under Revision See DR93291

Superseded by AS/NZS 2544:1995

AS 2544—1982
UDC 669.131.6 : 621.643.4

Australian Standard 2544–1982

GREY IRON PRESSURE PIPES AND FITTINGS

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

STANDARDS ASSOCIATION OF AUSTRALIA SYDNEY LIBRARY

J

currently in preview, click buy full versi

This Australian standard was prepared by Committee WS/16, Cast Iron Pressure Pipes and Fittings. It was approved on behalf of the Council of the Standards Association of Australia on 1 April 1982 and published on 9 August 1982.

The following interests were represented on the committee responsible for the preparation of this standard:

Australian Gas Association

Brisbane City Council

Confederation of Australian Industry

Department of Housing and Construction

Department of Public Works, N.S.W.

Engineering and Water Supply Department, S.A.

Gas and Fuel Corporation of Victoria

Hunter District Water Board

Institution of Engineers, Australia

Metal Trades Industry Association of Austra[illegible]

Melbourne and Metropolitan Board of W[illegible]rks

Metropolitan Water Sewerage and D[illegible]inage Board, N.S.W.

Metropolitan Water Supply Sewe[illegible] and Drainage Board, W.A.

Queensland Water Resour[illegible]s Commission

State Rivers and Wate[illegible]pply Commission, Vic.

To keep [illegible]reast of progress in industry, Australian standards are subject to continuous review and are kept [illegible]-to-date by the issue of amendments or new editions as necessary. It is important therefore that standards us[illegible]s ensure that their standards are up-to-date. Full details of all SAA publications will be found in the Annual List of Australian Standards; these details are supplemented by listings in the SAA monthly journal 'The Australian Standard'. Information on the Annual List and 'The Australian Standard' may be obtained from any sales office of the Association, where details are also available of the current status of individual standards. Suggestions for improvements to published standards, addressed to the head office of the Association, are welcomed.

This standard was issued in draft form for comment as DR 79088.

urrently in preview, click buy full vers

AUSTRALIAN STANDARD

GREY IRON PRESSURE PIPES AND FITTINGS

AS 2544—1982

First published (as AS A145—Pipes)	1965
Revised	1970
Revised and issued as AS 1723	1975
First published (as AS A146—Fittings).. ..	1965
Revised	1970
Revised and issued as AS 1488	1974
AS 2544 first published	1982

0 AUG 1982

PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.

STANDARDS ASSOCIATION OF AUSTRALIA

ISBN 0 7262 2555 X

currently in preview, click buy full version

PREFACE

This standard was prepared by the Association's Committee on Cast Iron Pressure Pipes and Fittings as both a revision and a combination of AS 1723—1975, Centrifugally Cast Grey Iron Pressure Pipes (Excluding Pipes with Bolted Gland Joints), and AS 1488—1974, Cast Grey Iron Fittings for Pressure Pipes (Excluding Bolted Gland Joints). It was considered that grey iron pressure pipes and fittings should be incorporated in the one standard for ease of reference. Both of the aforementioned standards are superseded by this standard.

The changes to AS 1723 are basically editorial to cover amalgamation with AS 1488 which in turn has been extensively revised in order to specify only those fittings which are most commonly used in the water supply industry.

To achieve this rationalization, the variety of fittings has been reduced in line with international standards practice, and it is anticipated that economies will result accordingly throughout the industry. Details of fittings not dealt with by this standard must be specified by the purchaser.

As Class B and D fittings specified in AS 1488 are not commonly used with water supply pressure pipes, only Class C fittings from that standard are included in this standard.

Fittings dealt with by this standard are intended primarily for use with water supply pressure pipes having compatible outside diameters, but can be used with other pressure pipes by means of suitable adaptors. Tables in this standard relate only to the dimensions of the bodies and spigot ends of fittings.

This standard sets out manufacturing requirements and dimensions for pipes and fittings. The hydrostatic test pressures specified in Clause 5.3 are intended primarily to detect casting flaws and bear no relation to safe working pressures for the pipes or fittings. As stated in the Foreword, no attempt has been made to relate wall thickness of pipes and fittings to any particular working pressure.

The Association acknowledges with gratitude the work done by the Melbourne and Metropolitan Board of Works in the preparation of the drawings and tables incorporated in this standard.

