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Purpose

To specify alternative water source requirements for commercial buildings in areas with a reticulated town water supply system.

Commencement

This version of MP 4.3 –

(a) commences on 1 May 2008 and
(b) replaces the version of MP 4.3 published on 16 November 2007.

Application

(1) MP 4.3 applies in local government areas listed in Appendix A on or after 1 January 2008 and in local government areas not listed in Appendix A on or after 1 July 2008 where:

(a) a building development application is made for the construction of a commercial building on or after 1 January 2008; or
(b) lawful carrying out of building work starts for a commercial building that is self assessable development on or after 1 January 2008.

(2) MP 4.3 does not apply to alterations and additions to an existing commercial building.

(3) Despite (1), MP 4.3 does not apply if the development application or lawful carrying out of building work that is self assessable development is for a building in a local government area or part thereof for which the Minister has granted an exemption.

Exemption

(1) A local government may apply to the Minister for an exemption from MP 4.3. A local government’s application to the Minister must be in the approved form.

(2) An exemption granted to a local government by the Minister under MP 4.3:
(a) continues until repealed or amended by the Minister; and
(b) applies to all building development applications lodged with the local government on or after 1 January 2008.

(3) An exemption granted under MP 4.2 - Water Savings Targets (whether before or after MP 4.3 comes into force) is an exemption for MP 4.3 unless the Minister specifies otherwise in the exemption.

(4) A local government may apply the requirements of MP 4.3 in its planning scheme despite any exemption.
Referral Agency

There is no referral agency for this code.

Where the acceptable solutions of this standard are not adopted, the assessment manager may assess the building for compliance with the performance criteria of this standard under Chapter 4 Part 3 of the Building Act 1975.

Associated Requirements

- Plumbing and Drainage Act 2002
- Standard Plumbing and Drainage Regulation 2003
- Integrated Planning Act 1997
- Integrated Planning Regulation 1998
- Building Act 1975
- Building Regulation 2006
- Water Act 2000
- Health Regulation 1996
- Local government planning schemes

Referenced Standards

AS/NZS 3500:2003 – Plumbing and Drainage
AS/NZS4766:2006 – Polyethylene storage tanks for water and chemicals
AS1397:2001 – Steel sheet and strip - Hot-dipped zinc-coated or aluminium / zinc-coated
ASTM A240/A240M-05 – Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
AS3735:2001 – Concrete structures retaining liquids
AS/NZS1546.1:1998 – On-site domestic wastewater treatment units – Septic Tanks
AS/NZS1170.1:2002 – Structural design actions – Permanent, imposed and other actions
AS/NZS1170.2:2002 – Structural design actions – Wind actions

Definitions

Note: Italicised words within the body of the text, 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 section 14 (4) (a)(ii) of the Building Act 1975.

accommodation building means a commercial building where at least 50% of the floor area of that building is classified as a Class 3, 9(a) or 9(c) building under the Building Code of Australia.

alternative water source means any source of water except water from the reticulated town water supply system.

available roof area means the whole of the roof area of every building on the lot included in a development application.

available water sources means any sources of water on the lot, other than water from the reticulated town water supply system and blackwater, which can be treated to the relevant potential end uses as specified in Table T1 of the Queensland Plumbing and Wastewater Code and includes rainwater, stormwater, fire test water, greywater and cooling tower bleed water.

commercial building means a Class 3, 4, 5, 6, 7, 8 or 9 building under the Building Code of Australia (and a Class 10 building associated with or ancillary to those buildings), which contains at least two pedestals.

common property has the meaning given by section 10 of the Body Corporate and Community Management Act 1997.

common tank means a water storage tank or rainwater tank which services more than one building.

external use means the use of water for outdoor application, including gardening, irrigation, ponds and outdoor cleaning but excludes filling of swimming pools.

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

greywater treatment plant means a treatment plant approved under the Queensland Plumbing and Wastewater Code installed on the lot for treating, on the premises, greywater generated on the lot.

lot means the area occupied by buildings shown as part of a building development application for a single title.

