

PLUMBING CODE OF AUSTRALIA

2004

FINAL DRAFT

N P R F

National Plumbing Regulators Forum

CONTENTS AND INTRODUCTION

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INTRODUCTION

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INTRODUCTION

THE PLUMBING CODE OF AUSTRALIA

The Plumbing Code of Australia (*Code*) is produced by the National Plumbing Regulators Forum (*NPRF*) on behalf of each State and Territory Government.

THE NATIONAL PLUMBING REGULATORS FORUM

The *NPRF* is a co-operative arrangement between jurisdictions and has no executive powers. Forum members represent bodies responsible for regulation of on-site *plumbing* and/or occupational registration.

The *NPRF* is the national policy advisory body with responsibility for the policy direction relating to technical matters associated with the *Code*.

The *NPRF* has a mission to provide benefits to Australian Governments, the industry and the public by striving for a consistent, efficient and effective regulatory environment for plumbing activities and for achieving appropriate levels of public health, safety, resource and environment conservation, sustainability and *amenity*, in the interest of all consumers throughout Australia.

A principal objective of the *NPRF* is to develop a national policy framework that encourages and assists coordinated plumbing regulatory arrangements thereby protecting public interest in a cost effective manner.

The *NPRF* was established subsequent to the expiry of the Memorandum of Understanding between the then Agriculture and Resources Management Council of Australia and New Zealand and Standards Australia for the establishment and maintenance of the Committee for Plumbing Products Authorisation.

The Laver Report (2000)¹ supported the establishment of such a Forum.

THE PLUMBING CODE OF AUSTRALIA - CONTENT

The goal of the *Code* is to enable the achievement of an acceptable standard of installation at all times in order to provide for public health, safety and *amenity*, resource and environment conservation, sustainability and protection of public and private infrastructure for the benefit of the community now and in the future.

The goal is applied so that the requirements in the *Code* extend no further than is necessary in the public interest, are cost effective, easily understood and are not needlessly onerous in their application.

To achieve the above goal, the *Code*:

- (a) creates an accountable and transparent framework for product authorisation;
- (b) establishes national *objectives* for *plumbing* work on a performance basis;
- (c) fosters water and *energy conservation*;

¹ Review of the Australian Building Codes Board, February 2000 – P. Laver, L Butterfield & G Huxley.
Published by Department of Industry Science and Resources

- (d) encourages best practice;
- (e) references effective solutions;
- (f) calls up relevant Australian Standards; and
- (g) is compatible with the Building Code of Australia (*BCA*).

This edition of the *Code* sets out performance based technical provisions for the design, construction, installation, replacement, repair, alteration and maintenance of *plumbing* and *drainage* installations throughout Australia. It also sets out the requirements for the use of materials and products in *plumbing* and *drainage* installations and defines the processes for the certification and authorisation of materials and products that require statutory authorisation to enable their use in *plumbing* and *drainage* installations.

The requirements in the *Code* are designed to ensure that any *plumbing* and *drainage* installation is fit for its intended purpose, do not have an adverse impact on the environment and can continue to function as intended without excessive maintenance. It is to be noted that the *Code* may need to be used in conjunction with the *BCA* which contains detailed provisions for the design and construction of buildings and other structures relating to building integrity and occupancy.

Some overlap necessarily exists between the *Code* and the *BCA*. Consistency between the two documents is maintained where overlaps occur. It is expected that unnecessary overlaps will be progressively reduced as each document is reviewed and revised with time through active liaison between the *NPRF* and the Australian Building Codes Board.

STATE AND TERRITORY LEGISLATIVE ARRANGEMENT

The *Code* is only given legal effect by relevant legislation in each State and Territory. This legislation consists of an Act and subordinate legislation which empowers the regulation of certain aspects of plumbing installation and contains the administrative provisions necessary to give effect to the legislation.

The adoption of the *Code* by a State or Territory could be subject to the variation or deletion of some of its provisions, or the addition of extra provisions.

Any provision of the *Code* may be overridden by, or subject to, State and Territory legislation. The *Code*, therefore, is to be read in conjunction with that legislation. Any queries on such matters should be referred to the State or Territory authority having jurisdiction for on-site plumbing installation matters.

At the time of publication, cold water services, *heated water* services, *non-drinking water* services, sanitary *plumbing* systems and sanitary *drainage* systems were regulated by plumbing regulators of all States and Territories. However, different approaches were taken with regards to the regulation of fire fighting water services, stormwater *drainage* systems, heating, ventilation and air conditioning, on-site wastewater management systems and liquid trade waste systems.

DEFINITIONS

Words with special meanings are printed in italics and are defined in A1.1 – “Interpretation”.

If a word is not defined in this *Code*, the meaning (if any) attributed to it under AS/NZS 3500.0 Glossary of Terms, should be used unless the contrary intention appears.

DOCUMENTATION OF DECISIONS

Decisions made under the *Code* should be fully documented and copies of all relevant documentation should be retained.

Examples of the kind of documentation which should be prepared and retained include:

- (a) Details of the *Plumbing Solution* including all relevant plans and other supporting documentation.
- (b) In cases where an *Alternative Solution* has been proposed –
 - i. details of the relevant *Performance Requirements*; and
 - ii. the *Assessment Method* or methods used to establish compliance with the relevant *Performance Requirements*; and
 - iii. details of any *Expert Judgment* relied upon including the extent to which the judgment was relied upon and the qualifications and experience of the *expert*; and
 - iv. details of any tests or calculations used to determine compliance with the relevant *Performance Requirements*; and
 - v. details of any Standards or other information which were relied upon.

STRUCTURE

The *Code* has been structured as set out in A0.3 and shown in Figure A0.3. It is the intent of the *NPRF* that the *Objectives* and *Functional Statements* be used as an aid to the interpretation of the *Code* and not for determining compliance with the *Code*.

FURTHER REVIEW OF THE PLUMBING CODE OF AUSTRALIA

Regular reviews are planned for the *Code* to improve clarity of provisions, update references and to reflect the results of research and improved technology. In this regard, the *NPRF* is cognisant of the important role that industry stakeholders should have in the formulation and review of the *Code* and in this context will be seeking ongoing consultation with industry stakeholders in any future revisions.

Later editions may therefore include revised *Objectives*, *Functional Statements* and *Performance Requirements*.

COMMENTS

Comments in writing on any matter concerning the text, presentation or further development of the *Code* are invited from plumbing and other authorities, industry organisations, professional operatives and the public generally. These comments should be addressed to:

National Plumbing Regulators Forum
C/O Plumbing Industry Commission
PO Box 360
Caulfield East VIC 3145

SECTION **A**

GENERAL PROVISIONS

- A0** **APPLICATION**
- A1** **INTERPRETATION**
- A2** **ACCEPTANCE OF DESIGN AND CONSTRUCTION**

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PART A0 - APPLICATION

A0.1 ADOPTION

The dates of adoption of the *Code* and its amendments will be shown in the “History of Amendments” division.

A0.2 SCOPE

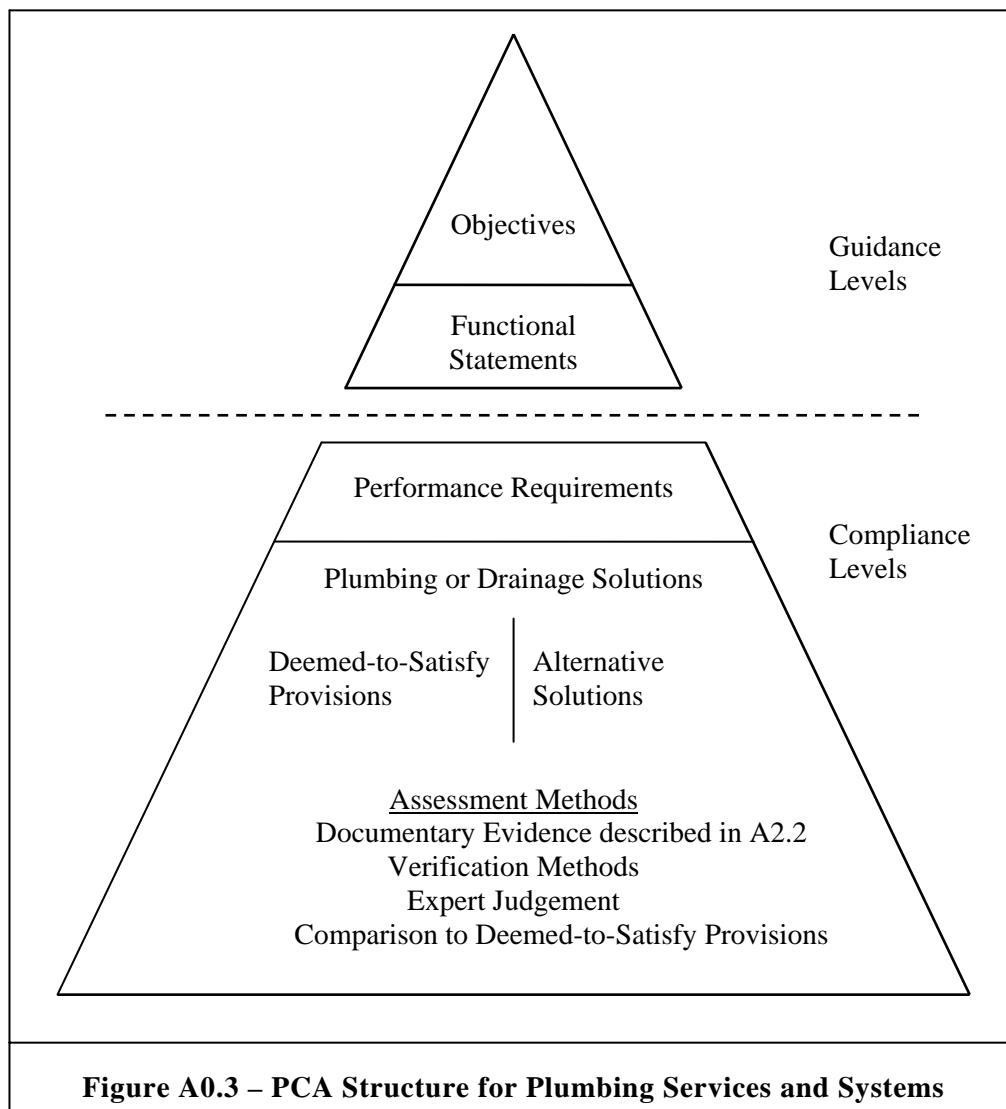
- (a) Sections B to F of the Plumbing Code of Australia contain the technical *Performance Requirements* for the design, construction, installation, replacement, repair, alteration and maintenance of:
- i. water services;
 - ii. sanitary *plumbing* and *drainage* systems;
 - iii. stormwater *drainage* systems;
 - iv. heating, ventilation and air conditioning systems; and
 - v. *on-site wastewater management systems*.
- (b) Section G of the *Code* contains the procedures for certification of *plumbing* and *drainage* products for authorised use in new installations, alterations, additions, replacement and repairs to existing installations.

