



WMTS-469:20198

Waterless or limited flush urinals – With an integral sealing device

WaterMark Technical Specification

Document formerly known as:-

ATS 5200.469 – 2005 Technical Specification for Plumbing and Drainage Products
Waterless or limited flush urinals – With an integral sealing device

Publication History:-

First published as ATS 5200.469—2005.
Revised and redesignated as WMTS-469:2014.
Revised as WMTS-469:2018
Revised as WMTS-469:2019

20198

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This Technical Specification supersedes WaterMark Technical Specification WMTS-469:2018.

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PREFACE

Watermark Technical Specification WMTS-469:2014 Technical Specification for plumbing and drainage products, Waterless or limited flush urinals – With an integral sealing device was prepared by industry to supersede WaterMark Technical Specification WMTS-469:2018, originally prepared by the Joint Standards Australia/Standards New Zealand Committee WS-031, Technical Procedures for Plumbing and Drainage Products Certification. The objective of this revision is to include additional requirements for urinals that include a function to dose the waste pipework system with water at periodic intervals without flushing the surface of the fixture.

~~WaterMark Technical Specification WMTS-469:2018 Technical Specification for plumbing and drainage products, Waterless or limited flush urinals – With an integral sealing device, incorporates a revision to the materials to be used for manufacture of urinals. The objective of this Technical Specification is to enable product certification in accordance with the requirements of the Plumbing Code of Australia (PC~~ 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 committee members to meet the authorization requirements given in the PCA.

The WaterMark Schedule of Specifications and List of Exempt Products are dynamic lists and change on a regular basis. Based on this function, these lists have been removed from the WaterMark Certification Scheme document known as Technical Specification for Plumbing and Drainage Products and are now located on the ABCB website (www.abcb.gov.au). These lists will be version controlled with appropriate historic references.

ACKNOWLEDGEMENTS

Australian Technical Specification ATS 5200.469 – 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 28 January 2005.

The following organisations were represented on Committee WS-031 in the preparation of Australian Technical Specification ATS 5200.469 – 2005.

- AUSTAP
- Australian Electrical and Electronic Manufacturers Association
- Australian Industry Group
- Certification Interests (Australia)
- Consumer Electronics Suppliers Association
- Copper Development Centre – Australia
- CSIRO Manufacturing and Infrastructure Technology
- Gas Appliances and Services Association
- Master Plumbers and Mechanical Services Association of Australia
- Master Plumbers 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-469:2019 was prepared by industry and reviewed by the ABCB Watermark Technical Advisory Committee. It was approved by the ABCB on XX XX 2019

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1 SCOPE

This Technical Specification specifies requirements for wall-hung and trough urinals to a maximum length of 1200 mm with an integral self-sealing device that can either be waterless or flushed with a limited volume of water.

2 APPLICATION

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

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

- | | |
|--------|---|
| 1976 | Vitreous china used in sanitary appliances |
| 2845.1 | Water supply - Backflow prevention devices - Materials, design and performance requirements |
| 3558 | Methods of testing plastics and composite materials for use in sanitary plumbing fixtures - Introduction and list of methods
<u>Methods of testing plastics and composite materials for use in sanitary plumbing fixtures</u> |
| 3558.2 | Methods of testing plastics and composite materials sanitary plumbing fixtures - Determination of chemical and stain resistance
<u>Method 2: Determination of chemical and stain resistance</u> |
| 3558.3 | Methods of testing plastics and composite materials sanitary plumbing fixtures - Determination of colour fastness
<u>Method 3: Determination of colour fastness</u> |
| 3558.4 | Methods of testing plastics and composite materials sanitary plumbing fixtures - Determination of resistance to surface scratching
<u>Method 4: Determination of resistance to surface scratching</u> |
| 3558.5 | Methods of testing plastics and composite materials sanitary plumbing fixtures - Determination of degradation by ultraviolet light
<u>Method 5: Determination of degradation by ultraviolet light</u> |
| 3558.6 | Methods of testing plastics and composite materials sanitary plumbing fixtures - Visual examination of surface finish for defects
<u>Method 6: Visual examination of surface finish for defects</u> |

AS/NZS

- | | |
|--------|---|
| 3499 | Water supply - Flexible hose assemblies |
| 3500.0 | <u>Plumbing and drainage, - Part 0: Glossary of terms</u> |



3500.1 [Plumbing and drainage, - Part 1: Water services](#)

3500.2 [Plumbing and drainage, - Part 2: Sanitary plumbing and drainage](#)

3982 Urinals

WMTS

030 Solenoid valves

[ISO](#)

105.AO2 Textiles—Tests for colourfastness - Part A02: grey scale for assessing change in colour

ASTM

A240/A240M Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for General Applications

ANSI

Z124.9 Plastic urinal fixtures

[NCC National Construction Code](#)

[PCA Plumbing Code of Australia](#)

4 DEFINITIONS

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

4.1 Sealing device

A device that mechanically, by way of a diaphragm or valve mechanism, performs a sealing function.

