WATERMARK TECHNICAL SPECIFICATION TEMPLATE

This document includes the requirements and guidance for writing and formatting a WaterMark Product Specification for the evaluation of plumbing and drainage products, and outlines the typical requirements for these products.

This template is to be used to create a WaterMark Technical Specification (WMTS). This template may also be used for product specifications other than WMTS, such as Australian Standards. The template includes set margins, headers and footers, line spacing, and heading styles. The template has been created in Microsoft Word 2013.

Note: When published by the ABCB as a WMTS, the ABCB will attach standard covers, a title page, disclaimer, and a preface for this document. If published by a third party standards writing body as a product specification other than a WMTS, that body will format the document according to its publishing styles.

All images and tables within the WMTS are to use alt text. Providing alt text allows all users to access the same information, whether they can see the image or not.

The following table describes how to use the styles within this template.

TEMPLATE STYLES

|  |  |
| --- | --- |
| **Style** | **To Format** |
| WMTS Heading Cover | Main title of document (used on inside cover page, not included in this template) |
| WMTS Heading 1 | Section title |
| WMTS Heading 2 | Major headings within each section |
| WMTS Heading 3 | Sub heading used within major heading |
| WMTS Sub Heading | Sentence in a numbered list |
| WMTS Body Text | Normal text paragraphs |
| WMTS Appendix Heading 1 | Appendix heading |
| WMTS Appendix Sub Heading | Major headings within each appendix |
| WMTS Appendix Sub Heading 2 | Sub heading used within major appendix heading |
| WMTS Table Heading | Heading used to describe table or diagram |
| WMTS Table Text | Text in table body |
| WMTS Normal Heading | Titles for Acknowledgements, Preface and Disclaimer (not used in template) |

REQUIREMENTS FOR SPECIFICATIONS

General

A WMTS shall include the following clauses and appendices in the order shown:

1 Scope

2 Application

3 Referenced documents

4 Definitions

5 Materials

6 Marking

7 Packaging

8 Design

9 Performance criteria and test methods

10 Test sequence and test sample plan

11 Product documentation

Means for demonstrating compliance with this specification (Appendix A)

Product performance test methods (Appendix B)

Where there is no requirement to use one of the above clauses in the specification, the heading shall be annotated with the word ‘VOID’ e.g. 7. Packaging (VOID).

The specification should include, but is not limited to, the requirements listed. The requirements listed should be used as guidance.

Where applicable, reference should be made to the relevant Australian Standard, WaterMark Product Specification or an approved (endorsed) international Standard, rather than reproducing content from such documents.

GUIDANCE FOR DRAFTING APPENDICES

**Means for demonstrating compliance with this specification (Appendix A)**

An ‘Appendix A’ as set out in this document shall be included (see Appendix A).

This Appendix sets out the means by which compliance with the specification can be demonstrated by a manufacturer for the purpose of product certification.

Tables A1, A2, A3 and A4 (where applicable) shall be completed, taking into account the relevant requirements for the product, prior to the submission of the specification to the ABCB Office as follows:

a) Table A1 shall specify tests by one of the following options:

1 Where the specification is a modification of an existing Australian Standard, Table A1 in the relevant Standard, as modified by the clauses in the specification, shall apply.

2 Where the specification is developed for new products not based on an existing standard, Table A1 shall include type tests to evaluate the product against each clause of the specification.

b) Table A2 shall specify tests by one of the following options:

1 Where the specification modifies an existing Australian Standard, Table A2 in the relevant standard, as modified by the clauses in the specification, shall apply.

2 Where the specification is developed for new products not based on existing standards, Table A2 shall include batch release tests to evaluate the consistency of production in accordance with the sampling plan and appropriate to the risks as identified in the risk assessment and 100% compliance with critical performance criteria as appropriate.

c) Table A3 shall include annual inspection requirements to evaluate the product against each relevant clause of the specification.

d) Table A4 shall include re-evaluation tests to evaluate the product against each clause of the specification.

Product performance test methods (Appendix B)

Product testing should utilise tests in published recognised specifications. Where product specific tests are developed, each individual test method or test apparatus specification shall be detailed in a separate appendix starting with Appendix B designation.

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Scope

The Scope clause shall include, as a minimum, the following:

Product description.

(Include reference to any standard used as the basis of this specification and include a statement that this specification should be read in conjunction with the referenced standard, see Example).

Size range.

Operating conditions (limitations, pressure and temperature).

EXAMPLE

This specification shall be read in conjunction with AS/NZS 3718.

Application

The Application clause shall include intended use and location.