A0.3 STRUCTURE

The structure of Sections B to F of the *Code* comprises the following:

- (a) the *Objectives*;
- (b) the *Functional Statements*;
- (c) the *Performance Requirements* with which all *Plumbing Solutions* must comply; and
- (d) the *Plumbing Solutions*.

This is shown diagrammatically in Figure A0.3.



A0.4 COMPLIANCE WITH THE PLUMBING CODE OF AUSTRALIA

A *Plumbing Solution* will comply with the *Code* if it satisfies the *Performance Requirements*.

A0.5 MEETING THE PERFORMANCE REQUIREMENTS

Compliance with the *Performance Requirements* can only be achieved by:

- (a) complying with the *Deemed-to-Satisfy Provisions*; or
- (b) formulating an *Alternative Solution* which;
 - i. complies with the *Performance Requirements*; or
 - ii. is shown to be at least *equivalent* to the *Deemed-to-Satisfy Provisions*; or
- (c) a combination of (a) and (b).

A0.6 OBJECTIVES AND FUNCTIONAL STATEMENTS

The *Objectives* and the *Functional Statements* may be used as an aid to interpretation.

A0.7 DEEMED-TO-SATISFY PROVISIONS

A *Plumbing Solution* which complies with the *Deemed-to-Satisfy Provisions* is deemed to comply with the *Performance Requirements*.

A0.8 ALTERNATIVE SOLUTIONS

- (a) An *Alternative Solution* must be assessed according to one or more of the *Assessment Methods*.
- (b) An *Alternative Solution* will only comply with the *Code* if the *Assessment Methods* used to determine compliance with the *Performance Requirements* have been satisfied.

A0.9 ASSESSMENT METHODS

The following *Assessment Methods*, or any combination of them, can be used to determine that a *Plumbing Solution* complies with the *Performance Requirements*:

- (a) Evidence to support that the use of a material or product, the design or the form of construction meets a *Performance Requirement* or a *Deemed-to-Satisfy Provision* as described in A2.2.
- (b) *Verification Methods* such as –
 - i. The *Verification Methods* in the *Code*; or
 - ii. Such other *Verification Methods* as the authority having jurisdiction accepts for determining compliance with the *Performance Requirements*.
- (c) Comparison with the *Deemed-to-Satisfy Provisions*.
- (d) *Expert Judgment*.

PART A1 - INTERPRETATION

A1.1 DEFINITIONS

Unless the contrary intention appears –

Adequate means adequate to achieve the particular *objective* of the *Code*.

Alternative Solution means a *Plumbing Solution* which complies with the *Performance Requirements* other than by reason of satisfying the *Deemed-to-Satisfy Provisions*.

Amenity means an attribute which contributes to the health, physical independence, comfort and well being of people.

Approved disposal system means a system for the disposal of sewage or stormwater approved by an authority having jurisdiction.

Assessment Method means a method used for determining that a *Plumbing Solution* complies with the *Performance Requirements*.

BCA means the Building Code of Australia.

Blockage means an obstruction within a *drainage* system.

Certification mark means WaterMark.

Certifying Body (CB) means an organisation registered with and approved by *JAS-ANZ* to conduct assessments leading to product certification and contracted with Standards Australia International to issue the WaterMark *licence*.

Code means the Plumbing Code of Australia.

Deemed-to-Satisfy Provisions means provisions which are deemed to satisfy the *Performance Requirements*.

Drainage means any sanitary, liquid trade waste drainage or stormwater drainage system.

Drinking water means water intended primarily for human consumption but which has other domestic uses – see National Health and Medical Research Council of Australia, Drinking Water Guidelines.

Energy conservation relates to the effective and efficient use of energy through the design, construction, installation, replacement, repair, alteration and maintenance of *plumbing* installations and systems.

Equivalent means equal in effect.

Expert means a person who has the qualifications and experience to determine whether a *Plumbing Solution* complies with the *Performance Requirements*.

Expert Judgment means the judgment of a person who has the qualifications and experience to determine whether a *Plumbing Solution* complies with the *Performance Requirements*.

Functional Statement describes what the *Plumbing Solution* needs to do to meet the *Objective*.

Heated water means water that has been intentionally heated. It is normally referred to as hot water or warm water

JAS-ANZ means the Joint Accreditation System of Australia and New Zealand

Licence means a formal document which covers the use of the WaterMark certification mark owned by Standards Australia and administered by the *NPRF*. It is granted to manufacturers whose materials or products are manufactured under a Quality Assurance Program endorsed by a *Certifying Body*.

Loss means either: physical damage, financial loss or loss of *amenity*.

Network Utility Operator a person who:

- (a) Undertakes the piped distribution of drinking water for supply; or
- (b) Is the operator of a sewerage system or a stormwater drainage system

Non-Drinking Water means water which is not *drinking water*.

Objective means a statement contained in the *Code* which is considered to reflect community expectations.

On-site wastewater management system means a system installed on premises that receives and treats wastewater generated on the premises and applies the resulting effluent to an approved disposal or re-use system.

Overflow devices are devices that provide relief to a water service, a sanitary plumbing and drainage system or a stormwater system to avoid the likelihood of uncontrolled discharges.

Part means the particular part or section of the *Code*.

Performance Requirement means a requirement which states the level of performance which a *Plumbing Solution* must meet.

Plumbing means any water plumbing, roof plumbing or sanitary plumbing system.

Plumbing or Drainage Solution means a solution which complies with the *Performance Requirements* and is:

- (a) an *Alternative Solution*; or
- (b) a solution which complies with the *Deemed-to-Satisfy Provisions*; or
- (c) a combination of (a) and (b).

Point of connection:

- (a) for a *heated water* service means the point where the water heater connects to the cold water service downstream of the isolation valve;
- (b) for sewage disposal means the point where the on-site *drainage* system connects to the *Network Utility Operator's* sewerage system or to an on-site wastewater system;

- (c) for stormwater disposal means the point where the on-site *drainage* system connects to the *Network Utility Operator's* stormwater system or to an *approved disposal system*; and
- (d) for a water service means the point where the service pipe within the premises connects to the *Network Utility Operator's* property service or to an alternative water supply system.

Professional engineer means a person who is-

- (a) if legislation is applicable – a registered *professional engineer* in the relevant discipline who has appropriate experience and competence in the relevant field; or
- (b) if legislation is not applicable-
 - i. a Corporate Member of the Institution of Engineers, Australia; or
 - ii. eligible to become a Corporate Member of the Institution of Engineers, Australia, and has appropriate experience and competence in the relevant field.

Recognised auditing body means a person or organisation appropriately licensed by the *JAS-ANZ* or one that is accepted by the relevant authority having jurisdiction.

Recognised credentials means qualifications and experience in the area of *plumbing* and *drainage* in question recognised by the authority having jurisdiction.

Recognised expert means a person with qualifications and experience in the area of *plumbing* or *drainage* in question recognised by the authority having jurisdiction.

Recognised testing laboratory means a testing laboratory registered with the National Association of Testing Authorities and acceptable to the *Certifying Body* as being competent to conduct type tests under the WaterMark Scheme.

Specification means a *specification* that is approved by the *NPRF* through *WS-031* and *WS-014* as applicable to the material or product being submitted for authorisation. A *specification* may be an Australian Standard or *specification* listed in AS 5200 or a *specification* prepared by a *Certifying Body* and manufacturer and is in a generic product Standard format, called an Australian Technical Specification (ATS).

Verification Method – means a test, inspection, calculation or other method that determines whether a *Plumbing or Drainage Solution* complies with the relevant *Performance Requirement*.

Warranty means a statement by the manufacturer or supplier of a product that says that the product is suitable for use under specified conditions. The conditions may be limits on water pressure, water temperature or any other operating circumstance.

NOTE: The statement must be included with the product when sold and may be stamped onto the product, printed on the packaging, or included as part of the installation instructions.

WaterMark Register means a listing of WaterMark certified products maintained by the *Certifying Body*.

Watertight means will not allow water to pass from the inside to the outside of the component or joint and vice versa.

WS-014 means the Standards Australia Standards New Zealand Joint Technical Committee WS-014, Plumbing and Drainage

WS-031 means the Standards Australia Committee WS-031 Technical Procedures for Plumbing and Drainage Products Authorisation.

A1.2 ADOPTION OF STANDARDS AND OTHER REFERENCES

Where a *Deemed-to-Satisfy Provision* adopts a Standard, rule, specification or provision included in any document issued by Standards Australia or other body, that adoption does not include a provision:

- (a) specifying or defining the respective rights, responsibilities or obligations between any manufacturer, supplier or purchaser; or
- (b) specifying the responsibilities of any trades person or other building operative, architect, engineer, authority, or other person or body; or
- (c) requiring the submission for approval of any material, plumbing component, form or method of construction, to any person, authority or body other than a person or body empowered under State or Territory legislation to give that approval; or
- (d) specifying that a material, plumbing component, form or method of construction must be submitted to Standards Australia or a committee of Standards Australia for expression of opinion; or
- (e) permitting a departure from the *Code*, rule, specification or provision at the sole discretion of the manufacturer or purchaser, or by arrangement or agreement between the manufacturer and purchaser.

A1.3 REFERENCED STANDARDS, ETC

A reference in a *Deemed-to-Satisfy Provision* to a document under A1.2 refers to the edition or issue, together with any amendment listed in Table A1.3 and only so much as is relevant in the context in which the document is quoted.

A1.4 DIFFERENCES BETWEEN REFERENCED DOCUMENTS AND THE PLUMBING CODE OF AUSTRALIA

The *Code* overrules in any difference arising between it and any Standard, rule, specification or provision in a document listed in Table A1.3.

A1.5 COMPLIANCE WITH ALL SECTIONS OF THE PLUMBING CODE OF AUSTRALIA

Subject to A1.6, *plumbing* and *drainage* systems must be so designed, constructed and installed that they comply with the relevant provisions of Sections A to F (inclusive) of the *Code*.

A1.6 APPLICATION OF THE PLUMBING CODE OF AUSTRALIA TO A PARTICULAR STATE OR TERRITORY

For application within a particular State or Territory, the *Code* comprises;

- (a) Sections A to G inclusive; and
- (b) the variations, deletions and additions to Sections A to F applicable to that State or Territory specified in the relevant Appendix.

A1.7 LANGUAGE

A reference to a water service, *plumbing* or *drainage* system, or product in the *Code* is a reference to an entire installation, service, system or product or part of an installation, a service, system or product, as the case requires.

TABLE A1.3

The Standards and other documents listed in Table A1.3 are referred to in the *Code*.

