

WITHDRAWN TX
OCTOBER 1974

AS 1724, Part 2—1983
UDC [621.643.2+621.643.06]-034.13

Australian Standard 1724, Part 2—1983

GREY IRON PRESSURE PIPES AND FITTINGS WITH BOLTED GLAND JOINTS Part 2—SOFT METRIC SERIES FOR MAINTENANCE PURPOSES



STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

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 19 April 1983 and published on 5 September 1983.

The following interests are represented on Committee WS/16:

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 Australia
Melbourne and Metropolitan Board of Works
Metropolitan Water Sewerage and Drainage Board, N.S.W.
Metropolitan Water Authority, W.A.
Queensland Water Resources Commission
State Rivers and Water Supply Commission, Vic.

To keep abreast of progress in industry, Australian standards are subject to continuous 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 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.

AUSTRALIAN STANDARD

**GREY IRON PRESSURE PIPES AND
FITTINGS WITH BOLTED GLAND JOINTS**

Part 2

**SOFT METRIC SERIES FOR
MAINTENANCE PURPOSES**

AS 1724, Part 2—1983

First published1983

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

ISBN 0 7262 3059 6

PREFACE

This standard was prepared by the Association's Committee on Cast Iron Pressure Pipes and Fittings at the request of the Australian Gas Association of Australia. Its purpose is to provide for the continued use, for maintenance purposes, of pipes and fittings with bolted gland joints which were previously covered in the inch-series standards AS A145 and AS A146, but which were not provided for in the ISO metric version of those standards published as AS 1724. This standard forms Part 2 of AS 1724, and it is intended that at a future date the existing AS 1724 be re-published as Part 1.

Pipes in this standard are classified according to wall thickness; fittings are provided in only one class.

Fittings dealt with are intended primarily for use with gas supply pressure pipes having compatible outside diameters, but can be used with other pressure pipes by means of suitable adaptors. Details of the bolted gland joint most commonly used for this purpose are included.

The hydrostatic test pressures specified in Clause 3.8 are intended for the pipes or fittings. As stated in the Foreword no attempt has been made to relate wall thickness of pipes or fittings to any particular working pressure.

©Copyright — STANDARDS ASSOCIATION OF AUSTRALIA 1983

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.

CONTENTS

	<i>Page</i>
FOREWORD	5
SECTION 1. SCOPE AND GENERAL	
1.1 Scope	6
1.2 Referenced Documents	6
1.3 Definitions	6
1.4 Class Designation	6
SECTION 2. MANUFACTURE AND FINISH	
2.1 Quality of Metal	7
2.2 Mode of Casting	7
2.3 Heat Treatment of Pipes	7
2.4 Workmanship and Finish	7
SECTION 3. INSPECTION AND TESTING	
3.1 Inspection	8
3.2 Tests of Metal	8
3.3 Test Specimens for Tensile and Hardness Testing	8
3.4 Frequency of Testing	8
3.5 Tensile Strength	8
3.6 Hardness	8
3.7 Retests for Tensile Strength and Hardness	8
3.8 Hydrostatic Pressure Tests	9
SECTION 4. JOINTS	
4.1 Bolted Gland Joints	12
4.2 Flange Joints	12
4.3 Proof Load Testing of Bolts	12
4.4 Gaskets	12
SECTION 5. DIMENSIONS AND TOLERANCES ON PIPES	
5.1 Dimensions	13
5.2 Tolerances on Dimensions and Mass	13
SECTION 6. DIMENSIONS AND TOLERANCES ON FITTINGS	
6.1 Dimensions	14
6.2 Tolerances on Dimensions and Mass	14
DIMENSIONAL TABLES	
6.1 Spigots and Sockets for Bolted Gland Joints	15
6.2 Gland Rings for Bolted Gland Joints	16
6.3 Tee-bolts and Nuts for Bolted Gland Joints	17
6.4 Rubber Gaskets for Bolted Gland Joints.....	18
6.5 Bends	19
6.6 Equal and Unequal Tees	20
6.7 Tapers—Concentric and Offset	21
6.8 Collars	22
6.9 Connector Fittings	22
6.10 Caps	23
6.11 Plugs	23
6.12 Syphon—Large Type	24
6.13 Syphon—Small Type	25
SECTION 7. COATING	
7.1 General	26
7.2 Coatings	26

	<i>Page</i>
SECTION 8. MARKING	
8.1 General	27
8.2 Pipes	27
8.3 Fittings	27
APPENDICES	
A Purchasing Guidelines	28
B Standard Flanges	30
C Imperial Flanges	31
D Symbols	32

STANDARDS ASSOCIATION OF AUSTRALIA**Australian Standard****for****CAST IRON PRESSURE PIPES AND FITTINGS WITH BOLTED GLAND JOINTS****PART 2—SOFT METRIC SERIES FOR MAINTENANCE PURPOSES****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.
- (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 forecast, 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.

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. Provision is also made for flanged fittings.

The dimensions of all pipes and fittings are such as will make them directly compatible with similar products previously manufactured to Australian standards expressed in imperial units.

The pipe and fittings specified in this standard are particularly intended for the maintenance of existing installations.

Three classes of pipe are specified on the basis of wall thickness and one class of fitting, but the standard does not imply any correlation between the wall thickness 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. Purchasers are advised to check with the manufacturer as to availability of grey iron pipes complying with this standard (see Appendix A, Paragraph A3.1).

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

AS 1110	ISO Metric Hexagon Precision Bolts and Screws
AS 1111	ISO Metric Hexagon Commercial Bolts and Screws
AS 1112	ISO Metric Hexagon Nuts, Including Thin Nuts, Slotted Nuts and Castle Nuts
AS 1205	Structural Steels—Weather-resistant Weldable Grades
AS 1275	Metric Screw Threads for Fasteners (based on ISO recommendations)
AS 1391	Methods for Tensile Testing of Metals
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 1831 Spheroidal or Nodular Graphite Iron Castings

AS 1832 Malleable Iron Castings

AS 2129 Flanges for Pipes, Valves and Fittings

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

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

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

1.3.11 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 5.1).