The following statement shall also be included under the Application clause.

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

Referenced documents

The Referenced Documents clause shall include a list of all documents referenced in this specification.

The referenced documents shall be publicly available. Upon request, referenced documents, in English, shall be made available to the ABCB.

Definitions

The Definitions clause shall include the following statement:

For the purpose of this specification, the definitions given in the WaterMark Scheme Rules, Plumbing Code of Australia, AS/NZS 3500.0 and those below apply.

Any additional definitions shall be listed after the preceding statement.

NOTE: See other similar Standards for examples of definitions.

Materials

The Materials clause shall specify the requirements for materials used in the product and address any specific requirements relevant to the installation, operation and maintenance of the product. Requirements to be included are typically the following:

Compliance with recognised material Standards, including the specification of the particular grade, type, condition, form, etc.

Specification of corrosion-resistant materials, e.g. copper alloy to AS 2345.

Specification of means to achieve corrosion resistance, e.g. coatings to AS/NZS 4158.

Specification of means to achieve UV resistance for products appropriate for typical storage and installation conditions.

Compatibility with other materials and products, e.g. some plastics with copper alloy.

Strength, short- and long-term, at relevant operating temperatures.

Marking

The Marking clause shall specify the appropriate markings required for traceability, identification of a licensed product by installers and other markings relevant to the correct installation and operation of the product.

The marking clause shall include the following statement:

Markings to be placed on products or packaging shall, as a minimum, be in accordance with clause 9.6 of the [Manual for the WaterMark Certification Scheme](http://www.abcb.gov.au/Resources/Publications/Certification/Manual-for-the-WaterMark-Certification-Scheme).

Any additional marking requirements specific to the product shall be listed after the preceding statement.

Packaging

The Packaging clause shall specify any specific packaging requirements to enable the product to be handled, transported and stored satisfactorily prior to installation.

EXAMPLE

Some plastic fittings for fusion welding should be individually packaged in sealed bags to prevent any contamination.

Design

The Design clause shall specify the requirements for products, relevant to their suitability for use in a plumbing and/or drainage system, including installation, operation and maintenance of the product.

Examples of design requirements are as follows:

Structural integrity, e.g. wall thickness.

Connectivity, e.g. standardised end connections that enable integration within a plumbing and/or drainage system.

Odour control, e.g. water seal and trap design.

Backflow prevention, e.g. air gap.

Water conservation, e.g. leakage.

Environmental impact, e.g. sewage overflows.

Hydraulic design, e.g. flow capacity.

Software, e.g. reliability.

Identification, e.g. coloured striping.

Performance criteria and test methods

The Performance Criteria and Test Methods clause shall include the list of tests and the performance criteria that the products need to comply with, including reference to any relevant test methods.

Product-specific methods of test should also be individually detailed in their own appendix.

NOTE: It may assist the product certification process if test reports and independent product performance appraisals are provided with proposed product specification.

The following are examples of performance tests that should be considered for inclusion as appropriate to the product in its intended application.

Suitability for use in contact with drinking water (see Example and Note below);

Suitability for use in the intended environment, e.g. chemical resistance.

Strength, e.g. short- and long-term, structural, fatigue, torque, bending.

Watertightness, e.g. body, joints.

Strength of operating parts, e.g. spindle, handle.

Functional tests, i.e. objective tests to demonstrate fitness for intended purpose.

Durability, e.g. endurance testing.

EXAMPLE

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

NOTE: The limitations and application of the scaling factors have to be determined based on how and where the product is used, e.g. inline or end-of-line.

Test sequence and test sample plan

The Test Sequence and Test Sample Plan clause shall, where applicable, include the sequence in which performance tests are to be conducted and the sampling plan, specifying how the samples are to be selected.

Product documentation

The Product Documentation clause shall specify any product documentation needed to address any occupational, health and safety issues and to enable correct installation, operation and maintenance of the product. Documents to be included are typically the following:

Design manuals.

Reference to installation in accordance with the PCA, including the installation of any non-integral backflow prevention device and any limitations on the product.

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.

Handling and storage, material safety data sheets (Safe Work Australia).

Operating instructions.

Maintenance instructions.

Product data.

All documentation shall be written in clear, concise, plain English supported by relevant figures and diagrams. Documentation may be provided in either hard copy or electronic form, e.g. installation DVDs or links to information that may be downloaded from a website.

Means for demonstrating compliance with this Specification

(Normative)

SCOPE

This appendix sets out the means by which compliance with this specification shall be demonstrated by a manufacturer under the WaterMark Certification Scheme.

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.

