3731.2 Part 2: Valve-regulated type (this Standard)

For the purposes of this Australian Standard the source text should be modified as follows:

- (a) The words ‘this Australian Standard’ should replace ‘this International Standard’ wherever they appear.
- (b) A full point (.) substitutes for a comma (,) when appearing as a decimal marker.
- (c) The references to international Standards should be replaced by references to the following equivalent Australian or Joint Australian/New Zealand Standards:

<i>Reference to International Standard</i>		<i>Australian or Joint Australian/New Zealand Standard</i>	
IEC		AS	
51	Direct acting indicating analogue electrical-measuring instruments and their accessories	1042	Direct-acting indicating electrical measuring instruments and their accessories
68	Basic environmental testing procedures	1099	Basic environmental testing procedures for electrotechnology
68-2-29	Part 2: Tests. Test Eb and guidance: Bump	1099.2.29	Test Eb—Bump and guidance
410	Sampling plans and procedures for inspection by attributes	—	
517	Graphical symbols for use on equipment. Index, survey and compilation of single sheets	1104	Informative symbols for use on electrical and electronic equipment
485	Digital electronic d.c. voltmeters and d.c. electronic analogue-to-digital converters	—	

CONTENTS

	<i>Page</i>
SECTION ONE – GENERAL	
CLAUSE	
1.1 Scope	1
1.2 Definitions	1
1.3 Measuring instruments	1
SECTION TWO – DESIGNATION AND MARKING	
2.1 Cell designation	2
2.2 Cell termination	3
2.3 Marking	3
SECTION THREE – DIMENSIONS	
3.1 Dimensions	3
SECTION FOUR – ELECTRICAL TESTS	
4.1 Charging procedure for test purposes	4
4.2 Discharge performance	4
4.3 Charge retention	6
4.4 Encurance	6
4.5 Charge acceptance at constant voltage	7
4.6 Overcharge	7
4.7 Safety device operation	7
4.8 Storage	8
SECTION FIVE – MECHANICAL TESTS	
5.1 Bump test (under consideration)	8
SECTION SIX – CONDITIONS FOR APPROVAL AND ACCEPTANCE	
6.1 Type approval	8
6.2 Batch acceptance	9
Amendment No. 2	11
Corrigendum (August, 1992)	14

Originated as AS 3731.2— 1989. Second edition 1995.
--

AUSTRALIAN STANDARD

Stationary batteries—Nickel-cadmiumPart 2:
Valve-regulated type

SECTION ONE—GENERAL

1.1 Scope

This standard specifies tests and requirements for sealed nickel-cadmium prismatic rechargeable single cells.

Note. – In this context “prismatic” refers to cells having rectangular sides and base.

1.2 Definitions

For the purpose of this standard, the following definitions apply.

1.2.1 Sealed cell

A cell which remains closed and does not release either gas or liquid when operated within the limits of charge and temperature specified by the manufacturer. The cell may be equipped with a safety device to prevent dangerously high internal pressure. The cell does not require addition to the electrolyte and is designed to operate during its life in its original sealed state.

1.2.2 Nominal voltage

The nominal voltage of a single sealed nickel-cadmium prismatic rechargeable cell is 1.2 V.

1.2.3 Rated capacity

The quantity of electricity, C_5 in Ah (ampere hours) declared by the manufacturer which a single cell can deliver at the 5 h discharge rate to a final voltage of 1.0 V at 20°C after charging, storing and recharging under the conditions specified in Section Four.

1.3 Measuring instruments

The measuring instruments used for the tests shall be selected to meet the magnitude of the parameters to be measured. Equipment shall be regularly calibrated to ensure that it shall at all times have the degree of accuracy given below.

1.3.1 Voltage measurement

The instruments used for voltage measurement shall be voltmeters having an accuracy class of 0.5 or better as defined in IEC Publication 51 for analogue instruments and IEC Publication 485 for digital instruments.

The resistance of voltmeters shall be at least 1000 Ω/V .