



# **WMTS-420:2016**

## **Trap-priming valves**

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**WaterMark Technical Specification**

**2016**



**ABCB**





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## **Trap-priming valves**

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**WaterMark Technical Specification**

Document formerly known as:-

ATS 5200.420 – 2005 Technical Specification for Plumbing and Drainage Products  
Trap-priming valves

Publication History:-

First published as ATS 5200.420—2005.  
Revised and redesignated as WMTS-420:2016.

**2016**

## **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). Within two years all existing ATS will be renamed WMTS. During this initial period both terms may be used and accepted. All new and recertified Certificates of Conformity will reference WMTS. Certificates of Conformity that currently reference ATS will be re-issued referencing the equivalent WMTS during this initial period. The WaterMark Schedule of Specifications lists all current WMTS and, where appropriate, the former ATS name.

This Technical Specification supersedes Standards Australia ATS 5200.420–2005.

The rebranding of this Technical Specification has included additional information about the transition as well as changes to specific details including replacing references to Standards Australia and the National Plumbing Regulators Forum (NPRF) with the ABCB, changing the term Australian Technical Specification (ATS) to WaterMark Technical Specification (WMTS), replacing references to technical committees WS-014 and WS-031 with the WaterMark Technical Advisory Committee (WMTAC).

While the ABCB, the participating Governments and other groups or individuals who have endorsed or been involved in the development of the WMTS, have made every effort to ensure the information contained in this document is accurate and up to date, such information does in no way constitute the provision of professional advice.

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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](mailto:watermark@abcb.gov.au) or write to the WaterMark Administering Body, ABCB, GPO Box 9839, Canberra ACT 2601.

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## PREFACE

WaterMark Technical Specification WMTS-420:2016 Technical Specification for plumbing and drainage products, Trap-priming valves was 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 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 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](http://www.abcb.gov.au)). These lists will be version controlled with appropriate historic references.

## **ACKNOWLEDGEMENTS**

Australian Technical Specification ATS 5200.420–2005, 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 19 August 2005.

The following organisations were represented on Committee WS-031 in the preparation of Australian Technical Specification ATS 5200.420–2005.

- AUSTAP
- Australian Electrical and Electronic Manufacturers Association
- Australian Industry Group
- Australian Stainless Steel Development Association
- Building Officials Institute of New Zealand
- Building Research Association of New Zealand Inc
- Certification Interests (Australia)
- Consumer Electronics Suppliers Association
- Copper Development Centre—Australia
- Master Plumbers, Gasfitters and Drainlayers New Zealand
- National Fire Industry Association
- Plastics Industry Pipe Association of Australia
- Plumbing Industry Commission
- South Australian Water Corporation
- Water Services Association of Australia

## TABLE OF CONTENTS

1	Scope .....	6
2	Application.....	6
3	Referenced documents.....	6
4	Definitions.....	7
5	Materials .....	7
6	Marking .....	9
7	Packaging .....	9
8	Design .....	9
9	Performance requirements and test methods.....	9
10	Void .....	10
11	Product documentation .....	10
Appendix A	Means for demonstrating compliance with this technical specification....	12

## **1 SCOPE**

This Technical Specification sets out requirements for metallic-bodied valves that are connected to the water supply system and primarily utilized for the priming of sanitary traps.

## **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 Specification:

AS

- |        |   |
|--------|---|
| 1432   | Copper tubes for plumbing, gasfitting and drainage applications   |
| 1565   | Copper and copper alloys—Ingots and castings  |
| 1572   | Copper and copper alloys—Seamless tubes for engineering purposes  |
| 1589   | Copper and copper alloy waste fittings  |
| 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   |
| 1646.3 | Part 3: Material requirements for pipe joints seals used in water and wastewater applications with the exception of natural rubber and polyisoprene compounds |
| 2136   | Method for detecting the susceptibility of copper and its alloys to stress corrosion cracking using the mercurous nitrate test                                |
| 2345   | Dezincification resistance of copper alloys   |
| 2738   | Copper and copper alloys—Compositions and designations of refinery products, wrought products, ingots and castings  |
| 3688   | Water supply—Metallic fittings and end connectors   |

AS/NZS

- 1567 Copper and copper alloys—Wrought rods, bars and sections
- 1568 Copper and copper alloys—Forging stock and forgings
- 2845 Water supply—Backflow prevention devices
- 2845.1 Part 1: Materials, design and performance requirements
- 3718 Water supply—Tap ware
- 3500 Plumbing and drainage (Series)
- 4020 Testing of products for use in contact with drinking water

WSA

- 109 Flange gaskets and o-rings

## 4 DEFINITIONS

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

## 5 MATERIALS

### 5.1 General

This Clause specifies requirements for materials utilized in the construction of the product.

### 5.2 Metallic materials

Metallic materials in contact with water shall be corrosion-resistant.

For the purposes of this Technical Specification, the following materials are considered, corrosion-resistant:

- (a) Copper, as specified in Clause 5.2.1.
- (b) Copper alloy, as specified in Clauses 5.2.2 and 5.2.3.
- (c) Stainless steel, as specified in Clause 5.2.4.

### **5.2.1** *Copper*

Copper shall comply with the following:

- (a) *Wrought products* AS 2738.
- (b) *Tubular components* Copper tube shall comply with AS 1432.

