



WMTS-104:2021

Appliances (miscellaneous)

WaterMark Technical Specification

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ATS 5200.104 – 2005 Technical Specification for Plumbing and Drainage Products
Appliances (miscellaneous)

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2021

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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-104:2016.

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PREFACE

WaterMark Technical Specification WMTS-104:2018 Appliances (miscellaneous) was prepared by industry to supersede WaterMark Technical Specification WMTS-104:2016.

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

Revisions:-

- o 2018:- The objective of this revision ~~was~~ is to incorporate requirements for the certification of pulp disposal macerators.
- o 2021:- The objective of this revision is to incorporate requirements for pulp disposal macerators to be designed with disposable pulp single-use containers that comply with PAS 29 or similar.

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 by industry to meet the authorisation requirements given in the PCA.

The WaterMark Schedule of Products and 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

Australian Technical Specification ATS 5200.104 – 2005, on which this technical specification is based, was prepared by Standards Australia Committee WS-031, Technical Procedures for Plumbing and Drainage Products Certification. It was approved on behalf of the Council of Standards Australia on 14 December 2004.

The following organisations were represented on Committee WS-031 in the preparation of Australian Technical Specification ATS 5200.104 – 2005.

- AUSTAP
- Australian Electrical and Electronic Manufacturers Association
- Australian Industry Group
- CSIRO Manufacturing and Infrastructure Technology
- Certification Interests (Australia)
- Consumer Electronics Suppliers Association
- Copper Development Centre—Australia
- Gas Appliances and Services Association
- Master Plumbers Australia
- Master Plumbers and Mechanical Services Association of Australia
- Master Plumbers, Gasfitters and Drainlayers New Zealand
- National Fire Industry Association
- New Zealand Water and Waste Association
- Plastics Industry Pipe Association of Australia
- Plumbing Industry Commission
- South Australian Water Corporation
- Water Services Association of Australia

WaterMark Technical Specification WMTS-104:2018 was prepared by industry and reviewed by the ABCB WaterMark Technical Advisory Committee. It was approved by the ABCB on 18 December 2018.



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1 SCOPE

This Technical Specification sets out minimum product requirements for appliances connected to the water service and/or sanitary plumbing piping. Appliances covered by this Technical Specification are listed on the WaterMark Schedule of Products.

2 APPLICATION

Appliances covered by this Technical Specification are those not intended to directly supply drinking water and where it is considered that there is some risk of contamination through back siphonage.

This Technical Specification will be referenced on the WaterMark Certification Scheme Schedule of Products.

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

3 REFERENCED DOCUMENTS

The following documents are referred to in this Technical Specification:

AS

- 1589 Copper and copper alloy waste fittings
- 2845.2 Water supply—Backflow prevention devices - Part 2: Air gaps and break tanks
- 2887 Plastic waste fittings
- 3688 Water supply—Copper and copper alloy body compression and capillary fittings and threaded-end connectors

AS/NZS

- 1260 PVC-U pipes and fittings for drain, waste and vent application
- 2845.1 Water supply—Backflow prevention devices - Part 1: Materials, design and performance requirements
- 3499 Flexible tube connectors for water supply
- 3500.0 Plumbing and drainage - Part 0: Glossary of terms
- 3500.1 Plumbing and drainage - Part 1: Water services
- 3500.2 Plumbing and drainage - Part 2: Sanitary plumbing and drainage

4020 Testing of products for use in contact with drinking water

[IEC](#)

[61770 — Electric appliances connected to the water mains — Avoidance of back siphonage and failure of hose-sets](#)

BS

6920-1 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water- Part 1: Specification

SA(SANZ)

HB 18.28 Guidelines third-party certification and accreditation—Guide 28—General rules for a model third-party certification system for products

PAS

29 Disposable pulp products for use in healthcare

[NCC](#)

[PCA Plumbing Code of Australia](#)

4 DEFINITIONS

For the purpose of this Technical Specification, the definitions given in AS/NZS 3500.0 [and the below apply.](#)

4.1 Pulp Disposal Macerator

A disposal appliance used to dispose pulp single-use containers (such as bedpans, urinals and bowls) containing human waste to sewer. Not used in conjunction with a toilet pan or pump.

