MP 4.2 – RAINWATER TANKS AND OTHER SUPPLEMENTARY WATER SUPPLY SYSTEMS

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1 Purpose

To specify—

(a) when a *rainwater tank* or other *supplementary water supply system* must be installed for a *class 1* building; and

(b) the design and installation requirements for a *rainwater tank* or other *supplementary water supply system* in a *class 1* or *class 2* building, or a *class 10* building or structure.

2 Commencement

This Part—

(a) commences on 1 February 2013; and

(b) replaces the version of this Part published on 10 September 2012.

3 Application

(1) This Part applies as specified by ticks (✓) in item 1 of Table 1 for a building development application for a new *class 1* building if—

(a) the building is to be located on a *lot* that is in a *reticulated town water area*; and

(b) an approval granted by the Minister under this Part applies to the *lot*.

Note

An approval may apply for all or a part of a local government area, or only to a *lot* of a minimum size—see section 4. If an approval granted under this Part is in effect, the area affected by the approval will be specified on the department's website as an area to which all of the performance requirements set out in this Part apply.

(2) This Part applies as specified by ticks (✓) in item 2 of Table 1 if a *rainwater tank* or other *supplementary water supply system* is installed on a *lot* for a *class 1* or *class 2* building, or a *class 10* building or structure, on or after 1 February 2013.

Table 1 – Application of MP 4.2

Item	Application	Performance Requirements												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1	An approval granted by the Minister under this Part applies for a building development application for a *class 1* building	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	A *rainwater tank* or other *supplementary water supply system* is installed on a *lot* for a *class 1* or *class 2* building, or a *class 10* building or structure						✓	✓	✓	✓	✓	✓	✓	✓

4 Approval to make Part mandatory for an area

(1) A local government may apply to the Minister for an approval to require the mandatory application of this Part to a building development application for a new *class 1* building to be located within a *reticulated town water area*.

(2) The local government may in its application also apply to vary the application of this Part.

(3) The Minister may grant an approval to the local government if the Minister is satisfied that granting the approval will result in a net benefit to the relevant community.

(4) In deciding whether to grant an approval, the Minister may take into account any matter the Minister considers relevant, including any advice that the Minister considers relevant.

(5) An approval granted under this Part—

(a) has effect until it is varied or cancelled by the Minister; and

(b) applies to a building development application lodged on or after the date when the approval is granted.

5 Varying or cancelling an approval

(1) A local government may apply to the Minister to vary or cancel an approval granted under section 4.

(2) The Minister's discretion for deciding an application to vary an approval is the same as the Minister's discretion for deciding an application for an approval under section 4.

6 Referral Agency

There is no referral agency for this Part.

7 Associated Requirements

- *Building Act 1975*
- Building Code of Australia
- *Building Regulation 2006*
- *Health Regulation 1996*
- *Plumbing and Drainage Act 2002*
- Queensland Plumbing and Wastewater Code
- Local government planning scheme provisions
- *Standard Plumbing and Drainage Regulation 2003*
- *Sustainable Planning Act 2009*
- *Sustainable Planning Regulation 2009*
- *Water Supply (Safety and Reliability) Act 2008*

8 Referenced standards and documents

Number	Date	Title
AS/NZS 3500 (Set)	2003	Plumbing and Drainage (Set)
AS/NZS 4766	2006	Polyethylene storage tanks for water and chemicals
AS 1319	1994	Safety signs for the occupational environment

AS 1345	1995	Identification of the contents of pipes, conduits and ducts
AS 1397	2011	Continuous Hot-dip metallic coated steel sheet and strip – Coatings of zinc and zinc alloyed with aluminium and magnesium
ASTM A240/ A240M-12	2012	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
AS 3735	2001	Concrete structures retaining liquids
AS/NZS 1546.1	2008	On-site domestic wastewater treatment units – Septic Tanks
AS/NZS 1170.1	2002	Structural design actions – Permanent, imposed and other actions
AS/NZS 1170.2	2011	Structural design actions – Wind actions

9 Definitions

Note

Italicised words within the body of the Part, other than legislation titles, are defined below.