Minister means the Minister responsible for the Building Act 1975.

other building means a commercial building which is not an accommodation building.

pedestal means a toilet pan or urinal, other than a waterless urinal.
**rainwater** means natural precipitation collected from any surface of building, other than surfaces of the building that are:

(i) intended or adapted for regular occupation, other than incidental maintenance;
(ii) designed or intended for vehicular access;;
(iii) less than 2 meters from the finished ground level; and
(iv) subject to any source of contamination from the building which would make the water unfit to use in an untreated state for the intended uses.

**rainwater tank** means a covered tank or combination of covered tanks used to collect *rainwater* only from a building's *roof* or multiple *roofs*.

**required fire-fighting capacity** means the volume of water required to comply with Part E of the Building Code of Australia.

**required pedestals** means for

- accommodation buildings, all *total pedestals* in the building;
- other buildings, at least half the *total pedestals* rounded up to a whole number;
- small buildings, the *available roof area* divided by 50m², rounded up to a whole number.

**reticulated town water supply system** means a pipe network managed by a water service provider registered under the *Water Act 2000* for delivering drinking water directly to premises.

**roof** means the upper surface of a building.

**small building** means any commercial building which –

(i) is not an accommodation building;
(ii) is not on a lot that has a swimming pool; and
(iii) has less than 10 total pedestals.

**stormwater** includes water collected from any surface of the building other than rainwater.

**suitable uses** includes sanitary flushing, firefighting water supply, air conditioning, refrigeration and irrigation.
swimming pool means any structure, excavation or spa which is intended for swimming, wading, paddling or other human aquatic activity, other than a spa located in a sole occupancy unit or a bath in a bathroom.

tank means a rainwater tank or water storage tank.

water storage tank means a covered tank or combination of covered tanks used for the storage of treated water.

total pedestals means the total number of pedestals in the part of the building which is a commercial building.
<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>ACCEPTABLE SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative Water Source</td>
<td>Commercial buildings connected to a reticulated town water supply system - (a) use at least one of the following measures – (i) a rainwater tank; (ii) a water storage tank; (iii) a common tank; or (iv) a greywater treatment plant; and (b) supply top up water to any swimming pool on the lot with water from a rainwater tank before using any remaining available roof area to service required pedestals; and (c) use the measures adopted in (a) to supply water to required pedestals and other suitable uses specified in this code.</td>
</tr>
</tbody>
</table>

**Rainwater tank - use, capacity, catchment area, water quality protection measures and point of discharge**

| P1 | Commercial buildings Supplied directly with water from the reticulated town water supply system, by a water service provider registered under the Water Act 2000 must have an alternative water source which provides water for suitable uses. |
| A1 | Rainwater tanks are connected to - (a) swimming pools on the lot (b) each required pedestal; (c) an external use; (d) washing machine cold water taps; and (e) other fixtures as specified by the local government in a local planning instrument. |

| P2 | Rainwater tanks must provide water for suitable uses on the lot. |
| A2 | Rainwater tanks have a minimum storage capacity of - (a) 1500L per required pedestal; and (b) any additional capacity specified in Appendix B; and (c) any additional capacity specified by the local government in a local planning instrument. |

