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

<table>
<thead>
<tr>
<th>Item</th>
<th>Application</th>
<th>Performance Requirements</th>
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<tr>
<td></td>
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<tr>
<td>1</td>
<td>An approval granted by the Minister under this Part applies for a building development application for a class 1 building</td>
<td>✓</td>
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<tr>
<td>2</td>
<td>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</td>
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</table>
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

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<thead>
<tr>
<th>Number</th>
<th>Date</th>
<th>Title</th>
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<tr>
<td>AS/NZS 3500 (Set)</td>
<td>2003</td>
<td>Plumbing and Drainage (Set)</td>
</tr>
<tr>
<td>AS/NZS 4766</td>
<td>2006</td>
<td>Polyethylene storage tanks for water and chemicals</td>
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<tr>
<td>AS 1319</td>
<td>1994</td>
<td>Safety signs for the occupational environment</td>
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<tr>
<td>Standard</td>
<td>Year</td>
<td>Description</td>
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<tr>
<td>AS 1345</td>
<td>1995</td>
<td>Identification of the contents of pipes, conduits and ducts</td>
</tr>
<tr>
<td>AS 1397</td>
<td>2011</td>
<td>Continuous Hot-dip metallic coated steel sheet and strip – Coatings of zinc and zinc alloyed with aluminium and magnesium</td>
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<tr>
<td>ASTM A240/ A240M-12</td>
<td>2012</td>
<td>Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications</td>
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<tr>
<td>AS 3735</td>
<td>2001</td>
<td>Concrete structures retaining liquids</td>
</tr>
<tr>
<td>AS/NZS 1546.1</td>
<td>2008</td>
<td>On-site domestic wastewater treatment units – Septic Tanks</td>
</tr>
<tr>
<td>AS/NZS 1170.1</td>
<td>2002</td>
<td>Structural design actions – Permanent, imposed and other actions</td>
</tr>
<tr>
<td>AS/NZS 1170.2</td>
<td>2011</td>
<td>Structural design actions – Wind actions</td>
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</table>

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

**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.

### ACCEPTABLE SOLUTIONS

**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.
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.

A greywater treatment plant installation and capacity

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.

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.
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

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>ACCEPTABLE SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water quality protection measures</strong></td>
<td><strong>A tank is provided with</strong>—</td>
</tr>
<tr>
<td>P6 A tank must have suitable measures to prevent—</td>
<td>(a) either—</td>
</tr>
<tr>
<td>(a) insects (mosquitoes) and other fauna from breeding inside the tank; and</td>
<td>(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</td>
</tr>
<tr>
<td>(b) vermin from entering the tank.</td>
<td>(ii) flap valves at each opening of the tank; and</td>
</tr>
<tr>
<td></td>
<td>(b) a vermin trap; and</td>
</tr>
<tr>
<td></td>
<td>(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.</td>
</tr>
</tbody>
</table>
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.

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

System materials

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

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.

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.

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/m²; 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**

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.

A rainwater tank has—

(a) a readable sign in a visible position on the tank, not less than 450mm x 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 x 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**

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


(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**

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

(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

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

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Tank size (litres)</th>
<th>Roof catchment area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1 building other than a detached class 1 building</td>
<td>3000</td>
<td>A minimum roof catchment area that is at least one half (50 per cent) of the total roof area or 100m², whichever is the lesser</td>
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<tr>
<td>Detached class 1 building</td>
<td>5000</td>
<td>A minimum roof catchment area that is at least one half (50 per cent) of the total roof area or 100m², whichever is the lesser</td>
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Version history

<table>
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<tr>
<th>Version</th>
<th>Commencement date</th>
<th>Publication date</th>
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<tbody>
<tr>
<td>1.6</td>
<td>1 November 2012</td>
<td>10 September 2012</td>
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<td>1.5</td>
<td>1 January 2009</td>
<td>22 October 2008</td>
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<td>1.4</td>
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