5 MATERIALS

VOID

6 MARKING

Markings to be placed on products or packaging shall be in accordance with the [Manual for the WaterMark Certification Scheme](#).

In addition, each appliance shall be permanently and legibly marked with the following:~~Each appliance shall be permanently and legibly marked with the followin(a)~~

~~Manufacturer's name, brand or trademark(b) WaterMark.(c) Licence number(d) The number of this Technical Specification, i.e., WMTS-104.~~

- (a) Minimum and maximum water supply pressure ~~(f) Batch identification~~
- (b) For pulp disposal macerators:
1. Maximum and minimum inlet flow rate
 2. Capacity
 3. Drain connection and the minimum fall requirement
 4. Allowable pulp container(s) for use with the appliance
 5. Maximum number of pulp container(s) per cycle
- (c) Other markings relevant to the correct installation and safe operation of the product, as specified in relevant standards referenced in this specification.

7 PACKAGING

The product shall be supplied with suitable packaging to prevent damage or contamination during transport and installation.

8 DESIGN

8.1 End connectors

Water service connections shall be capable of making a watertight seal to a fitting end connection complying with AS 3688.

Sanitary plumbing connections shall be capable of making a watertight connection to a waste fitting complying with AS 1589 or AS 2887 or a sanitary plumbing pipe or fitting complying with AS/NZS 1260.

8.2 Backflow prevention

~~Backflow prevention, if supplied integral or with the appliance shall be in accordance with the hazard rating specified within the PCA, and the backflow prevention device types listed in AS/NZS 3500.1~~

~~Note: Where the appliance includes integral backflow, the type of backflow shall be in accordance with the PCA and listed on the Scope of Use for the product.~~

~~Appliances shall—~~

- ~~(a) comply with the backflow prevention requirements IEC 61770; or~~

~~(b) — comply with the backsiphonage test of AS 2845.2:1996; or~~

~~(c) — be supplied with a backflow prevention device complying with AS/NZS 2845.1 or a type required in AS/NZS 3500.1.~~

~~Where backflow prevention devices are required to be installed external to the appliance or apparatus, the devices shall be supplied with the appliance and include appropriate installation instructions.~~

8.88.3 Water seal

If the appliance has an integral waste trap, the water seal shall comply with AS 1589 or AS 2887 and AS/NZS 3500.2.

8.98.4 Electrical Safety

Electrical appliance components shall comply with the relevant requirements of the electrical regulator, where required.

8.108.5 Pulp Disposal Macerator

A pulp disposal macerator shall:

- a) be designed so that it can only be operated with the lid closed
- b) have a self cleaning function
- c) have a hands free opening mechanism
- d) provide descriptive feedback to the user in the event of a mechanical fault or cycle interruption
- e) have a maximum pulp-water ratio of 10g per litre.

~~Pulp Disposal Macerators complying with this Specification are designed to be used with disposable pulp single-use containers (such as bedpans, urinals and bowls) that comply with PAS 29, or simialr~~

~~g)()~~

9 PERFORMANCE REQUIREMENTS AND TEST METHODS

9.1 Products in contact with drinking water

Products in contact with drinking water shall comply with AS/NZS 4020.

Hoses shall be tested as end-of-line product.

Products shall be deemed to comply with this requirement where the volume contained in the water supply pipework up to the backflow prevention device is less than 1 L and provided that the components comply with a recognised Standard that assesses the materials for their effect on the quality of water, e.g., BS6920-1, NSF 61.

NOTE: The only products considered to be in contact with drinking water are those upstream of the backflow prevention device.

9.2 Appliance hose connections

Hoses connected to appliances shall comply with the hose-sets requirements of AS/NZS 3499 or IEC 61770.

9.3 Strength of assembly

9.3.1 Hydrostatic Strength

When tested at twice the maximum working pressure and at the maximum working temperature for 5 minutes, the water inlet assembly shall not leak.

9.3.2 Watertightness

When tested at maximum working pressure and ambient temperature, the water inlet assembly shall not leak.

