WATERMARK

WMTS-536:2022

Plastic waste fittings - Fixture connector adaptor

WaterMark Technical Specification

2022

Australian Building Codes Board

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PREFACE

This WaterMark Technical Specification (WMTS) was prepared in accordance with the Manual for the WaterMark Certification Scheme, Appendix 4, Protocol for Developing Product Specifications.

The objective of this WaterMark Technical Specification is to enable product certification in accordance with the requirements of the Plumbing Code of Australia (PCA).

The word 'VOID' set against a clause indicates that the clause is not used in this WaterMark Technical Specification. The inclusion of this word allows a common use clause numbering system for the WaterMark Technical Specifications.

The term 'normative' has been used in this WaterMark Technical Specification to define the application of the appendices to which they apply. A 'normative' appendix is an integral part of a WaterMark Technical Specification.

The test protocol and information in this WaterMark Technical Specification was arranged to meet the authorisation requirements given in the PCA.

The WaterMark Schedule of Products and the WaterMark Schedule of Excluded Products are dynamic lists and change on a regular basis. Based on this function, these schedules are now located on the ABCB website (www.abcb.gov.au). These lists will be version controlled with appropriate historic references.

ACKNOWLEDGEMENTS

WaterMark Technical Specification WMTS-536:2022 was prepared by industry and was approved by the Administering Body on 11 July 2022.

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1 SCOPE

This Specification sets out requirements for smooth bore plastic-bodied fixture connector adaptors with an adjustable offset. These adaptors are used to provide flexibility at the point of installing fixtures to the sanitary plumbing system. Typical applications include water closet pans, baths, and showers.

2 APPLICATION

Appendix A sets out the means by which a manufacturer shall demonstrate compliance with this WaterMark Technical Specification for product certification.

When used in conjunction with a water closet pan, the adaptor is installed at floor level and not directly connected to the fixture but to a pan connector. For shower and bath applications, the adaptor would be connected to the fixture waste outlet.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Specification.

AS

681.1	Elastomeric seals - Material requirements for pipe joint seals used in water and drainage applications, Part 1: Vulcanised rubber
681.2	Elastomeric seals - Material requirements for pipe joint seals used in water and drainage applications, Part 2: Thermoplastic elastomers
1646	Elastomeric seals for waterworks purposes
2887	Plastic waste fittings
2888.8	Methods of testing plastics waste fittings, Method 8: Thermal cycling test
3996	Access covers and grates

AS/NZS

1260	PVC-U pipes and fittings for drain, waste and vent application
3500.0	Plumbing and drainage, Part 0: Glossary of terms.
3500.2	Plumbing and drainage, Part 2: Sanitary plumbing and drainage

NCC

PCA Plumbing Code of Australia

WMTS

040 Waste pipe connection outlets and gratings, separate or integral

517 Offset Pan Connectors

4 DEFINITIONS

For the purpose of this WaterMark Technical Specification, the definitions given in the WaterMark Scheme Rules, AS/NZS 3500.0 and those below apply.

4.1 Fixture connector adaptor

A fitting that has been designed to enable connection of fixtures to the sanitary plumbing system pipework and cater for misalignment. The fitting includes in the design a fixed outlet connection, a pan or dish to enable a smooth transition of waste, and an inlet connection that can be adjusted to facilitate the connection of the waste outlet of the fixture or pan connector.

5 MATERIALS

5.1 Fitting body

5.1.1 General

The plastics used in the construction of the body of the fitting shall be suitable for the conditions of use of the fitting. Conditions to be considered are temperature and type of wastewater, use of cleaning chemicals, and the external environment, i.e. if embedded in concrete or used in outdoor applications.

5.1.2 Unplasticized polyvinyl chloride (PVC-U)

Fitting bodies manufactured from PVC-U shall comply with the material requirements of AS/NZS 1260.

5.1.3 Other plastics materials

Fitting bodies manufactured from plastics materials other than PVC-U shall comply with the material requirements of AS 2887.

5.2 Requirements for Elastomeric Seals

Materials for any included elastomeric seal shall comply with the dimensional tolerances, imperfections, and defects requirements in AS 1646 and hardness, tensile strength and

elongation at break, compression set, and accelerated aging-in-air requirements of AS 681.1 or AS 681.2.

6 MARKING

Markings to be placed on products or packaging shall, as a minimum, be in accordance with clause 9.6 of the Manual for the WaterMark Certification Scheme.

In addition each fitting shall be permanently marked with the following:

a) Plastics material used in the body of the fitting e.g. PE, PP, ABS, ASA, PVC.

b) The manufacturer's name or registered trademark or both.

c) Nominal size in the form 'DN 100'or '100', as appropriate.

d) The month and year of manufacture.