[4.2 Waterless Urinal](#)

[A urinal that does not use water to flush the fixture.](#)

[4.3 Hybrid Urinal](#)

[A urinal that includes a function to dose the waste pipework system with water at periodic intervals, and does not use water to flush the surface of the fixture. For the purposes of water consumption, a hybrid urinal is considered to be a Waterless Urinal.](#)

[4.4 Water Fed Urinal](#)

[A urinal that uses water to flush the external surface of the fixture.](#)

65 MATERIALS

6.15.1 Vitreous china

6.1.15.1.1 Material

Vitreous china shall comply with AS 1976.

6.1.25.1.2 Thickness

The thickness, at any point of the urinal, shall not be less than 6 mm.

6.1.35.1.3 Surface finish

All external surfaces visible after installation shall be glazed.

6.25.2 Plastics and composite

6.2.15.2.1 Materials and workmanship

6.2.1.15.2.1.1 Materials

Urinals made from thermo set or thermoplastic materials in either pure or composite form shall comply with the requirements of Clause 5.2.2.

6.2.1.25.2.1.2 Gel coat thickness

Gel coat film thickness shall be not less than 0.4 mm.

6.2.25.2.2 Properties of finished urinals

6.2.2.15.2.2.1 General

Tests shall be carried out on not less than one test specimen cut from a urinal or a complete urinal.

6.2.2.25.2.2.2 Surface quality

6.2.2.2.15.2.2.2.1 Distortion and defects

When viewed from a distance of between 500 mm and 600 mm with a surface illumination of not less than 100Lx the surface of the urinal shall be without distortion, defects or blemishes. Any doubtful area shall be tested in accordance with AS 3558.6.

6.2.2.2.25.2.2.2.2 Surface finish

Urinals may have a lustrous or non-gloss finish.



6.2.2.35.2.2.3 Chemical and stain resistance test

When sample specimens are tested in accordance with AS 3558.2, the material shall be unaffected by the following reagents:

- (a) Household detergent 'Teepol' Gold D6515 (5% solution/deionized water) or equivalent.
- (b) Urea 6% (urine), analar grade.

6.2.2.45.2.2.4 Colourfastness test

When a sample specimen is tested in accordance with AS 3558.3 the material shall not craze, crack or exhibit signs of any defect and change in colour shall not register less than grey scale of ISO 105.AO2.

6.2.2.55.2.2.5 Surface scratching test

When a sample specimen is tested in accordance with AS 3558.4 using a 2H lead there shall be no indentation or scratching deeper than 0.15 mm. Removable scratches as defined in AS 3558.4 are acceptable.

6.2.2.65.2.2.6 Impact test

When a sample specimen is tested in accordance with AS 3558.5 it shall not crack, craze or show any signs of delamination.

6.35.3 Stainless steel

Stainless steel shall be a minimum nominal thickness of 0.9 mm and comply with ASTM A240/A240M Grade 304 or 316 (see AS/NZS 3982).

6.45.4 Vitreous Enamelled Steel

6.4.15.4.1 Steel base material and construction

Urinals shall be manufactured from cold-rolled unalloyed low carbon steel of minimum thickness 1.5mm. Urinals shall be formed by stamping, pressing or fabrication. Where welding is employed, the welding materials shall be compatible with the material to be welded. All welds shall be finished smooth without pitting or crevices

6.4.25.4.2 Enamel coating

Urinals shall be wholly enamelled on the inside and over the exposed rim with vitreous enamel. All other surfaces shall be fully coated with a corrosion-resistant bonding coat. The enamel shall not exhibit any defects that might be obvious to the user and be a site for initiation of corrosion of base steel.

76 MARKING

Waterless urinals shall be marked with the following:

- (a) Manufacturer's name, brand or trademark.
- (b) WaterMark.
- (c) Licence number.
- (d) Batch identification.
- (e) Model number.
- (f) The number of this Technical Specification, i.e., WMTS-469.

87 PACKAGING

VOID

98 DESIGN

9.18.1 Waste outlet and grating

The urinal shall incorporate an integral waste and grating that provides free flow of urine into the mechanical sealing device. The grating shall prevent the intrusion of foreign articles, e.g., cigarettes or deodorizing tablets.

9.28.2 Sealing device

The sealing device shall be an integral part of the fixture and capable of complying with the performance requirements of Clause 9. The design of the urinal shall be such as to enable disassembly for easy replacement or cleaning of the sealing device in situ.

9.38.3 Sealing device free passage

The design of the device shall be such to allow free passage of urine and shall not build up to an extent to be above the level of the seal.