<p>| P3 | Rainwater tanks must have sufficient storage capacity to provide an acceptable contribution to water supply having regard to - (a) the available roof area; and (b) the uses connected to the rainwater tank. |
| A3 | Rainwater tanks are connected to - (a) swimming pools on the lot (b) each required pedestal; (c) an external use; (d) washing machine cold water taps; and (e) other fixtures as specified by the local government in a local planning instrument. |</p>
<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>ACCEPTABLE SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P4</strong> Rainwater tanks must be installed to provide an acceptable contribution to water supply having regard to - (a) available roof area; and (b) the suitable uses for the water on the lot.</td>
<td><strong>A4</strong> Rainwater tanks - (a) are installed to receive rainwater from the lesser of – (i) the available roof area; or (ii) 50m² of roof area for each connected required pedestal. (b) which supply water to a swimming pool are installed to receive rainwater from an additional roof catchment area being the lesser of – (i) the available roof area; or (ii) the additional area specified in Appendix B. (c) are installed to receive rainwater from any additional roof area specified by the local government in a local planning instrument.</td>
</tr>
<tr>
<td><strong>P5</strong> Rainwater tanks must have suitable measures to prevent contaminants from entering the tank having regard to the nature and level of contaminants within the locality.</td>
<td><strong>A5</strong> Rainwater tanks have a - (a) screened downpipe rainhead, having screen mesh 4 – 6mm and designed to prevent leaves from entering each downpipe; and (b) minimum of 20 litres of the first flush of roof catchment rainwater diverted/discarded before entering the rainwater tank where: (i) connected to showers, wash basins, kitchen or hot water services; or (ii) required by a local government in a local planning instrument.</td>
</tr>
<tr>
<td><strong>P6</strong> Rainwater tank placement and overflow is designed to ensure stormwater does not pond under building floors or flood around foundations of buildings.</td>
<td><strong>A6</strong> Rainwater tank overflow - (a) is connected to the existing stormwater system or kerb and channel, or inter-allotment stormwater pit; or (b) is drained to an on-site stormwater dispersion system approved by the local government if no stormwater system exists and the property slopes away from the street; (c) piping complies with AS/NZS 3500:2003 requirements for stormwater; and (d) is installed with a physical air break or non-return valve on the outlet.</td>
</tr>
<tr>
<td>PERFORMANCE CRITERIA</td>
<td>ACCEPTABLE SOLUTIONS</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td><strong>Water Storage Tanks</strong> - treated water supply, use, capacity and water sources</td>
<td></td>
</tr>
<tr>
<td><strong>P7</strong> Water storage tanks receive only water treated for the connected <em>suitable uses</em>.</td>
<td><strong>A7</strong> Water storage tanks - (a) receive water treated to the standard required for the connected end uses as specified in Table T1 of the Queensland Plumbing and Wastewater Code; and (b) do not store untreated water for more than 24 hours; and (c) discharge excess to an approved discharge point.</td>
</tr>
<tr>
<td><strong>P8</strong> Water storage tanks must provide water to <em>suitable uses</em> on the <em>lot</em>.</td>
<td><strong>A8</strong> Water storage tanks are connected to – (a) each <em>required pedestal</em>; (b) <em>an external use</em>; (c) washing machine cold water taps; and (d) other fixtures as specified by the local government in a local planning instrument.</td>
</tr>
<tr>
<td><strong>P9</strong> Water storage tanks must have sufficient storage capacity to provide an <em>alternative water source</em> having regard to - (a) <em>available water sources</em>; and (b) the connected uses.</td>
<td><strong>A9</strong> Water storage tanks have a minimum storage capacity of - (a) 1500L per <em>required pedestal</em>; and (b) any additional capacity specified by the local government in a local planning instrument; and (c) any <em>required fire-fighting capacity</em>.</td>
</tr>
<tr>
<td><strong>P10</strong> Water storage tanks must be installed to provide an acceptable contribution to water supply having regard to - (a) volume of water from <em>available water sources</em>; and the <em>suitable uses</em> for the water on the <em>lot</em>.</td>
<td><strong>A10</strong> Water storage tanks receive treated water from - (a) one or a combination of <em>available water sources</em>; and (b) any additional <em>available water sources</em> specified by the local government in a local planning instrument.</td>
</tr>
</tbody>
</table>
### Tanks - Water quality protection measures, system materials and openings