© Copyright — STANDARDS ASSOCIATION OF AUSTRALIA 1982
Users of standards are reminded that copyright subsists in all SAA publications. No part of this publication may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing of the Standards Association of Australia.

currently in preview, click buy full version

CONTENTS

currently in preview, click buy full version

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
GREY IRON PRESSURE PIPES AND FITTINGS

FOREWORD

The necessary thickness for cast grey iron pipes and fittings depends on several factors including the following:

(a) The internal pressure to which the pipes and fittings are likely to be subjected, including pressure due to water hammer.

(b) The external loads expected to be applied to the pipes and fittings when laid, depending on the depth of the pipeline in the ground and other pipelaying conditions.

(c) Stresses due to expansion and contraction.

(d) The stresses incurred during handling of the pipe and fittings.

(e) Any necessary allowance for corrosion.

Because the effect of many of these factors cannot be precisely anticipated, this standard does not attempt to relate the specified thickness of the pipe and fitting to particular internal working pressures.

It is the responsibility of the designer of the pipeline to evaluate the effect of the prevailing factors and to ensure that pipes and fittings manufactured to this standard are suitable for the proposed application. Fittings of higher strength may be achieved by the use of a higher grade of cast iron or greater wall thickness.

currently in preview, click buy full version

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for grey iron pressure pipes centrifugally cast in metal moulds and grey iron fittings of nominal sizes up to and including DN 600.

The pipes and fittings are intended primarily for the conveyance of water under pressure, but they may be used for the conveyance of sewage or other fluids.

This standard specifies three classes of pipe on the basis of wall thickness and one class of fitting, but the standard does not imply any correlation between the wall thicknesses specified and any particular working pressure.

NOTES:

1. Guidelines to purchasers on requirements that must or may need to be agreed upon at the time of the enquiry or order, are detailed in Appendix A.
2. Cast grey iron fittings complying with this standard are compatible with centrifugally cast ductile iron pipes manufactured in accordance with AS 2280.
3. Purchasers are advised to check with the manufacturer as to the availability of grey iron pipes complying with this standard. See Appendix A, Paragraph A3 (a).
4. Nominal size 525 is not a standard cast iron pipe size in Australia, and therefore is not included in pipe tables.

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

AS 1111	ISO Metric Hexagon Commercial Bolts and Screws
AS 1315	Specification and Methods of Test for Portland Cement
AS 1391	Methods for Tensile Testing of Metals
AS 1465	Dense Natural Aggregates for Concrete
AS 1646	Rubber Joint Rings for Water Supply, Sewerage and Drainage Purposes
AS 1816	Method for Brinell Hardness Test Part 1—Testing of Metals
AS 1830	Grey Iron Castings
AS 2129	Flanges and Bolting for Pipes, Valves and Fittings
BS 3148	Tests for Water for Making Concrete

1.3 DEFINITIONS. For the purpose of this standard, the following definitions apply:

1.3.1 Bulkhead testing condition — a condition of testing for a pipe or fitting whereby a test machine is used to anchor and seal the joints on the pipe or fitting being tested.

1.3.2 Coating — a corrosion-inhibiting medium applied to the external surface of a pipe or fitting.

1.3.3 Effective length — the overall length of a pipe or fitting measured along its centreline, but excluding the depth of any socket(s).

1.3.4 Fettling — the cleaning of castings, removal of fins, gates and the like, by chipping, grinding or other mechanical means.

1.3.5 Fitting — any casting intended for connection to a pressure pipeline, e.g. bend, cap, connector, plug, taper, tee. (See Appendix B for symbols for fittings.)

1.3.6 Free-end testing condition — a condition of testing for a flanged pipe or fitting whereby the flanged end or ends under test are fitted with a blanking piece without external restraint.

1.3.7 Lining — a medium applied to the internal surface of a pipe or fitting.

1.3.8 Mortar — cement mortar consisting of portland cement, inert aggregates and water.

1.3.9 Nominal size — the approximate internal diameter of a pipe or fitting and represented by the symbols DN and dn.

1.3.10 Test sample — a portion of material or a group of items selected from a batch or consignment by a sampling procedure.

1.3.11 Test specimen — a portion of material or a single item taken from the test sample for the purpose of applying a particular test.

1.3.12 Test piece — a prepared piece for testing, made from a test specimen by some mechanical operation.

1.4 CLASS DESIGNATION. Grey iron pipe shall be designated Class B, C or D on the basis of wall thickness (see Table 6.1).

currently in preview, click buy full version

COPYRIGHT