9.48.4 Outlet connection

The outlet of the urinal shall be designed to enable a watertight for connection to the sanitary drainage system.

8.5 Solenoid Valves

Integral solenoid valves shall comply with WMTS-030.

8.6 Flexible Hoses

Integral flexible hoses shall comply with AS/NZS 3499.

119 PERFORMANCE REQUIREMENTS AND TEST METHODS

11.1 Structural strength and integrity

~~Wall hung urinals shall comply with the load test of AS/NZS 3982.~~

11.39.1 Sanitary performance

~~Urinals shall comply with the load test of AS/NZS 3982.~~ Performance of urinals shall be in accordance with ANSI Z124.9 with the requirements of ANSI Z124.9, Odour Evaluation Test.

11.49.2 Waste seal of water fed urinals

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

11.5 Resistance to environmental agents

~~Where urinals have a diaphragm type sealing mechanism, this mechanism shall be exposed to the test solutions identified below, each for 3000 cycles.~~

~~A cycle comprises 10 s exposure to the solution, followed by 10 s draining.~~

~~Each test solution with the exception of (a) consist of the listed ingredients mixed with water at ambient temperature, the ingredients being 5% (+1, -0%) of the total volume of the test solution as follows:~~

~~(a) Urea 6% (urine), analar grade.~~

~~(b) Household detergent "Teepol" Gold D6515 (5% solution/deionised water) or equivalent.~~

~~(c) Crushed cigarettes.~~

~~At the completion of the above test the device shall be tested for seal integrity in accordance with Clause 9.3.~~

11.139.3 Flushing test

For urinals that incorporate a flushing system when tested in accordance with Appendix B the urinal shall flush coloured water over the serviced area 130 mm below the spreader on a spreader type and 50 mm below the weir outlet on a box rim type at the manufacturer's nominated flush volume.

1210 TEST SEQUENCE AND TEST SAMPLE PLAN

VOID

1311 PRODUCT DOCUMENTATION

13.111.1 PRODUCT DATA

Product data that identifies critical product characteristics shall be available.

13.211.2 INSTALLATION AND MAINTENANCE INSTRUCTIONS

13.2.111.2.1 General

Installation instructions shall be provided, which shall give full details of installation procedures for urinal, including the need for special tools or training. Care and maintenance instructions shall be provided and affixed to the urinal.

13.2.211.2.2 Installation instructions

~~Detailed installation instructions shall be provided, which shall include the following: -The installation instructions for waterless urinals shall include reference to installation in accordance with AS/NZS 3500.2. The installation instruction shall also draw attention to the following requirement of AS/NZS 3500.2 and the National Construction Code Volume 3:~~

~~(a) Reference to installation in accordance with the PCA, including the installation of any non-integral backflow prevention device and any limitations on the product; and~~

~~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 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.~~

~~(ba) prior to installing a waterless wall-hung urinal to an existing system the installer shall determine the materials of the pipes in the existing system; and~~

~~(cb) the undiluted discharge from a waterless urinal shall not be transported through copper or copper alloy pipework.~~

~~(de) For Hybrid Urinals, instructions to require the determination the hazard rating of the installation in accordance with the Plumbing Code of Australia Vol 3 – Cross Connection Hazards.~~

~~(ed) For Hybrid Urinals, the installation of an appropriate backflow prevention device that complies with AS 2845.1.~~



13.2.311.2.3 Operating and maintenance instructions

Operating instructions shall be provided, which shall include the following:

- (a) Method of cleaning.
- (b) Identification of spare parts items and instructions for their replacement.
- (c) Occupational health instructions, such as safety equipment.
- (d) Essential requirements and precautions.
- (e) Other instructions as necessary.

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 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.

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	Vitreous china	AS 1976	At any change in materials specification
	5.2	Plastics and composite	AS 3558	
	5.3	Stainless steel	Clause 5.3	
	5.4	Vitreous Enamel	Clause 5.4	
Design	8.1	Waste outlet and grating	Design review/physical examination	At any change in the design
	8.2	Sealing device	Design review	
	8.3	Sealing device free passage		
	8.4	Outlet connection		
Performance	9.1	Structural strength and integrity	AS/NZS 3982	At any change in design or manufacturing process
	9.2	Sanitary performance	ANSI Z124.9	
	9.3	Waste Seal	Clause 9.4	
	9.4	Resistance to environmental agents	Clause 9.5	
	9.5	Flushing test	Appendix B	
Product documentation	11	Product data/Installation/Maintenance instructions	Documentation review	At any change to installation requirements

