WMTS-522:2021

Fixture and floor wastes- Supplementary protection devices

WaterMark Technical Specification

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ABCB

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IMPORTANT NOTICE AND DISCLAIMER

On 25 February 2013 management and administration of the WaterMark Certification Scheme transferred to the Australian Building Codes Board (ABCB). From this date all new technical specifications will be named WaterMark Technical Specifications (WMTS). The WaterMark Schedule of Products lists all current WMTS.

This Technical Specification supersedes WaterMark Technical Specification WMTS-522:2018.

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The ABCB welcomes suggestions for improvement in the WMTS, and encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact the ABCB via phone on 1300 134 631, email at watermark@abcb.gov.au or write to the WaterMark Administering Body, ABCB, GPO Box 2013, Canberra ACT 2601.

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PREFACE

This WaterMark Technical Specification was originally prepared by industry and reviewed by the ABCB WaterMark Technical Advisory Committee (WMTAC).

WaterMark Technical Specification WMTS-522:2021 Fixture and floor wastes – Supplementary protection devices, incorporates amendments to allow an addition of similar products of alternate design to obtain certification.

The amendments have also aligned with the requirements of existing standards in the WaterMark Scheme for applications such as flow rate, sealing test and thermal cycling test.

The objective of this 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 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 Technical Specification to define the application of the appendices to which they apply. A ‘normative’ appendix is an integral part of a Technical Specification.

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

The WaterMark Schedule of Products and WaterMark Schedule of Excluded Products are dynamic lists and change on a regular basis. These lists are located on the ABCB website (www.abcb.gov.au). These lists are version controlled with appropriate historic references.

ACKNOWLEDGEMENTS

WaterMark Technical Specification WMTS-522:2021 was prepared by industry and reviewed by the ABCB WaterMark Technical Advisory Consultants. It was approved by the ABCB on 23 February 2021.

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1 SCOPE

This Technical Specification specifies the requirements for a supplementary protection device for use with fixture and floor wastes of nominal sizes up to DN 100.

2 APPLICATION

The device is not an alternative to a water seal in fixture or floor waste applications.

The device is installed as supplementary to the waste outlet for the purpose of mitigating water loss in the downstream trap due to evaporation and to protect against the entry of vermin, suds, odours and bio-aerosols into the habitable space.

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

3 REFERENCED DOCUMENTS

AS

2888.8	Method of testing plastic waste fittings, Method 8: Thermal cycling test

AS/NZS

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

ASSE

1072	Performance requirements for barrier type floor drain trap seal protection devices

EN

274.2	Waste fittings for sanitary appliances, Part 2: Test methods

NCC

PCA	Plumbing Code of Australia

WMTS

WMTS 047 Self-sealing devices

4 DEFINITIONS

For the purpose of this WaterMark Technical Specification, the definitions given in AS/NZS 3500.0 and the following apply.

4.1 Waste supplementary protection device

A fitting that is installed in the waste discharge pipework immediately after the waste outlet or grating for the purpose of sealing the space between the waste grate and water seal trap. It includes a valve mechanism that allows the flow of waste water into the drainage system and closes when there is no flow of water. The valve mechanism is of the manufacturer's design and could include an elastomeric membrane or diaphragm, or be a mechanical non return.

5 MATERIALS

Materials employed in the construction of these devices shall be such that they can withstand contact with wastewater up to 80 degrees C and comply with the performance requirements of this Technical Specification. Materials used in the construction of the device shall be both corrosion resistant and UV resistant where exposed to direct sunlight.

Where uPVC is used in the construction of the product it shall satisfy the BEP requirements of AS/NZS 1260.

6 MARKING

Markings to be placed on products or packaging shall be in accordance with the Manual for the WaterMark Certification Scheme.

7 PACKAGING

The product shall be packaged to prevent any damage of the device or potential contamination of any sealing element

8 DESIGN

8.1 General

The design of the device and included sealing mechanism shall be of the manufacturer's own design however, shall function in a manner that opens upon flow of waste water flow and closes when flow ceases. The devices are intended to be retrofitted to the drainage system after initial installation of the waste outlet and the design be such that the device can be removed for cleaning purposes or replacement.

8.2 Connection to the waste pipework

The sealing device shall be designed so as to enable integration to the piping system or fitment to the waste outlet and shall not be able to be dislodged by flow of waste water.

8.3 Nominal flow rate

The manufacturer shall nominate the flow rate of the product and, when tested, the product shall demonstrate compliance with Clause 9.4.

8.4 Water seal protection

Devices that claim to protect against water seal loss in downstream traps shall demonstrate compliance with Clause 9.2, or have a positive seal and comply with Clause 9.3.

8.5 Odour and bio-aerosols

Devices that claim to protect against the entry of odours and bio-aerosols into the habitable space shall have a positive seal and comply with Clause 9.3.

9 PERFORMANCE REQUIREMENTS AND TEST METHODS

9.1 Opening test

When tested in accordance with Section 3.4 of ASSE 1072:2007, the included valve of the device shall open when there is a maximum of 120 g of water on the inlet and close when there is no flow of water.

9.2 Water seal loss test

When tested in accordance with Section 3.2 of ASSE 1072:2007, the water seal loss shall be as the criterion in Clause 3.2.3.

