



WMTS-050:2018 Prefabricated modules

WaterMark Technical Specification

2018



ABC



WMTS-050:2018

Prefabricated modules

WaterMark Technical Specification

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ATS 5200.050 – 2005 Technical Specification for Plumbing and Drainage Products
Prefabricated bathroom modules

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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). 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 5200.050 – 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).

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PREFACE

WaterMark Technical Specification WMTS-050: 2016 Technical Specification for plumbing and drainage products, Prefabricated bathroom modules was originally prepared by the Joint Standards Australia/Standards New Zealand Committee WS-031, Technical Procedures for Plumbing and Drainage Products Certification.

WaterMark Technical Specification WMTS-050:2018 Technical Specification for plumbing and drainage products , Prefabricated modules, incorporates an ammendment to expand the scope to enable variations of module types to be assessed.

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). These lists will be version controlled with appropriate historic references.



ACKNOWLEDGEMENTS

Australian Technical Specification ATS 5200.050 – 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 5200.050 – 2005.

- AUSTAP
- Australian Electrical and Electronic Manufacturers Association
- Australian Industry Group
- Building Officials Institute of New Zealand
- Certification Interests (Australia)
- Consumer Electronics Suppliers Association
- Copper Development Centre—Australia
- CSIRO Manufacturing & 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 & Waste Association
- Plastics Industry Pipe Association of Australia
- Plumbing Industry Commission
- South Australian Water Corporation
- Water Services Association of Australia

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1 SCOPE

This Technical Specification sets out minimum requirements for prefabricated modules that include integral components, accessories and fittings, designed for direct connection to the water supply and sanitary drainage system.

Products typically covered by this Technical Specification include—

- (a) shower modules; and
- (b) bathroom modules; and
- (c) laundry modules; and
- (d) Kitchen modules; or
- (e) Any combination of the above.

NOTES:

- 1 Modules that do not include integral components and accessories and rely on those available in the marketplace for connectivity do not require certification (see WaterMark Certification Scheme Schedule of Specifications).*
- 2 Where the product includes components or accessories they may be subject to other regulatory requirements e.g., electrical safety, electromagnetic compatibility (EMC).*

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

- 1589 Copper and copper alloy waste fittings
- 2887 Plastic waste fittings
- 3688 Water supply—Metallic fittings and end connectors

AS/NZS

- 3500.0 Plumbing and Drainage - Part 0: Glossary of terms
- 3500.1 Plumbing and Drainage - Part 1: Water supply
- 3500.2 Plumbing and Drainage - Part 2: Sanitary plumbing and drainage
- 3500.4 Plumbing and Drainage - Part 4: Heated water services
- 4020 Testing of products for use in contact with drinking water
- NCC
- PCA Plumbing Code of Australia
- BCA Building Code of Australia

4 DEFINITIONS

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

5 VOID

6 MARKING

Each module shall be permanently and legibly marked with the following:

- (a) Manufacturer's name, brand or trademark.
- (b) WaterMark.
- (c) Licence number.
- (d) Each fitting included in the module to be marked in accordance the relevant Standard for that product.
- (e) Maximum operating temperature and pressure or the total module.
- (f) The flow rate from each fitting. Where more than one showerhead is included then the combined flow from all heads to be included.
- (g) The number of this Technical Specification, i.e., WMTS-050.

NOTES:

- 1 *The number of the Technical Specification may be in abbreviated form, i.e., S050, where space is limited.*

- 2 *These products are required to include water efficiency labelling under the Water Efficiency Labelling Standards Act 2003. Each component will require testing and labelling.*

7 PACKAGING

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

8 DESIGN

8.1 Integral plumbing components, accessories or fittings

Where the product includes integral plumbing components, accessories or fittings that require certification as identified in the Plumbing Code of Australia, they shall comply with the applicable requirements of the specification for that product as identified in WaterMark Technical Specification series.

8.2 Interconnection of components, accessories or fittings

The interconnection of module components shall be in accordance with AS/NZS 3500.1, AS/NZS 3500.2 and AS/NZS 3500.4.

8.3 End connections

End connections for connection to metallic or plastics piping systems shall comply with the requirements of the relevant Standard for the piping system.

8.4 Water seal

If a module has an integral waste trap, the water seal shall comply with AS 1589 or AS 2887 and comply with the testing requirements of AS/NZS 3500.2.

8.5 Steam generators

If a module includes a steam-generating device, it shall incorporate controls and be located in a position so as to prevent injury and property damage.

8.6 Structural integrity (unvented pressure vessel)

Where the product includes an unvented pressure vessel, the manufacturer shall demonstrate the structural integrity of the pressure vessel and associated piping in accordance with the National Construction Code and relevant Standard.