### **5.2.2** *Copper alloy*

Copper alloy shall comply with the following:

- (a) *Castings* AS 1565 or capable of passing the requirements of Clause 5.3 provided that the alloy contains not less than 58% copper and not more than 1% aluminium.
- (b) *Hot pressings* AS/NZS 1568.
- (c) *Rod for machined parts* AS/NZS 1567 or an alloy complying with AS 2345.
- (d) *Tubular components* Copper alloy tube shall comply with AS 1572 alloy designation C26130. Where bent or stamped in the fabrication process, the tube shall be sufficiently stress-relieved so that it is capable of passing the mercurous nitrate test specified in AS 2136 after all fabrication processes are complete.

### **5.2.3** *Dezincification-resistant (DR) copper alloy*

Copper alloys in contact with water shall comply with AS 2345.

### **5.2.4** *Stainless steel*

Stainless steel shall be grade 304 or 316 complying with the relevant ASTM Standard for the product form.

## **5.3** **Plastics material**

### **5.3.1** *General*

Under hydrostatic pressure, plastics materials shall withstand the maximum operating pressure and temperature for the intended life of the product.

#### **5.3.1.1** *UV resistance*

For outdoor applications, the plastic material formulation shall be stabilized by suitable ultraviolet light stabilizers.

## **5.4** **Elastomeric materials**

The materials used for seals shall comply with AS 1646.1, and AS 1646.2 or AS 1646.3.

Gaskets shall comply with WSA 109.

## 6 MARKING

Each trap-priming valve shall be permanently and legibly marked with the following:

- (a) Manufacturer's name, brand or trademark.
- (b) WaterMark.
- (c) Licence number.
- (d) The number of this Technical Specification, i.e., WMTS-420.

*NOTE: The number of the Technical Specification may be in abbreviated form i.e., S420 where space is limited.*

## 7 PACKAGING

The trap-priming valve shall be packaged in such a manner so as to avoid damage in transit.

## 8 DESIGN

### 8.1 End connections

End connections shall comply with the dimensional requirements of the relevant Australian Standard.

## 9 PERFORMANCE REQUIREMENTS AND TEST METHODS

### 9.1 Hydrostatic strength test

When tested in accordance with the hydrostatic strength test of AS/NZS 3718, the trap-priming valve shall show no signs of distortion, splitting, cracking, breakage or other failure.

### 9.2 Watertightness test

When assembled in accordance with the manufacturer's instructions, trap-priming valves shall not leak when tested in accordance with the watertightness test of AS/NZS 3718.

### 9.3 Back-siphonage test

When tested in accordance with the back-siphonage test requirements for hose connection vacuum breakers in AS/NZS 2845.1, there shall be no back-siphonage of water from the downstream piping into the water supply piping.

#### **9.4 Endurance test**

When tested in accordance with the endurance test requirements for hose connection vacuum breakers of AS/NZS 2845.1 utilizing the maximum flow rates as specified by the manufacturer, there shall be no back-siphonage of water from the downstream piping into the water supply piping when re-tested to the back-siphonage test of Clause 9.3.

## **10 VOID**

## **11 PRODUCT DOCUMENTATION**

### **11.1 Product data**

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

- (a) Delivery volume and flow rate.
- (b) Maximum allowable operating pressure and temperature.
- (c) Minimum operating pressure.
- (d) Hydrostatic pressure loss.

### **11.2 Installation and maintenance instructions**

#### **11.2.1 *Installation instructions***

Full installation instructions shall be provided with the trap priming valves, which shall include the following:

- (a) Requirements as specified in AS/NZS 3500.2.
- (b) Detailed step-by-step instruction.
- (c) Details of any special tools or training that may be required for the installation of the product.
- (d) Commissioning procedures and adjustments required.
- (e) Troubleshooting guide.
- (f) Contact details for after-sales service.

#### **11.2.2 *Operating and maintenance instructions***

Operating and maintenance instructions shall be provided, which shall include—

- (a) any regular maintenance requirements;
- (b) spare part information;
- (c) troubleshooting guide; and
- (d) 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 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**

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**

Table A2 sets out the minimum sampling and testing frequency plan for a manufacturer to demonstrate compliance of product(s) to this 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 Technical Specification.

**Table A1—TYPE TESTS**

Characteristic	Clause	Requirement	Test method	Frequency
Materials	5	Composition, temper, etc	Review materials parts lists and compliance certificates	At any change in materials specification
Marking	6	Labelling/markings	Review of documentation/physical examination	At any change in design/specification
Packaging	7	Protection from transit damage		
Design	8.1	End connections	AS 3688	At any change in the design
Performance	9.1	Hydrostatic strength test	AS/NZS 3718	At any change in design or manufacturing process
	9.2	Watertightness test	AS/NZS 3718	
	9.3	Back-siphonage test	AS/NZS 2845.1	
	9.4	Endurance test	AS/NZS 2845.1	
Product documentation	11	Product data and installation and maintenance instructions	Documentation review	At any change factors that require a change in design documentation, e.g., amendments to AS/NZS 3500 series of Standards

**Table A2— BATCH RELEASE TESTS**

Characteristic	Clause	Requirement	Test method	Frequency
Materials	5	Composition, temper, etc.	Review materials parts lists and compliance certificates	Once per batch
Marking	6	Marking	Visual examination	100%
Design	8.1	End connections	AS 3688	Once per batch
Performance	9.2	Watertightness test	AS/NZS 3718	100% for cast bodies/ once per batch for others
	9.3	Back-siphonage test	AS/NZS 2845.1	Once per batch



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