**Table A2
BATCH RELEASE TESTS**

Characteristic	Clause	Requirement	Test method	Frequency
Materials	5.1	Vitreous China/Thickness/Surface finish	AS 1976/Physical measurement/Visual	AS 1976/100%
	5.2	Plastics and composite-thickness/surface quality, finish	AS 3558	Once per batch
	5.3	Stainless steel	Review compliance certificates	Once per batch
Marking	6	Marking	Visual	100%
Performance	9.3	Waste seal	Clause 9.4	Once per batch
	9.4	Flushing test	Appendix B	
Product Documentation	11	Product data/installation/maintenance instructions	Documentation review	At any change to installation requirements

**TABLE A3
MINIMUM ANNUAL INSPECTION REQUIREMENTS ~~BY CAB~~**

Characteristic	Clause	Requirement	Verification method	Frequency
Markings	6	Clause 4	Marking proposal/Drawings	Each Inspection
Product documentation	11	Instructions for installation and maintenance	Visual	

**TABLE A4
RE-EVALUATION TESTING**

Characteristic	Clause	Requirement	Test method
Performance	9.3	Sanitary performance – Tightness test	ANSI Z124.9

APPENDIX B - FLUSHING TEST - CLEANLINESS

(Normative)

B1 SCOPE

This Appendix sets the method for testing the flush effectiveness of wall-hung urinals.

B2 PRINCIPLE

The urinal is set up in accordance with the manufacturer's instructions and flush testing performed.

B3 APPARATUS

The following is required:

- (a) A flushing cistern or flushing apparatus;
- (b) Dye or coloured water for supply to the flushing apparatus or cistern; and
- (c) Suitable volume-measuring equipment, to 0.1 L.

B4 PREPARATION

The cistern and flush pipes shall be connected to the urinal installed so that the bottom of the cistern is 450 +10, -0 mm or to the manufacturer's height specification (see Figure B1).

B5 PROCEDURE

The procedure shall be as follows:

- (a) Mount the urinal in accordance with the manufacturer's instructions.
- (b) Degrease wet areas.
- (c) Connect the urinal to the flushing apparatus.
- (d) Activate the flushing device to deliver the volume of water as nominated by the manufacturer (up to 2.5 L max.) (see AS/NZS 3500.1).

B6 TEST REPORT

The following shall be reported:

- (a) Manufacturer, model and type of urinal.
- (b) Whether the coloured water flushed the urinal wall areas shown in Figure B1.
- (c) Volume of discharge in litres.

(d) Reference to this test method, i.e., Appendix B, WMTS 469.

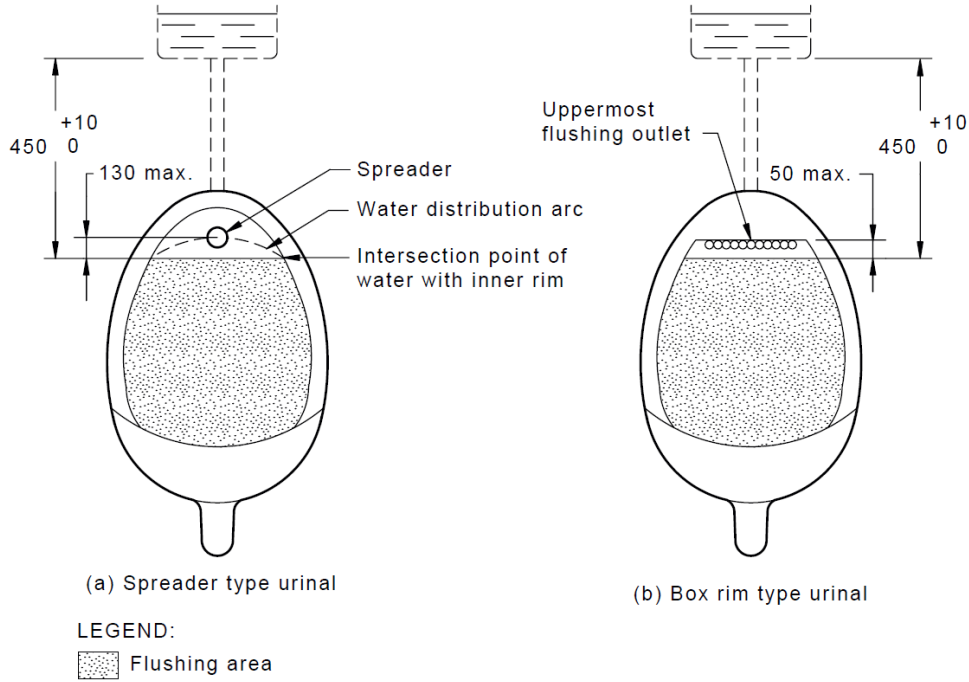


FIGURE B1 TYPICAL FLUSH TEST ARRANGEMENT FOR SINGLE STALL WALL-HUNG URINALS