acceptable solution means a relevant building solution which is deemed to satisfy the relevant performance criterion for the purposes of S14(4)(a)(ii) of the *Building Act 1975*.

automatic switching device means a device that controls the water supply to plumbing outlets by automatically switching from *rainwater tank* water to the *reticulated town water supply system* when the water level in the *rainwater tank* is insufficient to meet household demand.

back-flow prevention device means a device to prevent the reverse flow of water from a potentially polluted source, such as a *tank*, into a potable water supply system.

class 1 has the meaning given by the Building Code of Australia.

class 2 has the meaning given by the Building Code of Australia.

class 10 has the meaning given by the Building Code of Australia.

dual reticulation system, for a building, means water supply for the building consisting of both a *water service provider's* supply and recycled water.

external use means the use of collected rainwater for outdoor application, such as gardening, irrigation, ponds, swimming pools and outdoor cleaning.

greywater means wastewater from a bath, basin, kitchen, laundry or shower, whether or not the wastewater is contaminated with human waste.

greywater treatment plant means a treatment plant, approved and installed under the *Plumbing and Drainage Act 2002*.

lot means a separate, distinct parcel of land on which a building is to be built, or is built.

rainwater tank means a covered *tank*, or combination of covered *tanks*, used to collect and store rainwater from a building's *roof,* that may also be used to store potable water

from a *reticulated town water supply system* for use when the stored rainwater supply is depleted.

reticulated town water area means an area supplied by a *reticulated town water supply system*.

reticulated town water supply system means a pipe network managed by a *water service provider*.

roof means the uppermost surface of a building.

sanitary outlet means an outlet from an assembly of pipes, fittings and apparatus, excluding kitchen and water closets outlets, used to collect and convey discharge to the sanitary plumbing system.

stormwater means run-off of water following a storm other than from the *roof* of a building.

supplementary water supply system means—

(a) a system comprising one or more communal *rainwater tanks*; or

(b) a *dual reticulation system*; or

(c) a treated stormwater system.

tank means—

(a) a covered tank, or combination of covered tanks, used to collect *stormwater* and recycled water; or

(b) a *rainwater tank*.

water service provider means a person registered under the *Water Supply (Safety and Reliability) Act 2008* as a service provider for a water service.

wet system, for a *tank*, means a system that—

(a) relies on hydraulic head pressure to force water through pipe work and then up a vertical riser pipe and into the inlet of the *tank*; and

(b) consistently holds water.

WHEN A *RAINWATER TANK* OR OTHER *SUPPLEMENTARY WATER SUPPLY SYSTEM* IS REQUIRED TO BE INSTALLED

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
Local government requires a *rainwater tank* or other *supplementary water supply system*	
P1 A *class 1* building must, in addition to being connected to a *reticulated town water supply system*, be connected to a supplementary water source.	**A1** A *class 1* building is connected to— (a) a *rainwater tank*; or (b) a *greywater treatment plant*; or (c) a *supplementary water supply system*; or (d) a combination of (a) and/or (b) and/or (c).
***Rainwater tank* installation and size**	
P2 A *rainwater tank* installed for a *class 1* building must have sufficient collection and storage capacity to provide an acceptable contribution for its external and/or internal connections and their associated water use, having regard to the following— (a) the local rainfall pattern; (b) the *roof* catchment area; and (c) the area available for the location of the *rainwater tank*.	**A2** A *rainwater tank* installed for a *class 1* building— (a) has the minimum *tank* size for the dwelling type as specified in— (i) Appendix A; or (ii) an approval granted to the local government under this Part; and (b) is able to capture rainfall from the minimum *roof* catchment area specified in— (i) Appendix A; or (ii) an approval granted to the local government under this Part; and (c) is connected to— (i) the building's toilet cisterns and washing machine cold water taps (other than those that are connected to a *greywater treatment plant* or other *supplementary water supply system)*; and (ii) a fixture to enable *external use*; and (iii) any other fixture specified in an approval granted to the local government under this Part.

P3 If an internal fixture for a *class 1* building is supplied with water from a *tank,* the *tank* must have a continuous supply of water.