Table A1.3			
SCHEDULE OF REFERENCE DOCUMENTS			
Document No.	Date	Title	PCA Clause
AS/NZS 1200	2000	Pressure equipment	E1.2
AS/NZS 1221	1997	Fire hose reels	B4.2
AS 1324		Air filters for use in general ventilations and air-conditioning	
Part 1	2001	Application, performance and construction	E1.2
AS 1345	1995	Identification of the contents of pipes, conduits and ducts	E1.2
AS 1428		Design for access and mobility	
Part 1	2001	General requirements for access – New building work	B1.2, B2.2, C1.2
AS/NZS 1546		On-site domestic wastewater treatment units	
Part 1	1998	Septic tanks	C2.2, F1.2
Part 2	2001	Waterless composting toilets	C2.2, F1.2
Part 3	2001	Aerated wastewater treatment system	C2.2, F1.2
AS/NZS 1547	2000	On-site domestic wastewater management	C2.2, F1.2
AS/NZS 1571	1995	Copper – Seamless tubes for air-conditioning and refrigeration	E1.2
AS 1668		The use of mechanical ventilation and air-conditioning in buildings	
Part 1	1998	Fire and smoke control in multi-compartment buildings	E1.2
Part 2	1991	Mechanical ventilation for acceptable indoor air quality	E1.2
AS 2118		Automatic fire sprinkler system	
Part 1	1999	General Requirements Amendment 1, June 2000	B4.2
Part 4	1995	Residential	B4.2
Part 5	1995	Domestic	B4.2
Part 9	1995	Piping support and installation	B4.2
AS 2419		Fire hydrant installations	
Part 1	1994	System design, installation and commissioning Amendment 1, October 1996	B4.2
Part 2	1994	Fire hydrant valves	B4.2

Table A1.3			
SCHEDULE OF REFERENCE DOCUMENTS			
Document No.	Date	Title	PCA Clause
AS 2441	1998	Installation of fire hose reels	B4.2
AS/NZS 3500		Plumbing and Drainage	
Part 0	2003	Glossary of terms	Introduction
Part 1	2003	Water services	B1.2, B3.2, B4.2, C1.2, E1.2
Part 2	2003	Sanitary plumbing and drainage	C2.2, E1.2, F1.2, F2.2.3
Part 3	2003	Storm water drainage	A2.1, D1.2, D2.2
Part 4	2003	Hot water services	B2.2
Part 5	2000	Domestic installations Amendment 1, November 2002	B1.2, B2.2, B3.2, C1.2, C2.2, D1.2, D2.2, F1.2
AS/NZS 3666		Air handling and water systems of buildings – Microbial Control	
Part 1	2002	Design, installation and commissioning	E1.2
Part 2	2002	Operation and maintenance	E1.2
Part 3	2000	Performance-based maintenance of cooling water systems	E1.2
AS/NZS 4020	1999	Products for use in contact with drinking water Amendments 1, May 2001	A2.1
AS 4041		Pressure Piping Amendment 1, April 2001	E1.2
AS 4254	2002	Ductwork for air-handling systems in buildings	E1.2
AS 4426	1997	Thermal insulation of pipework, ductwork and equipment – selection, installation and finish	E1.2
AS 5200	2001	Manual of authorization procedures for plumbing and drainage products	A1.1, G1.5.3, G1.5.3.3
BCA		Building Code of Australia	
Volume 1	1996	Class 2 – 9 Buildings Amendment 13, July 2003	B4.2, E1.2
Volume 2	1996	Class 1 & 10 Buildings – Housing Provisions Amendment 13, July 2003	
ISO Guide 28	1982	General rules for a model third-party certification system for products	
MP78	1999	Miscellaneous Publication: Manual for assessment of risks of plumbing products	G1.2, G1.5.2, G1.5.3.1, G1.5.3.2, G1.5.3.3, G1.5.3.4

PART A2 – ACCEPTANCE OF DESIGN AND CONSTRUCTION

A2.1 SUITABILITY OF MATERIALS AND PRODUCTS

- (a) Every part of a *plumbing* or *drainage* installation must be constructed in an appropriate manner to achieve the requirements of the *Code*, using materials and products that are fit for the purpose for which they are intended;
- (b) Materials or products listed in Table A2.1 which are used in *plumbing* or *drainage* installations must be certified and authorised;
- (c) Product Certification and Authorisation must meet the certification and authorisation procedures set out in *Part G* of this *Code* - “**Materials and Products Certification and Authorisation**”;
- (d) All materials and products intended for use in contact with drinking water must comply with AS/NZS 4020 and be certified and authorised in accordance with *Part G* this *Code*;
- (e) Any new or innovative material or product must be assessed, certified and authorised, if required, in accordance with *Part G* of this *Code* prior to their use in a *plumbing* or *drainage* installation;
- (f) A material or product exempted from certification under this *Code* is authorised for use in a plumbing and drainage installation if it is certified as complying with the appropriate Australian Standard(s) in accordance with A2.2;
- (g) A material or product used in a fire fighting water service is authorised for use if it is certified by a recognised body as complying with the relevant Australian Standard(s) for the specific application;
- (h) A material or product used in a stormwater installation is authorised for use if it is certified by a recognised body as comply with section 2 of AS/NZS 3500.3 in accordance with A2.2.

A2.2 EVIDENCE OF SUITABILITY

- (a) Evidence to support that the use of a material, product, the design, form of construction or installation meets a *Performance Requirement* or a *Deemed-to-Satisfy Provision* may be in the form of one or a combination of the following:
 - i A *certification mark*
 - ii A current *licence* issued in compliance with the requirements of *Part G* of this *Code*.
 - iii A report issued by a *Recognised Expert* showing that the material, the design, construction and installation has been submitted to the tests listed in a report, and setting out the results of those tests and any other relevant information that demonstrates its suitability for use in the *plumbing* installation.
 - iv A certificate from a *professional engineer* or other appropriately qualified person which-
 - (A) certifies that a material, design, form of construction or installation complies with the requirements of the *Code*; and
 - (B) sets out the basis on which certification is given and the extent to which relevant *specifications*, rules, codes of practice or other publications have been relied upon.
 - v Any other form of documentary evidence that correctly describes the properties and performance of the material, form of construction or installation and *adequately* demonstrates its suitability for use in the *plumbing* installation.
- (b) Any copy of documentary evidence submitted must be a complete copy of the original report or document.

TABLE A2.1

The materials and products listed in Table A2.1 require authorisation

Product Type	Product/Type Application	Minimum Certification Level
APPLIANCES AND FIXTURES		
Air Conditioner		2
Bain-marie		2
Bedpan Washer/sterilizer		1
Cooling equipment		2
Dental equipment		2
Water Filters and Water Treatment Appliances		1
Disposal unit	Household food waste	2
	Commercial food waste	2
	Sanitary Napkin	2
	Placenta/surgical waste	2
	Disposable nappy	2
Peeler	Fruit/vegetable	2
Sanitary Fixtures		
Urinal	Slab	2
	Stall	2
	Trough	2
	Wall hung	2
	Waterless wall hung	2
	Remote control urinal flush system	1
Water closet pan		1
Water closet suite	WC pan and flushing cistern	1
	WC pan and mains supplied flushing valve	1
	WC pan and break tank supplied flushing valve	1
Bidet		1
Bidette		1
Cistern	Dual flush	1
Water using Appliances		
Photographic processor		2
Refrigerator (ice water)		1
Spray apparatus		2

Product Type	Product/Type Application	Minimum Certification Level
Steamer/humidifier		2
Sterilizer		2
Vacuum cleaner		2
Washing machine	Clothes	2
	Dish	2
	Glass	2
Water Heater and Water Heated Storage Tanks		
Electric storage water heater	Direct heating	1
	Heat exchanger	1
	For Dairies	1
Calorifiers	For drinking water purposes	1
Calorifiers	For non-drinking water purposes	1
Gas storage water heater		1
Solar water heater		1
Electric instantaneous water heater		1
Gas Instantaneous water heater		1
Boiling water dispenser		1
Hot water heater dispensers		1
Hot water storage and pre heat storage		1
NON PRESSURIZED PIPES AND FITTING		
Fittings-Gullies		
Cast iron	Non - pressure	2
Copper	Non - pressure	2
Copper alloy	Non - pressure	2
PVC	Non - pressure	2
Vitrified clay	Non - pressure	2
Fitting Expansion Joint		
Copper and copper alloy	Non-pressure	2
PVC	Non-pressure	2
Vent Valves-General		
Air relief		2
Air admittance (induct/one way)		2
Pipes and Fittings (non pressure)		
Non-plastic waste outlet	Non - pressure	2
Integral pop-up waste	Non - pressure	
Plastic connector	Non - pressure	2

Product Type	Product/Type Application	Minimum Certification Level
Plastic waste outlet	Non - pressure	2
Non-plastic fixture trap	Non - pressure	2
Non Plastic Connector	Non - pressure	2
Plastic Fixture Trap	Non - pressure	2
Flexible coupling (metal-banded)	Non - Pressure	2
Acrylonitrile butadiene styrene (ABS)	Non - pressure	2
Cast iron Fittings	Non - pressure	2
Cast Iron Pipe	Non - Pressure	2
Copper	Non - pressure	2
Copper alloy	Non - pressure	2
Fibre-reinforced cement	Non - pressure	2
Glass filament-reinforced thermosetting plastic (GRP)	Non - pressure	2
Grey cast iron	Non - pressure	2
Polyethylene	HDPE/Non - pressure	2
Polypropylene	Non - pressure	2
Polyvinyl chloride (PVC)	Non - Pressure	2
Stainless steel Pipes and Fittings	Non - pressure	2
Vitrified clay Pipes and Fittings	Sewer	2
Non-Return Reflux Valves for Sewer		
Cast iron	Protection	2
Copper alloy	Protection	2
PVC	Protection	2
PRESSURIZED PIPES AND FITTINGS		
Copper Pipe	Pressure	1
Copper fittings	Pressure	1
Copper rolled grooved fittings	Pressure	1
Copper alloy fittings	Pressure	1
Couplings for roll grooved joints	Pressure	1
Copper alloy roll grooved	Pressure	1
Cross linked polyethylene Pipe	Pressure	1
Cross linked polyethylene Fittings	Pressure	1
Flexible couplings (metal banded)	Pressure	1
Miscellaneous assemblies	Pressure	1
Macro Composite Pipes and Fittings	Pressure	1
Polybutylene Pipe	Pressure	1
Polybutylene Fittings	Pressure	1

Product Type	Product/Type Application	Minimum Certification Level
Polyethylene Pipe	Pressure	1
	Pressure electrofusion	1
Polyethylene Fittings	Pressure	1
Polypropylene Pipe	Pressure	1
Polypropylene Fittings	Pressure	1
PVC Pipes	Pressure	1
PVC Fittings	Pressure	1
Stainless steel Pipes	Pressure	1
Stainless steel Fittings	Pressure	1
Flexible tube	Pressure	1
Showerhead	Pressure	1
Stainless steel repair clamps	Pressure	1
MATERIAL IN CONTACT WITH DRINKING WATER		
Brazing alloy		1
Lubricant		1
Priming fluid		1
Rubber ring		1
Sealant		1
Solder		1
Solvent cement		1
Thread sealant		1
Water linings		
Lining		1
Alloy/polymer product		1
WATER SUPPLY VALVES AND VALVE ACCESSORIES		
Backflow Prevention Device		
Reduced pressure zone device (RPZD)	Protection	1
Reduced pressure detector assembly (RPDA)	Protection	1
Break Tank (Registered)	Protection	1
Air Gap device (Registered)	Protection	1
Double check (DCV)	Protection	1
Double check detector assembly (DCDA)	Protection	1
Vented double check	Protection	1
Anti-spill pressure vacuum breaker (APVB)	Protection	1
Pressure type vacuum breaker (PVB)	Protection	1