PRODUCT CERTIFICATION

The purpose of product certification is to provide independent assurance of the claim by the manufacturer that products comply with this specification.

The WaterMark Certification Scheme serves to indicate that the products consistently conform to the requirements of this 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. Minimum annual inspection requirements, as detailed in Paragraph A5 and Table A3, shall be used by the WaterMark Conformity Assessment Body for annual product conformity surveillance. Re-evaluation testing, as detailed in Paragraph A5 and Table A4, shall be used by the WaterMark Assessment Body in conjunction with renewal of the certification.

DEFINITIONS

Batch release test

Testing performed by the manufacturer on a batch of components, which has to be satisfactorily completed before the batch can be released.

Product inspection

Examination of certified product, conducted during annual product conformity surveillance, to determine its conformity with the specific requirements of its current certification and WaterMark Licence.

Production batch

A clearly identifiable collection of units, manufactured consecutively or continuously under the same conditions, using material or compound to the same specification.

Re-evaluation testing

Testing carried out in conjunction with renewal of the certification.

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.

Sampling plan

A specific plan that indicates the number of units of components or assemblies to be inspected.

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.

Type testing (TT)

Testing performed to demonstrate that the material, component, joint or assembly is capable of conforming to the requirements given in the specification.

TESTING AND INSPECTION

Type testing

Table A1 sets out the requirements for type testing and frequency of re-verification.

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 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.

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 specification.

Minimum annual inspection requirements

Table A3 sets out the minimum annual inspection requirements to be undertaken.

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 operation | List Appendix or Standard where the test method is found | At any change in the design |
| 8.2 | Inlet connection  | Design review |
| Performance | 9.1 | Products in contact with water | AS/NZS 4020 | At any change in materials, formulation or design, or every five years, whichever occurs first |
| 9.2 | List performance criteria from Clause 9 | List Appendix or Standard where the test method is found | At any change in design or manufacturing process |
| 9.4 | List performance criteria from Clause 9 | List Appendix or Standard where the test method is found |
| Product documentation | 11 | Product data/Installation and maintenance instructions | Product documentation | At any change to installation requirements |

**NOTE: The above table is an example that should be adjusted for each specification.**

**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 | List design criteria from section 8 | List Appendix or Standard where the test method is found | Once per batch |
| Performance | 9.1 | List performance criteria from Clause 9 | List Appendix or Standard where the test method is found | 100% for cast bodies, once per batch for others |
| 9.2 | List performance criteria from Clause 9 | List Appendix or Standard where the test method is found | Once per batch |

**NOTE: The above table is an example that should be adjusted for each specification.**

TABLE A3

MINIMUM ANNUAL INSPECTION REQUIREMENTS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Characteristic** | **Clause** | **Requirement** | **Verification method** | **Frequency** |
| Design, assembly and component | 8.1 | General operation | Visual and component examination | Sample from product family, covering all families within 5 year certification cycle |
| 8.2 | Inlet and outlet connections | Visual and component examination |
| Dimensional inspection | 9.1 | Dimensional, material, thickness requirement | Visual and dimensional and component examination |
| 9.2 | Dimensional, material, thickness requirement | Visual and dimensional and component examination |
| 9.4 | Dimensional, material, thickness requirement | Visual and dimensional and component examination |
| Product marking | 6 | Product marking, use of the WaterMark logo and license number | Visual inspection of marked product, relevant packaging and documentation |
| Product documentation | 11 | Product data/Installation and maintenance instructions | Product documentation |

**NOTE: The above table is an example that should be adjusted for each specification.**

TABLE A4

RE-EVALUATION TESTING

|  |  |  |  |
| --- | --- | --- | --- |
| **Characteristic** | **Clause** | **Requirement** | **Test method** |
| Materials | 5 | Materials | Review materials parts lists and compliance certificates |
| Design | 8.1 | General operation | List Appendix or Standard where the test method is found |
| 8.2 | Inlet connection  | Design review |
| Performance | 9.1 | Products in contact with water | AS/NZS 4020 |
| 9.2 | List performance criteria from Clause 9 | List Appendix or Standard where the test method is found |
| 9.4 | List performance criteria from Clause 9 | List Appendix or Standard where the test method is found |
| Product documentation | 11 | Product data/Installation and maintenance instructions | Product documentation |

**NOTE: The above table is an example that should be adjusted for each specification.**

Product performance test methods

(Normative)

Product testing should utilise tests in published, recognised specifications. Where product specific tests are developed, each individual test method or test apparatus specification shall be detailed in a separate appendix starting with Appendix B designation.