A3 If an internal fixture for a *class 1* building is supplied with water from a *tank*, the *tank* must have—

(a) an *automatic switching device* able to provide potable water from the *reticulated town water supply system*; or

(b) a trickle top-up system able to provide potable water from the *reticulated town water supply system* with—

(i) a minimum flow rate of 2 litres per minute and a maximum flow rate of 4 litres per minute; and

(ii) top-up valves installed in an accessible location;

(iii) a minimum storage volume for the *reticulated town water supply system* top-up not exceeding—

(A) 1,000 litres; or

(B) the storage volume specified in an approval granted to the local government under this Part.

Greywater treatment plant installation and capacity

P4 A *greywater treatment plant* for a *class 1* building must have sufficient storage capacity to provide an acceptable contribution to household water use having regard to—

(a) the amount of available *greywater*; and

(b) the required demand for *greywater*.

A4 A *greywater treatment plant* for a *class 1* building—

(a) is installed to receive *greywater* from all bathroom *sanitary outlets* in the building; and

(b) has a minimum processing capacity to treat total *greywater* input vessel volume in 24 hours; and

(c) has a storage capacity not exceeding 2,000 litres; and

(d) is connected to supply treated water to—

(i) all toilet cisterns;

(ii) washing machine cold water taps;

(iii) a fixture for *external use*; and

(iv) any other fixtures specified in an approval granted to the local government under this Part; and

(e) supplies treated water separate to

			the *reticulated town water supply system*— (i) to all toilet cisterns; and (ii) for cold water washing machines using a separate tap directly connected from the *greywater treatment plant*; and (iii) an *external use*; and (iv) any other fixture specified in an approval granted to a local government under this Part.
P5	If any internal fixtures for a *class 1* building are supplied with water from a *greywater treatment plant,* the fixtures must have a continuous supply of water.	**A5**	A *greywater treatment plant* for a *class 1* building has an *automatic switching device* able to provide potable water from the *reticulated town water supply system*.

ALL INSTALLATIONS

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTIONS	
Water quality protection measures			
P6	A *tank* must have suitable measures to prevent— (a) insects (mosquitoes) and other fauna from breeding inside the *tank*; and (b) vermin from entering the *tank*.	**A6**	A *tank* is provided with— (a) either— (i) screen mesh with an aperture of no greater than 1mm, made of brass, copper, aluminum or stainless steel gauze to prevent the intrusion and breeding of insects (mosquitoes) and other fauna; or (ii) flap valves at each opening of the *tank*; and (b) a vermin trap; and (c) if a *wet system* supplies the *tank*—insect (mosquito) and fauna-proofing for each pipe opening that supplies the *tank*, with screen mesh with an aperture of no greater than 1mm.

P7 A *tank* must have suitable measures to prevent contaminants from entering the *tank* especially having regard to the potential nature and level of contaminants within the locality.

A7 A *tank*—

(a) has a minimum of 20 litres of first flush from the *roof* catchment so that potentially contaminated *rainwater* is diverted and discarded before entering the *tank* where the *tank* is connected to—

(i) a shower or wash basin; or

(ii) a swimming *pool*; or

(iii) kitchen or hot water service; or

(iv) another fixture required by a local government in a local planning instrument; and

(b) for a *tank* that is supplied by a *wet system*, a screened rainhead is installed for each downpipe that supplies the *tank* to prevent leaves and debris from entering the tank.

Note

A rainhead installed on a downpipe reduces the amount of leaf litter caught by the screen mesh for a *tank* and thereby reduces the maintenance required. Although a rainhead is not required to be installed for a dry system, some homeowners may wish to install one.

P8 Water from a *tank* must not contaminate the potable water within a *reticulated town water supply system*.

A8 Where a *tank* is installed, the *reticulated town water supply system* is protected from the potential of back-flow, by the installation of—

(a) a *back-flow prevention device* that complies with AS/NZS 3500:2003; or

(b) for a *tank*, a dual-check valve with an atmospheric port.

