

AS 1228—1997

Australian Standard[®]

Pressure equipment—Boilers

This Australian Standard was prepared by Committee ME/1, Pressure Equipment. It was approved on behalf of the Council of Standards Australia on 17 January 1997 and published on 5 July 1997.

The following interests are represented on Committee ME/1:

A.C.T. WorkCover
Australasian Institute of Engineering Inspection
Australian Aluminium Council
Australian Building Codes Board
Australian Chamber of Commerce and Industry
Australian Institute of Energy
Australian Institute of Petroleum
Australian Institute of Pressure Equipment Engineers
Australian Liquefied Petroleum Gas Association
Boiler and Pressure Vessel Manufacturers Association of Australia
Bureau of Steel Manufacturers of Australia
Department of Industrial Affairs, S.A.
Department of Labour, New Zealand
Department of Training and Industrial Relations, Qld
Electricity Corporation of New Zealand
Electricity Supply Association of Australia
Heavy Engineering Research Association, New Zealand
Institute of Metals and Materials, Australia
Institution of Engineers, Australia
Insurance Council of Australia
Metal Trades Industry Association of Australia
National Association of Testing Authorities, Australia
New Zealand Engineering Federation
New Zealand Petrochemical Users Group
New Zealand Timber Industry Federation
Victorian WorkCover Authority
Welding Technology Institute of Australia
WorkCover, N.S.W.
Work Health Authority, N.T.
Workplace Standards Authority, Tas.
Worksafe, Western 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 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which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.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 96030.

AS 1228—1997

Australian Standard[®]

Pressure equipment—Boilers

Originated as part of AS B31—1931.
Fourth edition AS 1228—1990.
AS 1797—1986 and AS 1228—1990 revised,
amalgamated and designated AS 1228—1997.

Incorporating:
Amdt 1—1998

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

ISBN 0 7337 1006 9

PREFACE

This Standard was prepared by the Standards Australia/New Zealand Standards Committee ME/1 on Pressure Equipment.

The objective of this Standard is to combine the existing steam and hot water boiler Standards AS 1228—1990 and AS 1797—1986 respectively into a new Standard.

As a result of a consensus amongst representatives of the Joint Committee, it was decided to produce it as an Australian Standard.

Users of this Standards are reminded that it has no legal authority in its own right, but may acquire legal standing in one or more of the following circumstances:

- (a) Adoption by a government or other authority having jurisdiction.
- (b) Adoption by a purchaser as the required standard of construction when placing a contract.
- (c) Adoption where a manufacturer states that a boiler is in accordance with this Standard.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

Statements expressed in mandatory terms in notes to figures are deemed to be requirements of this Standard.

© 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, 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.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	5
1.2 APPLICATION	5
1.3 REFERENCED DOCUMENTS	5
1.4 DEFINITIONS	5
1.5 DESIGNATION	11
1.6 VALVES, FITTINGS AND BOILER INSTALLATION	11
1.7 RATING	11
1.8 RESPONSIBILITIES	11
SECTION 2 MATERIALS AND DESIGN STRENGTHS	
2.1 MATERIALS	12
2.2 DESIGN STRENGTHS	38
2.3 DESIGN LIFETIME	43
SECTION 3 DESIGN	
3.1 DESIGN CRITERIA	44
3.2 CYLINDRICAL SHELLS, DRUMS AND HEADERS SUBJECT TO INTERNAL PRESSURE	44
3.3 DISHED ENDS SUBJECT TO INTERNAL PRESSURE	65
3.4 RECTANGULAR SECTION HEADERS	73
3.5 HEADER ENDS	76
3.6 PRESSURE PARTS OF IRREGULAR SHAPE	79
3.7 TUBES AND INTEGRAL PIPES	79
3.8 STRUCTURAL ATTACHMENTS TO TUBES	82
3.9 INSPECTION OPENINGS	87
3.10 STAYS, STIFFENERS AND SUPPORTED SURFACES FOR FIRE-TUBE AND MISCELLANEOUS BOILERS	96
3.11 TUBES AND TUBE PLATES FOR FIRE-TUBE AND MISCELLANEOUS BOILER	128
3.12 FURNACES, REVERSAL CHAMBERS AND FIREBOXES OF CYLINDRICAL FORM SUBJECT TO EXTERNAL PRESSURE	132
3.13 BOILER SETTINGS	145
3.14 BRANCHES AND STUDDED CONNECTIONS	145
SECTION 4 MANUFACTURE AND WORKMANSHIP	
4.1 PRESSURE PARTS	169
4.2 WELDING	177

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-