Product Type	Product/Type Application	Minimum Certification Level
Dual check valve with atmospheric port (DCAP)	Protection	1
Dual check valve with intermediate vent (Du CV)	Protection	1
Dual check valve (Dual CV)	Protection	1
Beverage dispenser dual check valves with atmospheric port (BDDC)	Protection	1
Atmospheric vacuum breaker (AVB)	Protection	1
Hose connector vacuum breaker (HCVB)	Protection	1
Vacuum breaker check valve (VBCV)	Protection	1
Non Return to Heated Water System	Protection	1
Control Valves and Taps		
Bib	Control	1
Bidette	Control	1
Breaching set	Control	1
Single Check	Control	1
Cistern	Control	1
Drinking fountain	Control	1
Ferrule	Control	1
Flow Control Valve	Control	1
Float Control Valve	Control	1
Hose	Control	1
Laboratory	Control	1
Mixing	Non-thermostatic	1
Non-touch	Control	1
Pillar	Control	1
Self-closing	Control	1
Stop	Control	1
Washing machine stop	Control	1
Other type not listed	Control	1
Ball metallic and plastic	Control	1
Butterfly	Control	1
Cistern inlet	Control	1
Cistern outlet	Control	1
Diaphragm	Control	1
Flush	Control Break tank supplied	1
	Control Mains-connected	1
Fire hydrant		1

Product Type	Product/Type Application	Minimum Certification Level
Fire Protection		1
Gate	Ductile Iron	1
Gate	Copper alloy	1
Solenoid	Control	1
Globe	Control	1
Valves for Pressure and Temperature		
Pressure/temperature relief	Protection	1
Pressure-limiting	Protection	1
Pressure ratio valve	Protection	1
Pressure-reducing	Protection	1
Pressure/temperature relief	Protection	1
Expansion control	Protection	1
Non-return	Protection	1
Vacuum relief	Control	1
Thermosiphon arrestor	Control	1
Tempering	Control	1
Thermostatic mixing	Control	1
Inlet pressure control	Control	1
Isolating	Control	1
Valve and Tap Accessories		
Water Hammer Arrestor	Pressure	1
Flexible tube	Pressure	1
Hand spray	Pressure	1
Replacement seat	Pressure	1
Tap body	Pressure	1
Tap head	Pressure	1
Tap head assembly	Pressure	1
Tapset breaching piece	Pressure	1
Spindle	Pressure	1
Removable tap seat	Pressure	1
O-ring	Pressure	1
Outlet	Pressure	1
Jumper valve assembly	Pressure	1

SECTION **B**

WATER SERVICES

- B1** **COLD WATER SERVICES**
- B2** **HEATED WATER SERVICES**
- B3** **NON-DRINKING WATER SERVICES**
- B4** **FIRE FIGHTING WATER SERVICES**

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PART B1 – COLD WATER SERVICES

B1.0 SCOPE

This *Part* sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a cold water service of a property that is connected to the *drinking water* supply, from the *point of connection* to the points of discharge.

BO1 OBJECTIVE

BO1.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss* of *amenity*) due to the failure of a cold water installation;
- (b) ensure that a cold water installation (including an installation provided for use by people with disabilities) is suitable;
- (c) conserve water and energy;
- (d) safeguard the environment;
- (e) safeguard public and private infrastructure ; and
- (f) ensure that a cold water installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy *objectives* (a) to (e)

BF1 FUNCTIONAL STATEMENT

BF1.1 Sanitary fixtures, sanitary appliances and supply outlets provided with *drinking water* must have safe and *adequate* piped cold water supply.

BF1.2 The water must be conveyed through *plumbing* installations in a way that minimises any adverse impact on building occupants, the *Network Utility Operator's* infrastructure, property and the environment.

BP1 PERFORMANCE REQUIREMENTS

BP1.1 Cold water service

Installations intended to supply cold water for human consumption; food preparation, food utensil washing or personal hygiene must be connected to a *drinking water* supply.

BP1.2 Cold water service installation

A cold water service must be designed, constructed and installed in such a manner as to:

- (a) avoid the likelihood of contamination of *drinking water* within both the water service and the *Network Utility Operator's* supply;
- (b) provide water to fixtures and appliances at flow rates and pressures which are *adequate* for the correct functioning of those fixtures and appliances under normal conditions and in a manner that does not create undue noise;
- (c) avoid the likelihood of leakage or failure including uncontrolled discharges;
- (d) facilitate the efficient use of *drinking water*;
- (e) allow *adequate* access for maintenance of mechanical components and operational controls; and

- (f) allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance, where required.

BP1.3 People with disabilities

Facilities provided for people with disabilities must have cold water supply taps or other operational controls that are accessible and *adequate* for their use.

BP1.4 Materials and Products

Materials and products used in cold water services must meet the requirements of Part A2.

BV1 VERIFICATION METHODS

BV1.1 Compliance with BP1.2 is verified either:

- (a) by calculation and certification by persons or organisations with *recognised credentials* in the design or testing of water service systems; or
- (b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised auditing body*.

B1.1 DEEMED TO SATISFY

Performance Requirements BP1.1 to BP1.3 are satisfied by complying with B1.2.

B1.2 DEEMED TO SATISFY PROVISIONS

- (a) The design, construction, installation, replacement, repair alteration and maintenance of cold water services must be in accordance with AS/NZS 3500.1 or Section 2 of AS/NZS 3500.5 as appropriate.
- (b) Cold water supply taps or other operational controls provided for people with disabilities in sanitary facilities must be in accordance with AS 1428.1.

PART B2 – HEATED WATER SERVICES

B2.0 SCOPE

This *Part* sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a *heated water* service of a property that is connected to the *drinking water* supply, from the *point of connection* to the points of discharge.

BO2 OBJECTIVE

BO2.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a *heated water* installation;
- (b) ensure that a *heated water* installation (including an installation provided for use by people with disabilities) is suitable;
- (c) conserve water and energy;
- (d) safeguard the environment;
- (e) safeguard public and private infrastructure ; and
- (f) ensure that a *heated water* installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy *objectives* (a) to (e).

BF2 FUNCTIONAL STATEMENT

BF2.1 Sanitary fixtures, sanitary appliances and supply outlets provided with *heated water* must have a safe and *adequate* piped *heated water* supply.

BF2.2 The *heated water* supply must be conveyed through *plumbing* installations in a way that minimises any adverse impact on building occupants, the *Network Utility Operator's* infrastructure, property and the environment.

BP3 PERFORMANCE REQUIREMENTS

BP2.1 Heated water service

Installations intended to supply *heated water* for human consumption; food preparation, food utensil washing or personal hygiene must be connected to a *drinking water* supply.

BP2.2 Heated water temperatures

Heated water supplied by a new *heated water* service must be delivered to fixtures and appliances used primarily for personal hygiene at a temperature which reduces the likelihood of scalding.

BP2.3 Heated water service installation

A *heated water* service must be designed constructed and installed in such a manner as to:

- (a) avoid the likelihood of contamination of *drinking water* within both the on-site installation and the supply;

- (b) provide *heated water* to fixtures and appliances at flow rates and temperatures which are *adequate* for the correct functioning of those fixtures and appliances under normal conditions and in a manner that does not create undue noise;
- (c) avoid the likelihood of leakage or failure, including uncontrolled discharges;
- (d) use energy efficiently and minimise wastage of water;
- (e) allow *adequate* access for maintenance of mechanical components and operational controls; and
- (f) allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance, where required.

BP2.4 Pressure vessels

Pressure vessels used for producing and/or storing *heated water* must be provided with safety devices which:

- (a) relieve excessive pressure during both normal and abnormal conditions; and
- (b) limit temperatures to avoid the likelihood of flash steam production in the event of rupture.

BP2.5 Heated water storage

Heated water must be stored and delivered under conditions which avoid the likelihood of the growth of Legionella bacteria.

BP2.6 People with disabilities

Facilities provided for people with disabilities must have *heated water* supply taps or other operational controls that are accessible and *adequate* for their use.

BP2.7 Materials and Products

Materials and products used in heated water services must meet the requirements of Part A2.

BV2 VERIFICATION METHODS

BV2.1 Compliance with BP2.1 to BP2.5 is verified either:

- (a) by calculation and certification by persons or organisations with *recognised credentials* in the design or testing of *heated water* service systems; or
- (b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised auditing body*.

B2.1 DEEMED TO SATISFY

Performance Requirements BP2.1 to BP2.6 are satisfied by complying with B2.2.

B2.2 DEEMED TO SATISFY PROVISIONS

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of a *heated water* service must be in accordance with AS/NZS 3500.4 or Section 3 of AS/NZS 3500.5 as appropriate.
- (b) *Heated water* supply taps or other operational controls provided for people with disabilities in sanitary facilities must be in accordance with AS 1428.1.

PART B3 – NON-DRINKING WATER SERVICES

B3.0 SCOPE

This *Part* sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a *non-drinking water* service of a property from the *point of connection* to the points of discharge.

BO3 OBJECTIVE

BO3.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a *non-drinking water* installation;
- (b) ensure that a *non-drinking water* installation (including an installation provided for use by people with disabilities) is suitable;
- (c) conserve water and energy;
- (d) safeguard the environment;
- (e) safeguard public and private infrastructure; and
- (f) ensure that a *non-drinking water* installation throughout its design life will continue to satisfy the requirements of items (a) to (e).

BF3 FUNCTIONAL STATEMENT

BF3.1 Sanitary fixtures, sanitary appliances and supply outlets provided with *non-drinking water* must be *adequate*.

BF3.2 *Non-drinking water* must be supplied through *plumbing* installations in a way that avoids the likelihood of inadvertent contamination of any *drinking water* service, minimise any adverse impact on building occupants, the *Network Utility Operator's* infrastructure, property and the environment.

BP3 PERFORMANCE REQUIREMENTS

BP3.1 Non-drinking water service

- (a) A *non-drinking water* supply must only be connected to outlets clearly identified for non-drinking use and must be limited to the uses specified in B3.2 (a).
- (b) A *non-drinking water* service is not to have a cross connection with a *drinking water* service.

BP3.2 Identification

Pipe outlets, fittings, storage and holding tanks that form part of a *non-drinking water* service must be clearly identified.

BP3.3 Non-drinking water service installations

A *non-drinking water* service must be designed constructed and installed in such a manner as to:

- (a) avoid the likelihood of contamination of *drinking water* ;
- (b) provide *non-drinking water* to fixtures and appliances at flow rates and pressures which are *adequate* for the correct functioning of those fixtures and appliances under normal conditions and in a manner that does not create undue noise;
- (c) avoid the likelihood of leakage or failure including uncontrolled discharges;
- (d) allow reasonable access for maintenance of mechanical components and operational controls; and
- (e) allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance.