System materials

P9 Materials used for the design and construction of a *tank* must be suitable for its intended use.

A9 Where a *tank* is a—

(a) polyethylene tank – it complies with AS/NZS 4766:2006; or

(b) galvanised steel sheet – it complies with AS 1397:2011, and have a minimum coating of 550 g/m^2; or

(c) stainless steel sheet – it complies with ASTM A240/A240M-12:2012; or

(d) concrete tank – it complies with AS 3735:2001; or

(e) collection well or underground water cell (non-potable), or bladder tank – it complies with Vertical Axis Type Section 10 of AS/NZS 1546.1:2008.

Signage on *tanks*

P10 Where a *tank* is installed to supply water to the plumbing fixtures, the *tank* must have appropriate signage to warn that the water in the *tank* is not suitable for drinking.

A10 A *rainwater tank* has—

(a) a readable sign in a visible position on the *tank*, not less than 450mm × 250mm in size; and

(b) text in capital letters of not less than 25mm in height with the following identification: "WARNING: RAINWATER".

A *tank*, other than a *rainwater tank*, has—

(a) a readable sign in a visible position on the *tank*, not less than 450mm × 250mm in size; and

(b) text in capital letters of not less than 25mm in height with the following identification: "WARNING: RECYCLED WATER – DO NOT DRINK"; and

(c) all outlet points clearly marked "WARNING: NOT FOR DRINKING" with safety signs to comply with AS 1319:1994 and AS 1345:1995.

Tank stands and support base

P11 A *tank* stand and the support base of a *tank* must be capable of withstanding loads likely to be imposed.

A11 (1) A *tank* stand or other supporting structure complies with AS/NZS 1170.1:2002 and AS/NZS 1170.2:2011.

(2) The base of the *tank* is well supported by a ground treatment in accordance with the manufacturer's specifications and standard drawings.

Tank openings

P12 Where a *tank* is installed in-ground (partially or fully), all openings are constructed to prevent ingress of surface *stormwater* and groundwater.

A12 (1) All *tank* openings are sealed to prevent surface *stormwater* and groundwater from entering the *tank*.

(2) Non-watertight access lids are sealed, or terminate a minimum 150mm above finished ground level to account for *stormwater* flows, with the ground sloped away from the *tank* and its access lid.

(3) Watertight access lids are permitted to finish flush with the finished surface level.

Tank overflow – point of discharge

P13	*Tank* placement and *tank* overflow is designed to ensure *stormwater* does not pond under building floors or flood around the foundations of buildings.	**A13**	(1) The *tank* overflow is connected to the existing— (a) *stormwater* system; or (b) kerb and channel, or (c) inter-allotment *stormwater* pit. (2) Where no *stormwater* system exists and the *lot* falls away from the street, the *tank* overflow may have to be drained to an on-site *stormwater* dispersion system. The local government must approve on-site *stormwater* dispersion systems before installation. (3) The water from the overflow is considered to be *stormwater* and comply with the relevant requirements of AS/NZS 3500:2003. (4) A physical air break or non-return valve on the outlet from the *tank* overflow is provided before connecting to the *stormwater* drainage system. (5) All plumbing and *stormwater* connections also comply with local government requirements.

Appendix A

Minimum *tank* size and *roof* catchment area for a *class 1* building on a *lot* in a *reticulated town water area*

Dwelling Type	*Tank* size (litres)	*Roof* catchment area (m^2)
Class 1 building other than a detached *class 1* building	3000	A minimum *roof* catchment area that is at least one half (50 per cent) of the total *roof* area or $100m^2$, whichever is the lesser
Detached *class 1* building	5000	A minimum *roof* catchment area that is at least one half (50 per cent) of the total *roof* area or $100m^2$, whichever is the lesser

Version history

Version	Commencement date	Publication date
1.6	1 November 2012	10 September 2012
1.5	1 January 2009	22 October 2008
1.4	1 May 2008	10 April 2008
1.3	1 January 2008	16 November 2007
1.2	1 January 2007	5 December 2006
1.1	1 September 2006	1 September 2006
1.0	1 March 2006	1 March 2006