7 PACKAGING

The fitting shall be packaged in such a manner so as to avoid damage during transportation and handling.

8 DESIGN

8.1 End connections

End connections shall enable connection to the sanitary drainage system pipe work. Connection ends shall comply with the requirements of AS 2887 or AS/NZS 1260 as applicable based on the connection type and application.

8.2 Waterway

The fitting shall comply with the waterway requirements of AS 2887 as applicable to the application of the fitting in the 'as installed' condition.

a) For shower or bath adaptors Table 3.1 AS 2887:1993 applies from the fitting inlet to the outlet.

b) For water closet pan adaptors Clause 4.4.2 AS 2887:1993 applies.

8.3 General design

8.3.1 Self-cleaning

The fitting shall be designed so that there is a smooth transition and continuous fall to the sanitary drainage system so that wastewater or waste material cannot pool/reside in the fitting.

8.3.2 Self-supporting

The fitting shall be designed to be self-supporting and not rely on the fixture for support.

8.4 Freedom from defects

Any defects shall not affect the fitting's-in service performance, function, or safe handling. Fittings shall be free from blisters and heat marks. Jointing surfaces of fittings, sockets and tapered spigots for solvent cement jointing shall taper uniformly from the mouth to the root.

9 PERFORMANCE REQUIREMENTS AND TEST METHODS

9.1 WC pan connector adaptors – Flushing test

Connector adaptors for use with water closet pans shall be tested to the requirements of WMTS 517 Clauses 9.1 to 9.4 when installed with referenced water closet suites. The connector adaptor shall be tested at the greatest offset position, and there shall be no test media residing in the fitting and no evidence of pooling. The water seal depth of the water closet pan shall not be affected by the connection of the fixture connector adaptor.

9.2 Leakage test

9.2.1 WC pan connector adaptors

The connector adaptor shall be capable of withstanding a hydrostatic pressure of 20kPa for 5 +1, -0 min without leakage when assembled in accordance with the manufacturer's instructions.

9.2.2 Shower, bath and other connector adaptors

The connector adaptor shall be comply with the pressure and air/vacuum test of AS 2887.

9.3 Thermal cycling test

Where the connector adaptor is intended to be used with heated wastewater, it shall be tested to AS 2888.8 and not exhibit any cracking or distortion, and the surface finish shall not split, flake or peel. After testing, the fitting shall not leak when tested in accordance with the Leakage Test of Clause 9.2.

9.4 Load test

Where the connector adaptor may be subjected to live loads, the fitting shall be tested and comply with the Load Test of WMTS-040.

10 TEST SEQUENCE AND TEST SAMPLE PLAN

Independent samples covering the range of sizes and types shall be used for testing of the performance requirements of Clauses 9.1 to 9.4.

11 PRODUCT DOCUMENTATION

Information shall be available to aid the installer and user in the correct installation, operation and ongoing maintenance of the product and include critical data on the products, use and application and any limitations. The information shall be readily available and be in plain English and supplemented by figures and diagrams as applicable.

11.1 Product data

Product data shall be available that identifies the following critical product characteristics as a minimum:

a) Jointing methods and adaptation to other piping systems.

b) Product range and model identification.

c) Suitable application/s ie water closet pan, bath, shower.

d) Product limitations ie pressure, temperature, installation or ongoing maintenance.

NOTE: Installation limitations may exist where the Fire Resistance Level (FRL) of a building may be compromised (i.e. reduction in the thickness of the concrete slab).

e) Access for maintenance.

11.2 Installation

Full installation instructions shall be provided with the product including the following:

a) References to installation in accordance with the PCA.

NOTE: A product that is listed on the WaterMark Product Database and is marked in accordance with the WaterMark Certification Scheme is recognised by authorities having jurisdiction as being authorised for use in a plumbing or drainage installation. This is because the product complies with the applicable product specification. The installation of an authorised product must meet the requirements of the PCA. Where the PCA does not contain installation requirements applicable to the authorised product, acceptance of the installation is at the discretion of the authority having jurisdiction.

b) Detailed step by step instructions including diagrams where necessary.

c) Contact details for after sales service.

APPENDIX A MEANS FOR DEMONSTRATING COMPLIANCE WITH THIS PRODUCT SPECIFICATION

(Normative)

A.1 SCOPE

This appendix sets out the means by which compliance with this WaterMark Technical Specification shall be demonstrated by a manufacturer under the WaterMark Certification Scheme.

A.2 RELEVANCE

The long-term performance of plumbing systems is critical to the durability of building infrastructure, protection of public health and safety, and protection of the environment.