BP3.4 People with disabilities

Non-drinking water services provided for people with disabilities must have taps or other operational controls that are accessible, convenient and *adequate* for their use.

BP3.5 Materials and Products

Materials and products used in a non-drinking water service must meet the requirements of Part A2.

BV3 VERIFICATION METHODS

BV3.1 Compliance with BP3.1 to BP3.3 is verified either:

- (a) by calculation and certification by persons or organisations with *recognised credentials* in the design or testing of *non-drinking water* services; or
- (b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised Certifying Body*.

B3.1 DEEMED TO SATISFY

Performance requirements BP3.1 to BP3.4 are satisfied by complying with B3.2.

B3.2 DEEMED TO SATISFY PROVISIONS

- (a) The distribution of *non-drinking water* must be limited to as the following uses:
 - i. garden watering;
 - ii. toilet and urinal flushing;
 - iii. vehicle washing;
 - iv. path/wall washing;
 - v. industrial purposes;
 - vi. fire fighting; and
 - vii. dust suppression.
- (b) The design, construction, installation, replacement, repair, alteration and maintenance of a *non-drinking water* service must be in accordance with AS/NZS 3500.1 or Section 2 of AS/NZS 3500.5 as appropriate.
- (c) The design, construction, installation, replacement, repair, alteration and maintenance of a *non-drinking water* fire service must be in accordance with Part B4.

PART B4 – FIRE FIGHTING WATER SERVICES

B4.0 SCOPE

This *Part* sets out requirements for the design, construction, installation, replacement, repair, alteration, maintenance of any part of fire fighting water services from the *point of connection* or other acceptable source(s) of supply to the fire fighting equipment, including hydrant, hose reel, sprinkler services and wall drencher systems.

BO4 OBJECTIVE

BO4.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a fire fighting water installation;
- (b) ensure that a fire fighting water installation (including an installation provided for use by people with disabilities) is suitable;
- (c) conserve water and energy ;
- (d) safeguard the environment;
- (e) safeguard public and private infrastructure ; and
- (f) ensure that a fire fighting water installations is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy *objectives* (a) to (e).

BF4 FUNCTIONAL STATEMENT

BF4.1 Fire fighting equipment must be provided with *adequate* water for its intended purpose.

BP4 PERFORMANCE REQUIREMENTS

BP4.1 Fire fighting water service

A fire fighting water service must be designed constructed and installed in a manner which:

- (a) avoids the likelihood of contamination of *drinking water*;
- (b) provides water to the fire fighting equipment at a flow rate and pressure that is *adequate* for the correct functioning of the equipment;
- (c) avoids the likelihood of leakage or failure including uncontrolled discharges;
- (d) provides *adequate* access for maintenance of mechanical components and operational controls; and
- (e) allows the system and backflow prevention devices to be isolated for testing and maintenance.

BP4.2 Materials and Products

Materials and products used in fire fighting water services must meet the requirements of Part A2.

BV4 VERIFICATION METHODS

Verification of fire fighting water service performance may be conducted by a qualified third party certifier and/or the relevant fire fighting authority having jurisdiction.

B4.1 DEEMED TO SATISFY

Performance Requirement BP4.1 is satisfied by complying with B4.2.

B4.2 DEEMED TO SATISFY PROVISIONS

- (a) Firefighting water services for buildings and structures to which the *BCA* applies must comply with the requirements of Part E of Volume 1 of the *BCA*.
- (b) The installation of a fire fighting water services must be in accordance with AS/NZS 3500.1.
- (c) The installation of an automatic fire sprinkler system must be in accordance with AS 2118.1, AS 2118.4, AS 2118.5, AS 2118.6 AS 2118.1 and AS 2118.9 as appropriate.
- (d) Fire hydrants installations must be in accordance with AS 2419.1 and AS 2419.2 as appropriate.
- (e) Installation of fire hose reel systems must be in accordance with AS 2441 and AS/NZS 1221 as appropriate.
- (f) Piping for fire sprinkler systems must comply with AS/NZS 4118.2.1.

SECTION **C**

**SANITARY PLUMBING
AND DRAINAGE
SYSTEMS**

C1 SANITARY PLUMBING SYSTEMS

C2 SANITARY DRAINAGE SYSTEMS

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PART C1 – SANITARY PLUMBING SYSTEMS

C1.0 SCOPE

This *Part* sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a sanitary *plumbing* system of a property from sanitary fixtures and appliances to an *approved disposal system*.

CO1 OBJECTIVE

CO1.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a sanitary *plumbing* installation;
- (b) ensure that a sanitary *plumbing* installation (including an installation provided for use by people with disabilities) is suitable;
- (c) conserve water and energy;
- (d) safeguard the environment;
- (e) safeguard public and private infrastructure; and
- (f) ensure that a sanitary *plumbing* installation is designed and is capable of being maintained so that throughout its serviceable life will continue to satisfy *objectives* (a) to (e).

CF1 FUNCTIONAL STATEMENT

DF1.1 Sanitary fixtures and sanitary appliances using water-borne waste disposal must be provided with an *adequate* disposal system that does not impact adversely on occupants of the premises, property, the environment or the *Network Utility Operator's* infrastructure.

CP1 PERFORMANCE REQUIREMENTS

CP1.1 Sanitary plumbing systems

A sanitary *plumbing* system using water-borne waste disposal must be designed constructed and installed in such a manner as to:

- (a) convey sewage or sullage to a sanitary *drainage* system or an *approved disposal system* and in a manner that does not create undue noise;
- (b) avoid the likelihood of *loss of amenity* due to *blockage* and leakage;
- (c) avoid the likelihood of the ingress of inappropriate water, sewage, sullage, foul air and gases from the system into the building;
- (d) provide *adequate* access for maintenance of mechanical components, operational controls and for clearing *blockages*;
- (e) avoid the likelihood of damage from superimposed loads, ground movement or root penetration;
- (f) avoid the likelihood of ingress of surface water, ground water or stormwater into the system;
- (g) provide for the effective and efficient use of water; and
- (h) provide *adequate* ventilation to avoid hydraulic load imbalance.

CP1.2 People with disabilities

Facilities provided for people with disabilities must have sanitary fixtures that are accessible and *adequate* for their use.

CP1.3 Materials and Products

Materials and products used in sanitary plumbing systems must meet the requirements of Part A2.

CV1 VERIFICATION METHODS

CV1.1 Compliance with CP1.1 is verified either:

- (a) by calculation and certification by persons or organisations with *recognised credentials* in the design or testing of sanitary *plumbing* and *drainage* systems; or
- (b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised auditing body*.

C1.1 DEEMED TO SATISFY

Performance Requirements CP1.1 and CP1.2 are satisfied by complying with C1.2.

C1.2 DEEMED TO SATISFY PROVISIONS

- (a) The design, construction, installation, replacement, repair alteration and maintenance of a sanitary *plumbing* system must be in accordance with AS/NZS 3500.2 or Section 4 of AS/NZS 3500.5 as appropriate.
- (b) Sanitary fixtures provided for people with disabilities must be in accordance with AS 1428.1.

PART C2 – SANITARY DRAINAGE SYSTEMS

C2.0 SCOPE

This *Part* sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a sanitary *drainage* system of a property from sanitary fixtures and appliances to an *approved disposal system*.

CO2 OBJECTIVE

CO2.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a sanitary *drainage* installation;
- (b) ensure that a sanitary *drainage* installation (including an installation provided for use by people with disabilities) is suitable;
- (c) conserve water and energy;
- (d) safeguard the environment
- (e) safeguard public and private infrastructure; and
- (f) ensure that a sanitary *drainage* installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy *objectives* (a) to (e).

CF2 FUNCTIONAL STATEMENT

CF2.1 Sanitary fixtures and sanitary appliances using water-borne waste disposal must be provided with an *adequate* disposal system that does not impact adversely on occupants of the premises, property, the environment or the *Network Utility Operator's* infrastructure

CP2 PERFORMANCE REQUIREMENTS

CP2.1 Sanitary drainage system

A sanitary *drainage* system using water-borne waste disposal must be designed constructed and installed in such a manner as to:

- (a) convey sewage from a sanitary *plumbing* system to an *approved disposal system* and in a manner that does not create undue noise;
- (b) avoid the likelihood of *blockage* and leakage;
- (c) avoid the likelihood of root penetration;
- (d) provide *adequate* access for maintenance and for clearing *blockages*;
- (e) provide ventilation to avoid the likelihood of foul air and gases accumulating in the sanitary *drainage* and sewerage systems;
- (f) avoid the likelihood of damage from superimposed loads or ground movement;
- (g) avoid the likelihood of ingress of water, foul air and gases from the system into buildings;
- (h) protect against internal contamination;
- (i) avoid the likelihood of ingress of surface water and stormwater into the sewerage system;

- (j) avoid the likelihood of uncontrolled discharge;
- (k) avoid the likelihood of damage to existing buildings or site works; and
- (l) avoid the likelihood of damage to the sewerage system or other *approved disposal system*.

CP2.2 No point of connection

In addition to the requirements listed in CP2.1, where a *point of connection* to a *Network Utility Operator's* sewerage system is not available, an *on-site wastewater management system* must be designed, installed and maintained.

CP2.3 Materials and Products

Materials and products used in sanitary drainage systems must meet the requirements of Part A2.

CV2 VERIFICATION METHODS

CV2.1 Compliance with CP2.1 is verified either:

- (a) by calculation and certification by persons or organisations with *recognised credentials* in the design or testing of sanitary *plumbing* and *drainage* systems; or
- (b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised auditing body*.

C2.1 DEEMED TO SATISFY

Performance Requirements CP2.1 and CP2.2 are satisfied by complying with C2.2.

C2.2 DEEMED TO SATISFY PROVISIONS

- (a) The design, construction, installation, replacement, repair alteration and maintenance of a sanitary *drainage* system must be in accordance with AS/NZS 3500.2 or Section 4 of AS/NZS 3500.5 as appropriate.
- (b) Where there is no point of connection to a *Network Utility Operator's* sewerage system, the design, construction, installation, replacement, repair alteration and maintenance of a wastewater treatment system must be in accordance with AS/NZS 1547, AS/NZS 1546 or AS/NZS 1546.3 as appropriate.

SECTION **D**

**STORMWATER
DRAINAGE SYSTEMS**

D1 ROOF DRAINAGE SYSTEMS

D2 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

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PART D1 – ROOF DRAINAGE SYSTEMS

D1.0 SCOPE

This *Part* sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a roof *drainage* system.

DO1 OBJECTIVE

DO1.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a roof *drainage* installation;
- (b) ensure that a roof *drainage* installation is *adequate*;
- (c) conserve water and energy;
- (d) safeguard the environment;
- (e) safeguard public and private infrastructure; and
- (f) ensure that a roof *drainage* installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy *objectives* (a) to (e).