9.3 Device valve seal integrity test

The device and included valve shall retain the seal under a backpressure equivalent to a 70 mm +5, -0 water column for 10 s.

9.4 Flow rate test

When tested in accordance with EN 274.2, the device shall be capable of discharging a flow rate greater than the manufacturer's nominal flow rate. The manufacturer's nominal flow rate shall be no less than the maximum flow rate from a tap outlet specified in the PCA.

9.5 Thermal cycling test

Devices with included plastics or elastomeric materials shall be tested in accordance with the thermal cycling test of AS 2888.8. At the completion of the test, the device shall be tested for seal integrity in accordance with Clause 9.3; if claimed to protect against water seal loss, be tested as per Clause 8.3 or water seal loss in accordance with Clause 9.2; if claimed to protect against entry of odours and bio-aerosols, tested as per Clause 8.4.

9.6 Resistance to environmental agents and solvents

Where the device includes an elastomeric seal it shall demonstrate suitability for use in the sanitary plumbing and drainage system by:

a) Testing to, and achieving compliance with, ASSE 1072:2007 Section 3.9, where the seal is a membrane or;

b) Testing to, and achieving compliance with, WMTS 047:2016 Clauses 9.4 and 9.5.

10 TEST SEQUENCE AND TEST SAMPLE PLAN

10.1 Test samples

Test samples shall be representative of the product range.

10.2 Test sample plan

Test samples shall be tested in accordance with the prescribed requirements. Separate samples are required for the thermal cycling test.

11 PRODUCT DOCUMENTATION

Installation instructions, including the following requirements, are to be supplied with the product, or made available to the end user:

a) The sealing device is not to be used as an alternative to a water seal trap.

b) The product should not be removed from the packaging until it is to be installed.

c) The product shall not be installed into an overflow relief gully (ORG), or a puddle flange.

d) Operating/maintenance/troubleshooting instructions including the need for the device to be installed clear of the following potential obstructions:

   i. an existing water seal level within a trap,

   ii. any inlets to a riser, and

   iii. any above ground soil, waste and drainage pipe collars.

e) Product warranty details including contact details for warranty claims.

f) A reference to the installation being undertaken by a licensed practitioner.

g) Manufacturer's nominal flow rate.

h) Limitations on the product's use.

NOTE:- A material or 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 material or product complies with the applicable product specification. The installation of an authorised material or product must meet the requirements of the PCA. Where the installation does not comply with the PCA installation requirements, or where the PCA does not contain installation requirements applicable to the authorised material or product, acceptance of the installation is at the discretion of the authority having jurisdiction.

APPENDIX A MEANS FOR DEMONSTRATING COMPLIANCE WITH THIS TECHNICAL 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 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 A5 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 A5 and Table A2.

Annual product conformity surveillance shall be undertaken by the WaterMark Conformity Assessment Body in accordance with Paragraph A5 and Table A3. Re-evaluation testing for re-certification, as detailed in Paragraph A5 and Table A4, shall be used by the WaterMark Conformity Assessment Body.

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

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 WaterMark Conformity Assessment 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	Materials	Review materials parts lists and compliance certificates	At any change in materials specification
Design	8.1	General	Design review	At any change in the design
	8.2	End connections	Design review	
	8.3	Water seal protection	Clause 9.2/9.3	
	8.4	Odour and bio-aerosol protection	Clause 9.3	
Performance	9.1	Opening test	ASSE 1072:2007 Section 3.4	At any change in materials, formulation or design or manufacturing process
	9.2	Water seal loss test	ASSE 1072:2007 Section 3.2	
	9.3	Valve seal integrity test	Clause 9.3	
	9.4	Flow rate test	Clause 9.4/EN 274.2	
Product documentation	11	Product data/Installation and maintenance instructions	Product documentation	At any change to installation requirements

TABLE A2
BATCH RELEASE TESTS

Characteristic	Clause	Requirement	Test method	Frequency
Marking	6	Marking	Visual inspection	Each batch
Design	8.2	End connection	Dimensional assessment	Each batch
Performance	9.1	Opening test	ASSE 1072:2007 Section 3.4	Once per batch
Product documentation	11	Product data/Installation and maintenance instructions	Visual inspection	Each batch

TABLE A3
MINIMUM ANNUAL INSPECTION REQUIREMENTS

Characteristic	Clause	Requirement	Verification method	Frequency
Materials	5	Materials	Review materials specifications and compliance certificates	Sample from product family, covering all families within 5 year certification cycle
Marking	6	Product marking, use of the WaterMark logo and license number	Visual inspection of marked product, relevant packaging and documentation	
Design	8.1	End connection	Visual, dimensional evaluation	
Performance	9.1	Test requirements	Desktop design review	
Product documentation	11	Product data/Installation and maintenance instructions	Visual examination	

TABLE A4
RE-EVALUATION TESTING

Characteristic	Clause	Requirement	Test method
Performance	9.1	Opening test	ASSE 1072:2007 Section3/3.4
	9.2	Water seal loss test	ASSE 1072:2007 Section 3/3.2
	9.3	Valve seal integrity test	Clause 9.3

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