

AS 1881—1986

Reconfirmed 2018

Australian Standard[®]

**ZINC ALLOYS—CASTING
INGOTS AND CASTINGS—
QUALITY REQUIREMENTS**

This Australian Standard was prepared by Committee MT/4, Zinc and Zinc Alloys. It was approved on behalf of the Council of the Standards Association of Australia on 31 October 1985 and published on 6 January 1986.

The following interests are represented on Committee MT/4:

Australian Zinc Development Association
Confederation of Australian Industry
Department of Defence
Diecasting Institute of Australia
Electricity Supply Association of Australia
Federal Chamber of Automotive Industries

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 Standards 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which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.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.

This standard was issued in draft form for comment as DR 82180.

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 1881–1986

**Zinc alloys–Casting ingots and castings–
Quality requirements**

RECONFIRMATION NOTICE

Major stakeholders of this publication have reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 29 August 2018.

NOTES

Australian Standard®

**ZINC ALLOYS—CASTING
INGOTS AND CASTINGS—
QUALITY REQUIREMENTS**

First published (as AS H63 and H64)	1962
AS 1881 first published	1977
Second edition	1986

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

ISBN 0 7262 4020 6

PREFACE

This edition of this standard was prepared by the Association's Committee on Zinc and Zinc Alloys. It provides for the supply of zinc alloys in ingot form for gravity castings and pressure diecastings and for castings made from them.

The scope of this standard was expanded to provide for gravity castings and zinc alloy ingots for their manufacture. The alloy designation adopted in the standard is that used in international standards, but the chemical composition of the diecasting alloys differs slightly from ISO 301, Zinc Alloy Ingots Intended for Casting, to reflect Australian practice; the expression of thallium and indium as a sum total, and the aluminium content of Zn Al 11 Cu 1, in particular, are different.

Appendix A sets out purchasing guidelines, including contractual requirements, and directs attention to matters requiring consideration at the time of enquiry and/or order. Information on mechanical properties to be expected after certain periods of ageing is contained in Appendices B, C and D.

The Committee considered preparation of an Australian standard for the design and manufacture of zinc alloy pressure and gravity diecastings. It recommended that this should proceed, particularly in the light of the discontinuation of the Certizinc Scheme of the Diecasting Institute of Australia, and technical developments both locally and overseas. The Association accepted this recommendation and a standard shall be prepared.

CONTENTS

	<i>Page</i>
SECTION 1. SCOPE AND GENERAL	
1.1 Scope	4
1.2 Application	4
1.3 Referenced Documents	4
1.4 Designation	4
1.5 Interpretation of Specified Limiting Values	4
SECTION 2. ZINC ALLOY INGOTS FOR CASTING	
2.1 Chemical Composition	5
2.2 Freedom from Defects	5
2.3 Identification	5
SECTION 3. ZINC ALLOY CASTINGS	
3.1 Process of Manufacture	6
3.2 Chemical Composition	6
3.3 Condition of Castings on Delivery	6
3.4 Freedom from Defects	6
3.5 Marking	6
APPENDICES	
A Purchasing Guidelines	7
B Properties of Alloys A and B from British Work	10
C Properties of Alloy Zn Al 4, from Australian Work	12
D Mechanical Properties of Casting Alloys	13

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
ZINC ALLOYS—CASTING INGOTS AND CASTINGS—QUALITY REQUIREMENTS

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies quality requirements and conditions of supply for zinc alloys in ingot form for pressure diecasting and gravity casting and for castings made from them.

NOTES:

1. Properties of alloys are given in Appendices B, C and D.
2. Guidelines to purchasers on requirements that must be specified by the purchaser and those that must be agreed upon at the time of enquiry and/or order are given in Appendix A.

1.2 APPLICATION. Zinc alloy ingots shall comply with the relevant requirements of Section 1 and with the requirements of Section 2 for the designated alloy.

Castings shall comply with the relevant requirements of Section 1; requirements of Section 3 will apply for castings made from the designated alloy.

1.3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1242	Zinc Ingot
AS 1329	Methods for the Analysis of Zinc and Zinc Alloys
AS 1874	Aluminium Ingots and Aluminium Alloy Ingots and Castings
AS 2347	Method for the Sampling of Zinc Metal and Zinc Alloys for Chemical Analysis
AS 2706	Numerical Values—Rounding and Interpretation of Limiting Values
BS 1004	Zinc Alloys for Die Casting and Zinc Alloy Die Castings.

1.4 DESIGNATION.

1.4.1 General. Zinc alloy designation shall include the following:

- (a) The number of this Australian standard, i.e. AS 1881.
- (b) Chemical symbols and figures indicating the alloying elements and their approximate mean levels.

1.4.2 Dimensionally stabilized castings. When dimensionally stabilized castings are required, the letter 'S' in brackets shall be added to the alloy designation.

Examples of designation: AS 1881/Zn Al 4 Cu 1, AS 1881/Zn Al 4 (S).

1.5 INTERPRETATION OF SPECIFIED LIMITING VALUES. For the purpose of assessing compliance with this standard, the specified limiting values herein shall be interpreted in accordance with the 'rounding method' described in AS 2706, i.e. the observed or calculated value shall be rounded to the same number of figures as in the specified limiting value and then compared with the specified limiting value. For example, for specified limiting values of 2.5, 2.50, and 2.500, the observed or calculated value would be rounded respectively to the nearest 0.1, 0.01, or 0.001.

For examples of interpretation of specified values in accordance with the rounding method, see AS 2706, Appendix B.