Australian Standard™

Elastomeric seals for waterworks purposes

Part 3: Material requirements for pipe joint seals used in water and wastewater applications with the exception of natural rubber and polyisoprene compounds

Standards Australia

This Australian Standard was prepared by Committee WS/10, Flexible Jointing Gaskets. It was approved on behalf of the Council of Standards Australia on 31 March 2000 and published on 28 April 2000.

The following interests are represented on Committee WS/10:

Australasian Plastics and Rubber Institute

Australian Association of Certification Bodies

Australian Chamber of Commerce and Industry

Australian Industry Group

Concrete Pipe Association of Australasia

Master Plumbers' Association of Queensland

New Zealand Contractors Federation

Plastics and Chemicals Industries Association Incorporated

Rubber Manufacturers Association of Australasia

Water Services Association of Australia

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WS/10, Flexible Jointing Gaskets, to supersede, in part, AS 1646—1992, *Elastomeric seals for waterworks purposes*.

This Standard is the result of a consensus among Australian and New Zealand representatives on the Joint Committee to produce it as an Australian Standard.

The objective of this Standard is to set out requirements for a wide range of seals used in the water and sewage industries including the material requirements for specific applications.

AS 1646 is a suite of Standards that covers elastomeric seals. To date the suite is comprised of the following:

AS		
1646	Elastomeric seals for waterworks	
1646.1	Part 1:	General requirements
1646.2	Part 2:	Material requirements for pipe joint seals used in water and waste water applications—Specified by prescriptive formulation
1646.3	Part 3:	Material requirements for pipe joint seals used in water and waste water applications with the exception of natural rubber and polyisoprene compounds (this Standard)

This Standard takes cognizance of BS EN 681-1:1996 *Elastomeric seals—Material requirements for pipe joint seals used in water and drainage applications*, Part 1: *Vulcanized rubber*, Deviations have been made from the original text of BS EN 681-1:1996 including the addition of an Appendix to meet local requirements.

The previous edition of AS 1646 has been retained and amended, and incorporated into Parts 1 and 2, significantly, for its valuable information on natural rubber.

This Standard necessarily deals with existing conditions, but is not intended to discourage innovation or to exclude materials, equipment and methods which may be developed in future. Revisions will be made from time to time in view of such developments and amendments to this edition will be made only when absolutely necessary.

Where possible the AS 1646 suite of Standards (Parts 1 to 3) makes reference to ISO Standards, which have been taken into consideration at the time of preparation of this Standard.

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

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Elastomeric seals for waterworks purposes

Part 3: Material requirements for pipe joint seals used in water and wastewater applications with the exception of natural rubber and polyisoprene compounds

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for synthetic elastomeric materials used in vulcanized seals with the exception of natural rubber and polyisoprene compounds for–

(a) cold potable water supply (up to 50°C);

(b) hot potable and non-potable water supply (up to 110°C);

(c) drainage, sewerage and rainwater systems (continuous flow up to 45°C and intermittent flow up to 95°C);

The different designations of seals specified are defined according to their type, application and requirements (see Table 4.1).

General requirements for finished joint seals are also given. Any additional requirements called for by the particular application are specified in the relevant product Standards taking into account that the performance of pipe joints is a function of the seal material properties, seal geometry and pipe joint design.

This Standard should be used, where appropriate, with product Standards that specify performance requirements for joints.

This Standard is applicable to joint seals for all pipeline materials, including iron, steel, clay, fibre cement, concrete reinforced concrete, plastics and glass-reinforced plastics; and elastomeric components of composite or non-composite seals.

In the case of composite seals for materials of hardness ranges from 76 IRHD to 96 IRHD, the requirements for elongation at break, compression set and stress relaxation apply only when the material is participating in the sealing function, or the long-term stability of the seal.

Joint seals made with an enclosed void as part of their design are included in the scope of this Standard.

Means for demonstrating compliance with this Standard are given in Appendix A.

1.2 REFERENCED DOCUMENTS

AS

1199 Sampling procedures and tables for inspection by attributes

1646 Elastomeric seals for waterworks purposes

1646.1 Part 1: General requirements

1646.2 Part 2: Material requirements for pipe joint seals used in water and wastewater applications—Specified by prescriptive formulation