

Australian Standard™

**Elastomeric seals for waterworks
purposes**

**Part 4: Material requirements for pipe
joint seals used in water and wastewater
applications—Thermoplastic elastomers
and vulcanizates**



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The following are represented on Committee WS-010:

Australasian Plastics and Rubber Institute
Australian Chamber of Commerce and Industry
Australian Industry Group
Certification Interests (Australia)
Plastics Industry Pipe Association of Australia
Rubber Manufacturers Association of Australasia
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PREFACE

This Standard was prepared by the Standards Australia Committee WS-010, Flexible Jointing Gaskets

The objective of this Standard is to set out requirements for thermoplastic elastomer and thermoplastic vulcanizate seals used in water and wastewater applications, including the material requirements for specific applications.

This Standard complements the AS 1646 suite of Standards that cover elastomeric seals for water and wastewater applications. The suite is comprised of the following:

AS

- 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
- 1646.3 Part 3: Material requirements for pipe joint seals used in water and wastewater applications with the exception of natural rubber and polyisoprene compounds
- 1646.4 Part 4: Material requirements for pipe joint seals used in water and wastewater applications—Thermoplastic elastomers and vulcanizates (this Standard)

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This Standard is based on EN 681-2:2000, *Elastomeric seals—Materials requirements for pipe joint seals used in water and drainage applications, Part 2: Thermoplastic elastomers*.

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

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FOREWORD

Part 4 of AS 1646 has been prepared in response to requests from those sections of the pipeline industry that supply thermoplastic elastomers and vulcanizates for pipe joint seals for use in water and wastewater applications.

This Standard is to be used, where appropriate, with product Standards that specify performance requirements for joints and other sealing elements.

Seals and pipe joints using thermoplastic elastomers and vulcanizates have to be designed and tested to take into account the different requirements compared with those specified for thermosetting elastomers in AS 1646.2 or AS 1646.3 of this suite of Standards.

STANDARDS AUSTRALIA

Australian Standard Elastomeric seals for waterworks purposes

Part 4: Material requirements for pipe joint seals used in water and wastewater applications—Thermoplastic elastomers and vulcanizates

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for thermoplastic elastomers and vulcanizates for moulding seals used in joints of—

- (a) thermoplastic piping systems for non-pressure waste discharge (intermittent flow up to 95°C) inside buildings;
- (b) thermoplastic piping systems for non-pressure underground drainage and sewerage (continuous flow up to 45°C and intermittent flow up to 95°C); and
- (c) thermoplastic rainwater piping systems.

General requirements for finished joint seals are also specified.

Any additional requirements called for by the particular application are specified in 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.

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

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- | | |
|--------|--|
| 1199 | Sampling procedures and tables for inspection by attributes |
| 1199.1 | Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection |
| 1646 | Elastomeric seals for waterworks purposes |
| 1646.1 | Part 1: General requirements |
| 2490 | Sampling procedures and charts for inspection by variables for percent nonconforming |

AS/NZS

- | | |
|------|--|
| 4020 | Testing of products for use in contact with drinking water |
|------|--|

SA

- | | |
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| HB18.28 | Guidelines for third-party certification and accreditation, Guide 28:
General rules for a model third-party certification system for products |
|---------|--|

ISO

- | | |
|----|--|
| 37 | Rubber, vulcanized or thermoplastic—Determination of tensile stress-strain properties |
| 48 | Rubber, vulcanized or thermoplastic—Determination of hardness (hardness between 10 and 100 IRHD) |