

AS 1646—1992 Elastomeric seals for waterworks
purposes 21pp FF

Specifies performance and, where these are not appropriate, prescriptive requirements for seals, used in pipeline systems which convey aqueous liquids with temperatures of less than 50°C. The range of seal hardness is between 36 IRHD and 85 IRHD. The seals are manufactured from polychloroprene (CR), ethylene-propylene terpolymers (EPDM), polyisoprene rubber (IR), nitrile-butadiene rubber (NBR), natural rubber (NR), and styrene-butadiene rubber (SBR). Acceptance criteria are given for seals with defined imperfections. The appendices include alternative methods for the determination of the rate of compression stress relaxation and seal hardness.

Committee WS/10: Supersedes AS 1646—1987: Draft for Comment DR 91086.
Publication date 1992-07-20: ISBN 0 7262 7532 8.

1992 ED.

91086
AS 1646—1987

Standards

Association of
Australia



Australian Standard® 1646—1987

RUBBER JOINT RINGS FOR WATER SUPPLY, SEWERAGE AND DRAINAGE PURPOSES



This Australian Standard was prepared by Committee WS/10, Flexible Jointing Gaskets. It was approved on behalf of the Council of the Standards Association of Australia on 7 November 1987 and published on 1 December 1987.

The following interests are represented on Committee WS/10:

Clay Pipe Manufacturers' Association of N.S.W.
Confederation of Australian Industry
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
Melbourne and Metropolitan Board of Works
Plastics Institute of Australia Incorporated
Queensland Joint Committee
Rubber rings manufacturers
Rural Water Commission (Victoria)
Water Board, Sydney

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 SAA publications will be found in the Catalogue of SAA Publications; this information is supplemented each month by SAA's journal '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which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.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 the Association, 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.

AUSTRALIAN STANDARD

**RUBBER JOINT RINGS FOR
WATER SUPPLY, SEWERAGE
AND DRAINAGE PURPOSES**

AS 1646—1987

First published as AS A139	1964
(endorsement of BS 2494—1955)	
Second edition	1972
Revised and redesignated AS 1646	1974
Second edition	1984
Third edition	1987

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

ISBN 0 7262 4787 1

PREFACE

This Standard was prepared by the Association's Committee on Flexible Jointing Gaskets and supersedes AS 1646—1984. The Standard applies to rings made from vulcanized natural rubber and a selected range of synthetic rubbers intended for the jointing of pipes for water supply, sewerage and drainage purposes.

The Standard sets out compositions and physical properties for these materials, compliance with which is known to give satisfactory service in water supply, sewerage and drainage services.

It should be recognized however, that, when rings are intended for use where the likelihood of microorganism attack is high special precautions may need to be taken. This Standard covers rubber rings incorporating root growth inhibitor and these are intended only for sewerage and drainage purposes.

RINGS CONTAINING ROOT GROWTH INHIBITOR SHALL NOT BE USED IN WATER SUPPLY SYSTEMS.

The root growth inhibitor selected should aim to protect rubber ring joints against the action of the roots of all plant species, to have no adverse effect upon persons handling such rings, and to avoid adverse effects on any sewage treatment process or the life of the ring itself under service conditions.

These criteria should be applied in a practical way taking account of existing test results and other information available on the characteristics of the inhibitor.

In addition to a number of minor editorial and technical changes, this Standard differs from the previous edition in the following major respects:

- (a) The quality assurance provisions of Appendices A and G have been updated.
- (b) Requirements for the measurement of ring hardness, compression set, compression stress relaxation and low temperature compression set have been upgraded.

© Copyright — STANDARDS ASSOCIATION OF AUSTRALIA 1987

Users of Standards are reminded that copyright subsists in all SAA publications. Except where the Copyright Act otherwise allows, 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. Requests for permission should be directed to the Head Office of the Association. Where such requests relate to the reproduction of the whole or a substantial part of any Standard, permission may be conditional on an appropriate royalty payment.

CONTENTS

	<i>Page</i>
SECTION 1. SCOPE AND GENERAL	
1.1 SCOPE	4
1.2 REFERENCED DOCUMENTS	4
1.3 DEFINITIONS	4
1.4 TOLERANCES ON DIMENSIONS	4
SECTION 2. MATERIALS AND COMPOSITION	
2.1 MATERIAL	5
2.2 COMPOSITION OF RINGS	5
SECTION 3. PROPERTIES OF RUBBER MATERIALS	
3.1 GENERAL	7
3.2 HARDNESS	7
3.3 TENSILE STRENGTH AND ELONGATION AT BREAK	7
3.4 COMPRESSION SET	7
3.5 ACCELERATED AGEING	7
3.6 WATER ABSORPTION	7
3.7 LIQUID IMMERSION	7
3.8 OZONE RESISTANCE	7
3.9 COMPRESSION STRESS RELAXATION	7
SECTION 4. PROPERTIES OF RUBBER RINGS	
4.1 CONSTRUCTION AND WORKMANSHIP	9
4.2 RING HARDNESS	9
4.3 LOW TEMPERATURE COMPRESSION SET TEST	9
4.4 JOINS	9
4.5 DEFECT CLASSIFICATION	9
SECTION 5. MARKING AND PACKAGING	
5.1 MARKING	10
5.2 PACKAGING AND LABELLING	10
5.3 STORAGE AND HANDLING OF RINGS	10
APPENDICES	
A PURCHASING GUIDELINES	11
B DETERMINATION OF RING HARDNESS	12
C ROOT GROWTH INHIBITOR	18
D DETERMINATION OF COMPRESSIVE STRENGTH RELAXATION—REFEREE METHOD	19
E DETERMINATION OF COMPRESSIVE STRENGTH RELAXATION—ALTERNATIVE METHOD	22
F TESTING OF JOINS IN RINGS	24
G DETERMINATION OF COMPLIANCE OF A LOT	25
H HANDLING, PACKING AND TRANSPORTING RUBBER RING SAMPLES FOR ASSESSMENT AFTER SERVICE USE	26

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
-