A.3 PRODUCT CERTIFICATION

The purpose of product certification is to provide independent assurance of the claim by the manufacturer that products comply with this WaterMark Technical Specification.

The WaterMark Certification Scheme serves to indicate that the products consistently conform to the requirements of this WaterMark Technical Specification.

The sampling and testing plan, as detailed in Paragraph A.5 and Table A1, shall be used by the WaterMark Conformity Assessment Body. Where a batch release testing program is required, it shall be carried out by the manufacturer as detailed in Paragraph A.5 and Table A2.

A.4 DEFINITIONS

A.4.1 Batch release test

A test performed by the manufacturer on a batch of components, which has to be satisfactorily completed before the batch can be released.

A.4.2 Production batch

A clearly identifiable collection of units, manufactured consecutively or continuously under the same conditions, using material or compound to the same specification.

A.4.3 Sample

One or more units of product drawn from a batch, selected at random without regard to quality.

NOTE: The number of units of product in the sample is the sample size.

A.4.4 Sampling plan

A specific plan that indicates the number of units of components or assemblies to be inspected.

A.4.5 Type test batch

Schedule of units of the same type, identical dimensional characteristics, all the same nominal diameter and wall thickness, from the same compound. The batch is defined by the manufacturer.

A.4.6 Type testing (TT)

Testing performed to demonstrate that the material, component, joint or assembly is capable of conforming to the requirements given in the WaterMark Technical Specification.

A.5 TESTING

A.5.1 Type testing

Table A1 sets out the requirements for type testing and frequency of re-verification.

A.5.2 Batch release testing

Table A2 sets out the minimum sampling and testing frequency plan for a manufacturer to demonstrate compliance of product(s) to this WaterMark Technical Specification on an ongoing basis. However, where the manufacturer can demonstrate adequate process control to the certifying body, the frequency of the sampling and testing nominated by the manufacturer's quality plan and/or documented procedures shall take precedence for the purposes of WaterMark product certification.

A.5.3 Retesting

In the event of a batch release test failure, the products within the batch may be retested at a frequency agreed to with the WaterMark Conformity Assessment Body and only those batches found to comply may be claimed and/or marked as complying with this WaterMark Technical Specification.

A.5.4 Minimum annual inspection requirements

Table A3 sets out the minimum annual inspection requirements to be undertaken.

A.5.5 Re-evaluation testing

Table A4 sets out the requirements for re-evaluation testing.

TABLE A1
TYPE TESTS

Characteristic	Clause	Requirement	Test method	Frequency
Materials	5.1.1	Fitting body-General	Clause 5.1.1	At any change in material specification
	5.1.2	Fitting body-PVC-U	Clause 5.1.2	
	5.1.3	Fitting body-Other plastics	Clause 5.1.3	
	5.2	Elastomeric element	AS 681	
Markings	6	Labelling/marking	Review of documentation/physical examination	At any change in design/specification
Packaging	7	Avoid damage during transportation and handling	Review of documentation/physical examination	At any change in design/specification
Design	8.1	End Connections	AS 2887 or AS/NZS 1260	At any change in design
	8.2	Waterway	AS 2887	
	8.3.1	Self cleaning	Review of design documentation/physical examination	
	8.3.2	Self-supporting	Review of design documentation/physical examination	
	8.4	Freedom from defects	Clause 8.4	
Performance	9.1	WC Pan adaptor connectors – Flushing test	WMTS 517	At any change in design
	9.2	Leakage test	Clause 9.2/AS 2887	
	9.3	Thermal cycling test	AS 2888.8	At any change in design/material
	9.4	Load test	WMTS 040	At any change in design/material
Product documentation	11	Product data/Installation instructions	Product documentation	At any change to requirements

TABLE A2
BATCH RELEASE TESTS

Characteristic	Clause	Requirement	Test method	Frequency
Markings	6	Labelling/marking	Clause 6	Each unit
Design	8.4	Freedom from defects	Clause 8.4	Each unit
Product documentation	11	Product data/Installation instructions	Product documentation	Each unit

TABLE A3
MINIMUM ANNUAL INSPECTION REQUIREMENTS

Characteristic	Clause	Requirement	Verification method
Design	8.1-8.4	General design/construction	Visual and dimensional examination
Product marking	6	Product marking, use of the WaterMark logo and licence number	Visual inspection of marked product, relevant packaging and documentation
Product documentation	11	Product data/Installation instructions	Product documentation review

TABLE A4
RE-EVALUATION TESTING

Characteristic	Clause	Requirement	Test method
Performance	9.2	Leakage test	Clause 9.2/AS 2887

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