8.7 Backflow prevention

The following apply:

- (a) Backflow prevention devices, where required for individual protection, shall be of the type specified in AS/NZS 3500.1.
- (b) Where backflow protection devices are required to be installed external to the appliance or apparatus, for compliance with AS/NZS 3500.1, the devices shall be supplied with the product.

9 PERFORMANCE REQUIREMENTS AND TEST METHODS

9.1 Products in contact with drinking water

Products used up to the backflow prevention device shall comply with AS/NZS 4020. Products shall be tested as end-of-line devices.

9.2 Hydrostatic strength of module

When tested in accordance with Appendix B, at twice the maximum operating pressure at the maximum operating temperature, the module shall not leak or show signs of distortion, splitting, cracking, breakage or other failure.

9.3 Performance of integral components

Where the product includes integral plumbing components, accessories or fittings that require certification, as identified in the Plumbing Code of Australia, shall comply with the performance requirements of the specification for that product as identified in WaterMark Technical Specification series.

10 VOID

11 PRODUCT DOCUMENTATION

11.1 Product data

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

- (a) delivery volume and flow rate;
- (b) waste discharge flow rates and allowable temperatures;
- (c) minimum operating pressure; and
- (d) hydrostatic pressure loss.

11.2 Installation and maintenance instructions

11.2.1 *Installation instructions*

Full installation instructions shall be provided with the module, which shall include the following:

- (a) Information required to enable the module to be installed in accordance with the relevant clauses of AS/NZS 3500.1, AS/NZS 3500.2 and AS/NZS 3500.4.
- (b) Detailed step-by-step instructions.
- (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 parts 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 is to 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 |
|--------------------------|--------|---|--|--|
| Marking | 6 | Labelling/markings | Review of documentation/ physical examination | At any change in design/specification |
| Packaging | 7 | Protection of transit damage | | |
| Design | 8.1 | Integral plumbing components, accessories or fittings | Relevant specifications | At any change in design/specification |
| | 8.2 | Interconnection of components, accessories or fittings | Design review/ Inspection | |
| | 8.3 | End connections | Relevant specifications | |
| | 8.4 | Water seal | Relevant specifications | |
| | 8.5 | Steam generator | Design review/ Inspection | |
| | 8.6 | Structural integrity (unvented pressure vessel) | Relevant specifications | |
| | 8.7 | Backflow prevention | Relevant specifications | |
| Performance | 9.1 | Products in contact with drinking water | AS/NZS 4020 | At any change in materials, formulation or design or every five years, whichever occurs first |
| | 9.2 | Hydrostatic strength of module | Appendix B | At any change in design |
| | 9.3 | Performance of integral components | Relevant WMTS specification | |
| Product documentation | 11 | Product data, installation and maintenance instructions | Visual inspection | At any change in data |

Table A2—BATCH RELEASE TESTS

| Characteristic | Clause | Requirement | Test method | Frequency |
|----------------|--------|---------------------------------------|--|-------------------------------|
| Marking | 6 | Marking | Visual examination | 100% |
| Performance | 9.2 | Hydrostatic strength of module | App. B except pressure to be maintained for a minimum of 10s | 100% |
| | 9.3 | Performance of integral components | Relevant WMTS specification | As per relevant specification |

Appendix B MODULE HYDROSTATIC STRENGTH TEST

(Normative)

B.1 SCOPE

This Appendix sets out the method for determining the ability of a module to withstand hydrostatic pressures without leakage or distortion, splitting, cracking, breakage or other failure.

B.2 PRINCIPLE

The module is subjected to a hydrostatic pressure for a period of time at a determined temperature and inspected for leakage and structural damage.

B.3 APPARATUS

The following is required:

- (a) Water supply sufficient to maintain the required pressure and temperature.
- (b) Pressure gauge.

B.4 PROCEDURE

The procedure shall be as follows:

- (a) Connect the supply water to the module and purge all the air from the system.
- (b) Circulate water at the required temperature through the components subject to permanent hydrostatic pressure for a period of no less than 15 minutes.
- (c) Slowly increase the pressure until it reaches the test pressure.
- (d) Maintain this pressure for 15 +5, -0 min.
- (e) Release the pressure.
- (f) Record the test pressure, temperature and duration at this pressure.
- (g) Inspect the system for any leaks or distortion, splitting, cracking, breakage or other failure.

B.5 TEST REPORT

The following shall be reported:

- (a) Manufacturer, model, type and size of device.
- (b) Any leakage or structural damage.
- (c) Reference to this test method, i.e., WMTS-050, Appendix B.

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