DF1 FUNCTIONAL STATEMENT

DF1.1 Buildings are to be provided with a roof *drainage* installation constructed to provide protection for people, property and the environment from the adverse effects of stormwater.

DP1 PERFORMANCE REQUIREMENTS

DP1.1 Roof drainage systems

Roof *drainage* systems must dispose of stormwater flows from rainfall events having an Average Recurrence Interval (*ARI*) appropriate to the importance of the building and the severity of potential damage to property, loss of *amenity*, illness or injury that would result from the failure of such system.

DP1.2 Overflow devices or measures

The roof *drainage* system must be designed, installed and maintained to dispose of stormwater flows due to extreme rainfall events by the installation and maintenance of *Overflow devices* or measures of *adequate* capacity.

DP1.3 Watertightness

All internal roof *drainage* components must be *watertight*.

DP1.4 Roof drainage installation

Roof *drainage* installations must be designed, constructed and installed in such a manner as to:

- (a) convey stormwater to a *point of connection*;
- (b) avoid the likelihood of *loss of amenity* due to *blockages* and leakage;
- (c) avoid the likelihood of foul air and gases accumulating in the roof *drainage* system;
- (d) avoid the likelihood of *loss* to buildings and property;
- (e) avoid the likelihood of uncontrolled discharges; and
- (f) provide *adequate* access for maintenance and clearing of *blockages*.

DP1.5 Materials and Products

Materials and products used in Stormwater *drainage* systems must meet the requirements of *Part A2*.

DV1 VERIFICATION METHODS

DV1.1 Compliance with DP1.1 to DP1.4 is verified either:

- (a) by calculation and certification by persons or organisations with *recognised credentials* in the design or testing of stormwater *drainage* systems; or
- (b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised auditing body*.

D1.1 DEEMED TO SATISFY

Performance Requirements DP1.1 to DP1.4 are satisfied by complying with D1.2.

D1.2 DEEMED TO SATISFY PROVISIONS

The design, construction, installation, replacement, repair alteration and maintenance of a roof drainage system must be in accordance with AS/NZS 3500.3 or Section 5 of AS/NZS 3500.5 or Part 3.5.2 of the *BCA Volume 2* as appropriate.

PART D2 – SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

D2.0 SCOPE

This *Part* sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of surface *drainage* system and subsurface *drainage* system to the *point of connection*.

DO2 OBJECTIVE

DO2.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a stormwater *drainage* installation;
- (b) ensure that a stormwater *drainage* installation is *adequate*;
- (c) conserve water and energy;
- (d) safeguard the environment;
- (e) safeguard public and private infrastructure; and
- (f) ensure that a stormwater *drainage* installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy *objectives* (a) to (e).

DF2 FUNCTIONAL STATEMENT

DF2.1 Buildings and their surroundings are to be provided with a surface *drainage* and subsurface *drainage* installation and be constructed in such a manner as to provide protection for people, property and the environment from the adverse effects of stormwater.

DP2 PERFORMANCE REQUIREMENTS

DP2.1 Surface drainage systems

Surface *drainage* systems must dispose of stormwater flows from rainfall events having an Average Recurrence Interval (*ARI*) appropriate to the importance of the site and the severity of potential damage to property, *loss of amenity*, illness or injury that would result from the failure of such system.

DP2.2 Subsurface drainage systems

Subsoil *drainage* systems must remove excess groundwater and reduce soil moisture levels without causing *loss* by inappropriately changing soil moisture conditions.

DP2.3 Surface drainage installations

Surface *drainage* installations must be designed constructed and installed in such a manner as to:

- (a) convey stormwater to a *point of connection*;
- (b) avoid the likelihood of *blockages*;
- (c) avoid the likelihood of leakage and penetration by roots;

- (d) provide *adequate* access for maintenance and clearing of *blockages*;
- (e) avoid the likelihood of damage to the *Network Utility Operator's* drainage system;
- (f) avoid the likelihood of damage from superimposed loads or ground movements;
- (g) avoid the likelihood of ingress of sewage and/or liquid trade waste;
- (h) avoid the likelihood of ingress of surface water and stormwater into a sanitary *drainage* system;
- (i) avoid the likelihood of foul air and gases accumulating in the stormwater system;
- (j) avoid the likelihood of *loss* to buildings or property; and
- (k) avoid the likelihood of uncontrolled discharge.

DP2.4 Materials and Products

Materials and products used in Stormwater *drainage* systems must meet the requirements of Part A2.

DV2 VERIFICATION METHODS

DV2.1 Compliance with DP2.1 to DP2.3 is verified either:

- (a) by calculation and certification by persons or organisations with *recognised credentials* in the design or testing of stormwater *drainage* systems; or
- (b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised auditing body*.

D2.1 DEEMED TO SATISFY

Performance Requirements DP2.1 to DP2.3 are satisfied by complying with D2.2.

D2.2 DEEMED TO SATISFY PROVISIONS

The design, construction, installation, replacement, repair alteration and maintenance of a stormwater *drainage* system must be in accordance with AS/NZS 3500.3 or Section 5 of AS/NZS 3500.5 or Part 3.1.2 of the *BCA* Volume 2 as appropriate.

SECTION **E**

**HEATING, VENTILATION
AND AIR-CONDITIONING**

E1 HEATING, VENTILATION AND AIR-CONDITIONING

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PART E1 – HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

E1.0 SCOPE

This *Part* sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of mechanical heating, cooling and ventilation systems.

EO1 OBJECTIVE

EO1.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a heating, ventilation or air-conditioning installation;
- (b) ensure that a heating, ventilation or air-conditioning installation (including an installation provided for use by people with disabilities) is suitable;
- (c) conserve water and energy;
- (d) safeguard the environment;
- (e) safeguard public and private infrastructure; and
- (f) ensure that a heating, ventilation or air-conditioning installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy *objectives* (a) to (e).

EF1 FUNCTIONAL STATEMENT

EF1.1 Mechanical services, plant and equipment used for heating, cooling and/or ventilation of a building must be *adequate*.

EF1.2 The building's heating, cooling and/or ventilation system installation and maintenance must support energy efficient outcomes and minimise any adverse impact on building occupants or occupants of adjoining places, the *Network Utility Operator's* infrastructure, property and the environment.

EP1 PERFORMANCE REQUIREMENTS

EP1.1 Mechanical services, plant and equipment for heating, cooling and/or ventilation must be designed constructed, installed and maintained in such a manner as to:

- (a) avoid the likelihood of harmful microbial growth;
- (b) avoid the likelihood of damage to property and *loss of amenity* to the building occupants;
- (c) be efficient in the use of energy and water; and
- (d) provide *adequate* access for maintenance.

EP1.2 Materials and Products

Materials and products used in mechanical heating, cooling and/or ventilation systems must meet the requirements of Part A2.

EV1 VERIFICATION METHODS

EV1.1 Compliance with EP1.1 is verified either:

- (a) by calculation and certification by persons or organisations with *recognised credentials* in the testing of heating, ventilation and air conditioning systems; or
- (b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised auditing body*.

E1.1 DEEMED TO SATISFY

Performance Requirement EP1.1 is satisfied by complying with E1.2.

E1.2 DEEMED TO SATISFY PROVISIONS

- (g) Mechanical ventilation and air-conditioning systems for buildings and structures to which the *BCA* applies must comply with the requirements of Part F of Volume 1 of the *BCA*.
- (a) The design, construction, installation, replacement, repair alteration and maintenance of mechanical ventilation and air-conditioning equipment systems be in accordance with AS/NZS 1200, AS 1324.1, AS 1345, AS 1358, AS 1668.1, AS 1668.2, AS/NZS 3500.1, AS/NZS 3500.2, AS/NZS 3500.4, AS 4254, AS 4426 and AS 5601 as appropriate.
- (b) The design, construction, installation, replacement, repair alteration and maintenance of pressure equipment and piping must be in accordance with AS/NZS 1200, AS 1271, AS 4041.
- (c) The design, construction, installation, replacement, repair alteration and maintenance of copper piping for air conditioning and refrigeration must be in accordance with AS/NZS 1571.
- (d) Microbial (*Legionella* bacteria) control must be carried out in accordance with AS/NZS 3666.1, AS/NZS 3666.2 and AS/NZS 3666.3 as appropriate.

SECTION **F**

ON-SITE WASTEWATER SYSTEMS

F1 ON-SITE WASTEWATER MANAGEMENT SYSTEMS

F2 ON-SITE LIQUID TRADE WASTE SYSTEMS

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PART F1 – ON-SITE WASTEWATER MANAGEMENT SYSTEMS

F1.0 SCOPE

This *Part* sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of an *on-site wastewater management system*.

FO1 OBJECTIVE

FO1.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of an *on-site wastewater management* installation;
- (b) ensure that an *on-site wastewater management* installation (including an installation provided for use by people with disabilities) is suitable.
- (c) conserve water and energy;
- (d) safeguard the environment;
- (e) safeguard public and private infrastructure; and
- (f) ensure that an *on-site wastewater management* installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy *objectives* (a) to (e).

FF1 FUNCTIONAL STATEMENT

FF1.1 *On-site wastewater management systems* must collect, contain, treat and assimilate and process domestic-wastewater, human excreta, or both so that public health and environmental standards required by the relevant authority having jurisdiction are achieved.

FP1 PERFORMANCE REQUIREMENTS

FP1.1 *On-site wastewater management systems* must be designed constructed, installed and maintained in such a manner as to:

- (a) protect public health by ensuring that:
 - i. all discharges comply with the relevant requirements of the authority having jurisdiction; and
 - ii. risks associated with the discharge of treated wastewater and or the end product from a composting toilet to the environment are minimised.
- (b) protect the environment by ensuring that:
 - i. environmental quality *objectives* set by the relevant authority having jurisdiction are attained;
 - ii. surface and ground water are not polluted;
 - iii. soil productivity is maintained or enhanced; and

- iv. adverse cumulative environmental effects comply with the relevant environmental requirements.
- (c) minimise the impacts on and maintain and enhance community *amenity* by ensuring that:
 - i. on-site wastewater management systems are managed so as to achieve sustainable long term performance;
 - ii. the *on-site wastewater management system* design and its implementation contribute to improving and sustaining aesthetic values within individual properties and groups of properties; and
 - iii. the requirements of any community resource utilisation programme for the reuse of resources within wastewater are met.
- (d) meet the requirements of the receiving *Network Utility Operator* for the acceptance of wastewater to sewers, as appropriate.

FP1.2 Wastewater must be discharged according to the requirements and agreement of the relevant authority having jurisdiction.

FP1.3 Wastewater must be conveyed to an *on-site wastewater management system* in a way that:

- (a) transfers wastes safely and hygienically;
- (b) avoids the likelihood of *blockage* and leakage;
- (c) avoids the likelihood of foul air and gases entering buildings; and
- (d) provides *adequate* and safe access for maintenance and clearing *blockages*.