9.3.3 Maceration (Applicable to Pulp Disposal Macerator)

~~Disposable pulp single-use containers (such as bedpans, urinals and bowls) used with pulp disposal units shall comply with PAS 29.~~

10 TEST SEQUENCE AND TEST SAMPLE PLAN

VOID

11 PRODUCT DOCUMENTATION

11.1 Product data

Product data, which identifies critical product characteristics such as the following, shall be available:

- (a) Drainage requirements including size and position of piping.
- (b) Water supply temperature and pressure limitations.

(c) For Disposable Pulp Macerators:

i. Reference to use with pulp products compliant to PAS 29

ii. Reference to recommended maximum load per cycle so as to not exceed the pulp-water ratio.

11.2 Installation instructions

Detailed installation instructions shall be provided, which shall include the following:

a) References to installation in accordance with the PCA, including backflow prevention device installation and any limitations on the product.

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) Step-by-step instructions.
- c) Commissioning procedures and adjustments required.
- d) Information to ensure most efficient usage of the product.
- e) Troubleshooting guide.
- f) Contact details for after-sales service.

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 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 Technical Specification.

The certification scheme serves to indicate that the products consistently conform to the requirements of this 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.

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 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

Where third-party certification requires a batch release test program it shall be established between the manufacturer and the WaterMark Conformity Assessment Body.

NOTE: See HB 18.28 for guidelines for third-party certification and accreditation.

A.5.3 Retesting

In the event of a test failure, the products within the batch shall be tested at an appropriate acceptable quality level (AQL) and only those batches found to comply may be claimed and/or marked as complying with this Technical Specification.

TABLE A1
—TYPE TESTS

Characteristic	Clause	Requirement	Test method	Frequency
Marking	6	Marking	Visual Inspection Design Review	At any change of the marking process or requirements
Design	8.1	End connectors	Design review	At any change of design
	8.2	Backflow protection.		
	8.3	Water Seal		
	8.4	Electrical Safety		
	8.5	Pulp Disposal Macerator Safety		
Performance	9.1	Products in contact with drinking water	AS/NZS 4020 or Clause 9.1	At any change of design or materials specification or on renewal of certification, whichever occurs first
	9.2	Hose sets	AS/NZS 3499 or IEC 61770	
	9.3.1	Hydrostatic strength	Clause 9.3.1	
	9.4	Maceration PAS 29	Design Review	
Product documentation	11	Installation instructions	Visual inspection	At any change of installation or operation specification

TABLE A2
BATCH RELEASE TESTS

Characteristic	Clause	Requirement	Test method	Frequency
Marking	6	Marking	Visual Inspection	100%
Design	8.1	End connectors	Visual Inspection	Once per batch
	8.2	Backflow protection	Visual Inspection	
	8.3	Water Seal	Visual Inspection	
Performance	9.2	Appliance hose connections	Certificate of conformance to AS/NZS 3499 or IEC 61773	Once per batch
	9.3.2	Water tightness	Clause 9.3.2	

TABLE A3
MINIMUM ANNUAL INSPECTION REQUIREMENTS BY WMCAB

Characteristic	Clause	Requirement	Test method	Frequency
Marking	6	Marking	Visual Inspection	100%
Design	8.1	End connectors	Visual Inspection	Once per batch
	8.2	Backflow protection	Visual Inspection	
	8.3	Water Seal	Visual Inspection	
Performance	9.2	Hose sets	Certificate of conformance to AS/NZS 3499 or IEC 61773	Once per batch
	9.3.2	Water tightness	Clause 9.3.2	
Product documentation	11	Installation instructions	Visual inspection	100%

TABLE A4
RE-EVALUATION TESTING

Characteristic	Clause	Requirement	Test method
Marking	6	Marking	Visual Inspection
Design	8.1	End connectors	Dimensional
	8.2	Backflow protection	Design review
	8.3	Water Seal	Visual Inspection
	9.2	Hose sets	AS/NZS 3499 or IEC 61770
	9.3.2	Water tightness	Clause 9.3.2
Product documentation	11	Product data/Installation and maintenance instructions	Product documentation