FP1.4 *On-site wastewater management systems* that facilitate on-site storage, treatment, disposal or re-use of wastewater must be designed, constructed and installed:

- (a) with *adequate* treatment and storage capacity for the volume of waste and frequency of disposal;
- (b) with *adequate* size, strength and rigidity for the nature, flow rates, volume of wastes and/or waste products which must be processed;
- (c) with *adequate* vehicle access for collection, if required;
- (d) to avoid the likelihood of contamination of any *drinking water* supplies;
- (e) to avoid the likelihood of contamination of soils, ground water and waterways;
- (f) from materials which are impervious both to the waste for which disposal is required and to water;
- (g) to avoid the likelihood of foul air and gases accumulating within or entering into buildings;
- (h) to avoid the likelihood of unauthorised access by people;
- (i) to permit cleaning, maintenance, measurement and performance sampling;
- (j) to avoid the likelihood of surface water and stormwater entering the system;
- (k) to avoid the likelihood of uncontrolled discharge;
- (l) to permit the manufacturer, model, serial number and designed capacity to be reasonably easily identifiable after installation; and
- (m) so that the installation throughout its design life will continue to satisfy the requirements of items (a) to (l).

FP1.4 Land application systems

On-site wastewater management systems associated land application systems must be designed constructed, installed and maintained in such a manner as to:

- (a) complete the treatment, uptake and absorption of the final effluent within the boundaries of the approved application area;
- (b) avoid the likelihood of the creation of unpleasant odours or the accumulation of offensive matter;
- (c) avoid the likelihood of the ingress of effluent, foul air or gases entering buildings;
- (d) avoid the likelihood of stormwater run-off entering the system;
- (e) avoid the likelihood of root penetration or ingress of ground water entering the system;
- (f) protect against internal contamination;
- (g) provide *adequate* access for maintenance;
- (h) incorporate *adequate* provisions for effective cleaning;
- (i) avoid the likelihood of unintended or uncontrolled discharge; and
- (j) avoid the likelihood of *blockage* and leakage.
- (k) avoid the likelihood of damage from superimposed loads or ground movement;
- (l) provide ventilation to avoid the likelihood of foul air and gases from accumulating in the system; and
- (n) so that the installation throughout its design life will continue to satisfy the requirements of items (a) to (l).

FP1.5 Materials and Products

- (a) Materials and products connected to an *on-site wastewater management system* must meet the requirements of Part A2; and
- (b) On-site domestic wastewater treatment units must be authorised by the authority having jurisdiction.

FV1 VERIFICATION METHODS

FV1.1 Compliance with FP1.1 – FP1.4 is verified either:

- (a) by calculation and certification by persons or organisations with *recognised credentials* in the design or testing of on-site domestic wastewater systems; or
- (b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised auditing body*.

F1.1 DEEMED TO SATISFY

Performance Requirement FP1.1 – FP1.4 is satisfied by complying with F1.2 as appropriate.

F1.2 DEEMED TO SATISFY PROVISIONS

- (a) The size determination, design and installation of septic tanks must be in accordance with AS/NZS 1546.1.
- (b) The size determination, design and installation of waterless composting toilets must be in accordance with AS/NZS 1546.2.
- (c) The size determination, design and installation of aerated wastewater treatment systems must be in accordance with AS/NZS 1546.3.
- (d) The design, construction, installation, replacement, repair, alteration and maintenance of all sanitary *plumbing* and *drainage* systems must be in accordance with AS/NZS 3500.2 or Section 4 of AS/NZS 3500.5 as appropriate.
- (e) The management of *on-site wastewater management systems* must be in accordance with AS/NZS 1547.

PART F2 – ON-SITE LIQUID TRADE WASTE SYSTEMS

F2.0 SCOPE

This *Part* sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a system of a property used for the on-site treatment, conveyance and/or disposal of liquid trade waste.

FO2 OBJECTIVE

FO2.1 The *objective* of this *Part* is to:

- (a) safeguard people from illness, injury or *loss* (including *loss* of *amenity*) due to the failure of a liquid trade waste installation;
- (b) ensure that a liquid trade waste installation (including an installation provided for use by people with disabilities) is suitable;
- (c) conserve water and energy;
- (d) safeguard the environment;
- (e) safeguard public and private infrastructure; and
- (f) ensure that a liquid trade waste installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy *objectives* (a) to (e).

FF2 FUNCTIONAL STATEMENT

FF2.1 Where liquid trade waste is generated *adequate* space and facilities must be provided for the safe and hygienic collection, holding, treatment and/or disposal of the waste.

FF2.2 On-site liquid trade waste management systems must process liquid waste generated from an industry, business, trade or manufacturing process so that public health and environmental standards required by the relevant authority having jurisdiction and/or particular requirements of the receiving *Network Utility Operator*'s, where applicable, are achieved.

FP2 PERFORMANCE REQUIREMENTS

FP2.1 An on-site liquid trade waste system must be designed constructed and installed in such a manner as to:

- (a) protect public health by ensuring that:
 - i. all discharges comply with the relevant requirements of the authority having jurisdiction; and
 - ii. risks associated with the discharge of treated liquid trade waste to the environment are minimised.
- (b) protect the environment by ensuring that:
 - i. environmental quality *objectives* set by the relevant authority having jurisdiction are attained;
 - ii. surface and ground water are not polluted;
 - iii. soil productivity is maintained or enhanced; and

- iv. adverse cumulative environmental effects comply with the relevant environmental requirements.
- (c) minimise the impacts on and maintain and enhance community *amenity* by ensuring that:
 - i. on-site liquid trade waste systems are managed so as to achieve sustainable long term performance;
 - ii. the on-site system design and its implementation contribute to improving and sustaining aesthetic values within individual properties and groups of properties; and
 - iii. the requirements of any community resource utilisation programme for the reuse of resources within wastewater are met.
- (d) meet the requirements of the receiving Network Utility Operator for the acceptance of liquid trade waste to sewers, as appropriate.

FP2.2 Liquid trade waste must be discharged according to the requirements and agreement of the relevant authority having jurisdiction and the receiving Network Utility Operator.

FP2.3 Liquid trade waste must be conveyed to storage containers and within disposal systems in a way that:

- (a) transfers wastes safely and hygienically;
- (b) avoids the likelihood of *blockage* and leakage;
- (c) avoids the likelihood of foul air and gases entering buildings; and
- (d) provides *adequate* and safe access for clearing *blockages*.

FP2.4 Facilities for the storage, treatment and/or disposal of liquid trade waste must be designed, constructed and installed:

- (a) with *adequate* treatment and storage capacity for the volume of waste and frequency of disposal;
- (b) with *adequate* size, strength and rigidity for the nature, flow rates, volume of wastes, by-products and residues which must be processed;
- (c) with *adequate* vehicle access for collection, if required;
- (d) with *adequate* structural strength for where pedestrian or vehicular traffic is likely to be encountered;
- (e) to avoid the likelihood of contamination of any *drinking water* supplies;
- (f) to avoid the likelihood of contamination of soils, ground water and waterways;
- (g) from materials which are impervious both to the waste for which disposal is required and to water;
- (h) to avoid the likelihood of foul air and gases accumulating within or entering into buildings;
- (i) to avoid the likelihood of unauthorised access by people;
- (j) to permit cleaning, maintenance, measurement and performance sampling;
- (k) to avoid the likelihood of surface water and stormwater entering the *sewerage system* except in cases where a contaminated stormwater discharge of limited volume is accepted by the Network Utility Operator as a trade waste;
- (l) to avoid the likelihood of uncontrolled discharge;
- (m) to permit the manufacturer, model, serial number and designed capacity to be reasonably easily identifiable after installation; and

- (n) so that the installation throughout its design life will continue to satisfy the requirements of items (a) to (m).

FP2.5 Materials and Products

Materials and products used in liquid trade waste installations must meet the requirements of Part A2.

FV2 VERIFICATION METHODS

FV2.1 Compliance with FP2.1 – FP2.4 is verified either:

- (c) by calculation and certification by persons or organisations with *recognised credentials* in the design or testing of on-site domestic wastewater systems; or
- (d) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised auditing body*.

F2.1 DEEMED TO SATISFY

Performance Requirements FP2.1 to FP2.4 are satisfied by complying with F2.2.

F2.2 DEEMED TO SATISFY PROVISIONS

F2.2.1 General

Where pre-treatment facilities are required, they must comply with the requirements of the appropriate authority having jurisdiction, including the receiving *Network Utility Operator* (where relevant) and those responsible for occupational health and safety, dangerous goods management and environmental protection.

F2.2.2 Agreement requirements

Where the written agreement of the relevant authority having jurisdiction and the receiving *Network Utility Operator* is required, the liquid trade waste systems and pre-treatment facilities are to comply with the requirements of the authority having jurisdiction and the receiving *Network Utility Operator*.

F2.2.3 Pre-treatment facilities not required

Where pre-treatment facilities are not required by the relevant authority having jurisdiction or the receiving *Network Utility Operator*, the minimum requirement for FP2.3 and FP2.4 is compliance with AS/NZS 3500.2.

SECTION **G**

**MATERIALS AND
PRODUCTS
CERTIFICATION AND
AUTHORISATION**

G1 CERTIFICATION AND AUTHORISATION

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PART G1 – CERTIFICATION AND AUTHORISATION

G1.1 SCOPE

This *Part* sets out the certification and authorisation procedures for *plumbing* and *drainage* materials and products so that they may be authorised for use in a new plumbing installations.

G1.2 APPLICATION

This *Part* applies to all *plumbing* and *drainage* materials and products that are required to be authorised under *Part A2* of this *Code*. The requirement for authorisation is based on the risks arising from the use of the material or product in a *plumbing* or *drainage* installation.

The process of risk identification, risk analysis, risk assessment and risk treatment of *plumbing* and *drainage* products, appliances and equipment is set out in **MP78 “Manual for assessment of risks of plumbing products”**.

Product authorisation is achieved through the application of the *certification mark* on the material or product and the listing of the material or product on the *WaterMark Register*.

G1.3 OBJECTIVE

The objective of this *Part* is to establish the requirements for materials and product certification and authorisation under *Part A2* of this *Code* “**Acceptance of Design and Construction**” and to:

- (a) provide a process to authorise materials and products to enable their use in plumbing and drainage installations;
- (b) ensure that *plumbing* and *drainage* materials and products are fit for purpose and that their use in a *plumbing* or *drainage* installation is sustainable and does not create significant risks or any likely outcome of:
 - i. personal illness, *loss*, injury or death;
 - ii. environmental degradation;
 - iii. contamination of the water resource;
 - iv. adverse impact on infrastructure (Private and Public);
 - v. contamination of the water supply;
 - vi. wastage of resources (Water and Energy);
 - vii. premature failure of the material or product; and
 - viii. the inability of a material or product to function as intended.

G1.4 AUTHORISATION

A material or product that has the *certification mark* and is registered in the *WaterMark Register* is recognised by authorities having jurisdiction as being authorised for use in a *plumbing* or *drainage* installation.

G1.5 CERTIFICATION PROCESS

G1.5.1 GENERAL

The application of this *Part G2* is to determine the level of risk and the need for certification.

The certification process ensures that materials or products are manufactured in compliance with the relevant *specification* and the applicable *certification mark licence* requirements.

G 1.5.2 Materials and products certification

Materials and products listed in Table A2.1 must be certified at the minimum certification level nominated in that Table.

There are two (2) levels of Certification.

Level One Certification requires a full Quality Assurance certification program to ISO Guide 28 to be in place.

Level Two Certification requires that a Quality Assurance certification program to be in place.

Any new or innovative material or product that is required to comply with AS 4020 or is assessed with a consequence score of more than 4 under MP78 requires Level 1 Certification.

Any new or innovative material or product that is assessed with a consequence score in the range of 3 – 4, under MP78, requires Level 2 Certification.

Any material or product with a consequence score of less than 3 does not require certification.

G1.5.3 THE PROCESS

The certification process is outlined in Figure G1.5.3.

Certification of a *plumbing* or *drainage* product or material must be conducted by a *Certifying Body (CB)*.

If the material or product attributes coincide with those of a material or product listed in Table A2.1, certification must be carried out in accordance with G.1.5.4 and the relevant *specification* in AS 5200.

G1.5.3.1 Risk assessment process for materials and products for which there is no appropriate *specification*

If the material or product is not listed in Table A2.1 or there is no appropriate *specification* the *CB* is to carry out an assessment of the risks associated with its use in accordance with MP78 and the outcomes of the assessment must be reported to the *NPRF* through *WS-031* after agreement by *WS-014* committee in relation to installation requirements.

G1.5.3.2 Consequence score less than 3 (Certification not required)

If the outcome of an assessment carried out in accordance with MP78 is a consequence score of less than 3, the *CB* is to submit to the *NPRF* through *WS-031* all pertinent assessment details, including a description of the material or product and its consequence score. If no objection to the assessment outcome is received from *WS-031* or *WS-014* within 28 days, the material or product may be incorporated in a *plumbing* or *drainage* installation without certification.

G1.5.3.3 Consequence Score of 3 - 4 (Certification Level 2)

If the outcome of an assessment in accordance with MP78 is a consequence score of 3 – 4 and there is no *specification in place* the *CB* is to submit for approval:

- (a) to the *NPRF* through *WS-031*, a *specification* that accurately describes the physical and functional attributes of the material or product and relevant tests related to materials and function; and
- (b) to *WS-014*, proposed installation details related to the product.

The documentation required in (a) and (b) above is to be in a generic product Standard format, called an Australian Technical Specification (ATS).

Note: *WS-031* and/or *WS-014* may request amendments to the *specification* and/or proposed installation details before recommending approval for the *specification* to the *NPRF*.

Certification of the material or product must be in accordance with Clause G1.5.4.2 and is to be based on the approved *specification* received from the *NPRF* through *WS-031*.

Certification based on a *specification* listed in AS 5200 or an approved *specification* is valid for a period not exceeding 2 years. The *CB* working with and on behalf of the applicant is to actively participate to convert the approved *specification* into an Australian Standard within that period. Failing to do so will result in the certification being withdrawn. In such an event, the *CB* is to remove the material or product from the *WaterMark Register*. An extension to the certification period may only be granted under extenuating circumstances.

G1.5.3.4 Consequence score of more than 4 (Certification Level 1)

If the outcome of assessment carried out in accordance with MP78 is a consequence score of more than 4, certification of the material or product must be in accordance with Clause G1.5.4.3.

G1.5.4 CERTIFICATION


G1.5.4.1 Certification Mark

The *WaterMark* is issued by a *CB* subject to material or product compliance with the relevant *specification* and the terms and conditions in the certification *licence* agreed to between the *CB* and the supplier.

Marking the product with the *certification mark* effects certification.

Certification to *WaterMark* must not be implied or claimed unless the material or product has been duly certified and an appropriate *licence* issued.

Figure G1.5.4.1 summarises the certification requirements in relation to the consequence score.

MP78 Consequence Score	Certification	Minimum Certification Level
Less than 3	None Required	None Required
3 – 4	 <p>The WaterMark SAI TS XXX XYZ Certification Body (IBN No zzzz) (EXAMPLE ONLY)</p>	<p>② A supplier must comply with Type Test requirements, have a Quality Assurance Program in place, provide <i>warranty</i> and comply with <i>licence</i> conditions.</p>
More than 4		<p>① A supplier must have Full product Certification, Quality Assurance Program in place (as set out in ISO Guide 28) and comply with <i>licence</i> conditions.</p>

**Figure G1.5.4.1
Product Certification**

G1.5.4.2 Materials and products with a consequence score of 3 -4 (Certification Level 2)

For materials and products with a consequence score of 3 - 4 to achieve certification to WaterMark, they are to be certified as fully complying with an approved *specification* through product type testing.

Product type testing for certification level 2 must be certified as having been carried out in a *recognised testing laboratory* by the *CB*.

The manufacture of the material or product must be certified by the *CB* as having been carried out in accordance with an approved Quality Assurance Program appropriate for the material or product.

The manufacturer must provide a *warranty* on the material or product that is clearly visible and comprehensible to the intending purchaser and user.

In addition, the supplier must comply with the conditions of the WaterMark *licence*.

The product is granted Certification to WaterMark if all of the above requirements are met.

G1.5.4.3 Materials and products with a consequence score of more than 4 (Certification Level 1)

For materials and products with a consequence score of more than 4 to achieve certification to WaterMark, they must be certified as fully complying with an approved *specification* through product type testing.

Full product testing for certification level 1 must be certified as having been carried out in a *recognised testing laboratory* by the *CB*.

The manufacture of the material or product must be certified by the *CB* as having been carried out in accordance with a Full Quality Assurance Program (*as set out in ISO Guide 28*) appropriate for the material or product.

In addition, the supplier must comply with the conditions of the WaterMark *licence*.

The material or product is granted Certification to use the WaterMark if all of the above requirements are met.

G1.5.4.4 Certification licence

The *CB* issues a licence to the supplier as a consequence of the certification of a *plumbing* or *drainage* material or product. The *licence* contains conditions that must be observed by the supplier for the material or product to exhibit or be associated with the *certification mark*.

As soon as practicable after issuing a *licence*, the *CB* is to:

- (a) register the material or product in the *WaterMark Register*; and
- (b) provide corresponding advice to the *NPRF* and *WS-014* through *WS-031*

A *licence* will be revoked if any of the certification or *licence* conditions are breached. In such a situation, certification lapses and the *CB* must remove the material or product from the *WaterMark Register*.

G1.5.5 PRODUCT MARKING

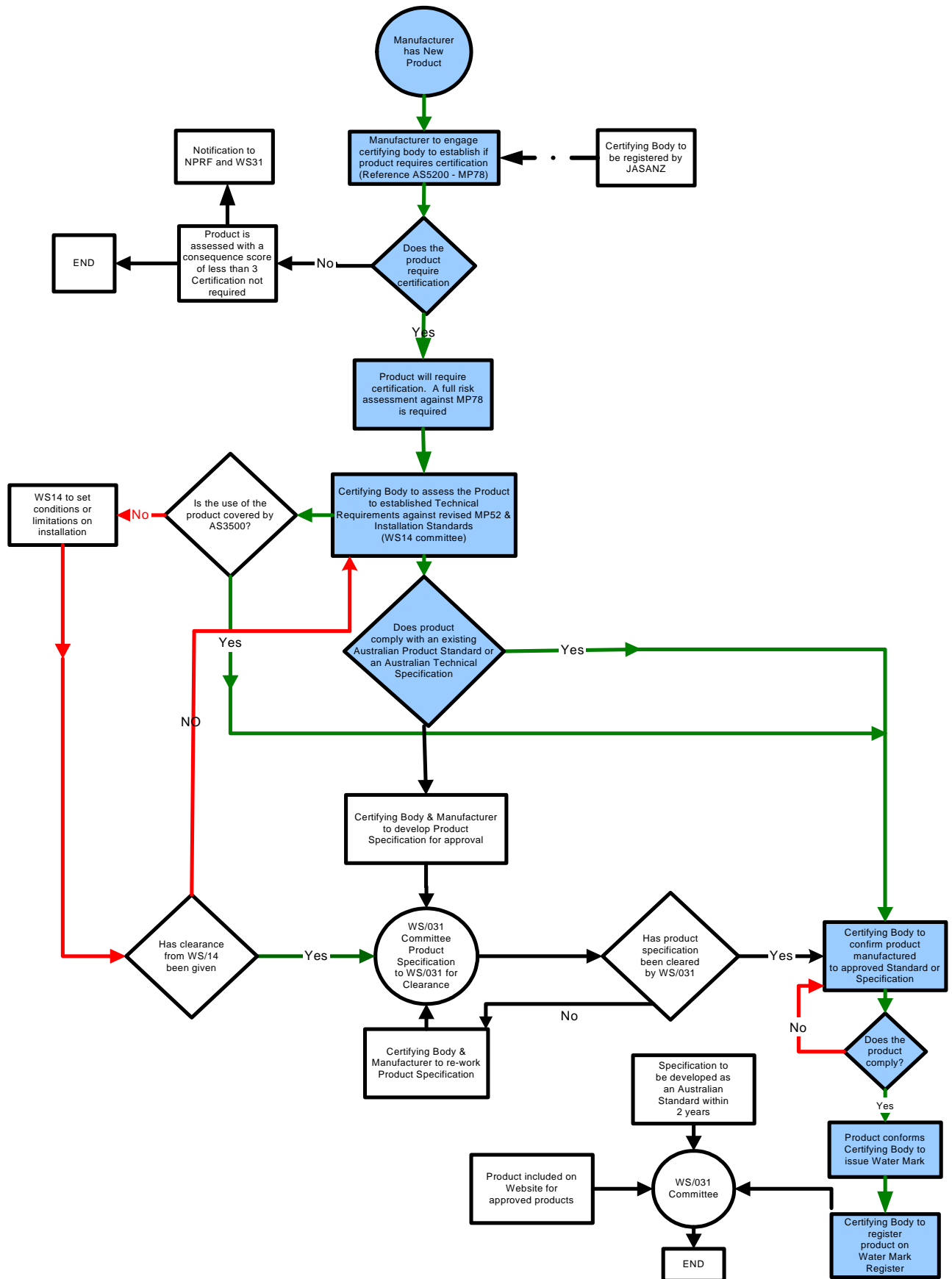
The *CB* must ensure that a material or product that has been accorded a *certification mark* is appropriately marked.

A material or product displaying a *certification mark* but without the required *warranty* is not an authorised product.

In exceptional cases where the product is too small to receive a mark, suppliers may make application for an exemption to display the WaterMark. The *CB* must make application for exemption to the *NPRF* through *WS-031*.

WaterMark may only be shown on or be associated with a material or product that has been duly certified and the supplier appropriately licensed.

**Figure G1.5.3
The Certification Process**



Note: This flow chart is a guide only. It does not detail all the steps that may be encountered in the process.