<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Acceptable Solutions</th>
</tr>
</thead>
</table>
| **P11** A tank must have suitable measures to prevent mosquitos breeding in the tank and vermin entering the tank. | **A11** Tanks have -  
(a) either -  
(i) mosquito-proof screens of brass, copper, aluminum or stainless steel gauze not coarser than 1 mm aperture mesh; or  
(ii) flap valves at every opening of the tank; and  
(b) either -  
(i) a vermin trap; or  
(ii) mosquito-proofing in accordance with HB230-2006 when a wet system is used to harvest rainwater. |
| **P12** Internal fixtures supplied from a tank must have a continuous supply of water. | **A12** Tanks have –  
(a) an automatic switching device providing supplementary water from the reticulated town water supply system; or  
(b) a top up system, providing supplementary water from the reticulated town water supply system with -  
(i) a minimum flow rate complying with Appendix C; and  
(ii) top up valves installed in an accessible location; and  
(ii) a minimum storage volume, at which top up is triggered, greater than the total of:  
A. any required fire fighting capacity; and  
B. (i) either the volume specified in Appendix C; or  
(ii) any greater volume specified by the local government in a local planning instrument.  
(c) the outlet for the internal fixtures is located above the point at which the tank still contains any required fire-fighting capacity. |
<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>ACCEPTABLE SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P13</strong> Water from a tank must not contaminate the reticulated town water supply system.</td>
<td><strong>A13</strong> A backflow prevention device is installed to protect the reticulated town water supply system in accordance with AS/NZS 3500:2003 Plumbing and Drainage.</td>
</tr>
</tbody>
</table>
| **14** Materials used in a tank must be suitable for the intended use. | **A14** (a) Polyethylene tanks comply with AS/NZS4766:2006 polyethylene storage tanks for water and chemicals.  
(b) Galvanised steel sheet complies with AS1397:201 steel sheet and strip – hot-dipped zinc-coated or aluminium/zinc-coated, and have a minimum coating of 55 g/m²  
(c) Stainless steel sheet complies with ASTM A240/A240M-05 standard specification for chromium and chromium-nickel stainless steel plate, sheet, and strip for pressure vessels and for general applications.  
(d) Concrete tanks comply with AS3735:2001 concrete structures containing liquids.  
(e) Collection well/underground water cell (non potable) or bladder tank complies with Vertical Axis Type Section 10 of AS/NZS 1546.1:1998 on-site domestic wastewater treatment units – Septic Tanks. |
| **P15** Tank openings are constructed to prevent ingress of surface stormwater and groundwater. | **A15** (a) Tanks are sealed to prevent surface stormwater and groundwater entering the tank.  
(b) Non water-tight access lids are sealed, or terminate a minimum 150 mm above finished ground level stormwater flows with the ground sloped away from the tank and access lid.  
(c) Water tight access lids are permitted to finish flush with the finished surface level. |
<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>ACCEPTABLE SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Greywater Treatment Plants</strong></td>
<td><strong>Greywater treatment plants</strong> – (a) are installed to receive all greywater from within the building; and (b) have a minimum processing capacity to treat total greywater input vessel volume in 24 hours; and (c) have a minimum storage capacity to hold– (i) in an accommodation building, 30 litres of greywater per required pedestal; or (ii) in other buildings and small buildings, 15 litres of greywater per required pedestal; and (d) are connected to supply treated water to – (i) each required pedestals; (ii) an external use; (iii) washing machine cold water taps; (iv) other fixtures as specified by the local government in a local planning instrument; and (e) comply with Table T1 of the Queensland Plumbing and Wastewater Code for the effluent compliance value for end uses with a high level of human contact; and (f) have an automatic switching device providing supplementary water from the reticulated town water supply system; and (g) dispose of untreated greywater to the sewer.</td>
</tr>
<tr>
<td>P16 Greywater treatment plants provide water for suitable uses on the lot and must have sufficient storage and processing capacity to provide an alternative water source having regard to - (a) the amount of available greywater; and (b) the suitable uses for treated greywater.</td>
<td>A16</td>
</tr>
</tbody>
</table>
Appendix A - Local Government Areas

From 1 January 2008

Beaudesert Regional Council
Brisbane City Council
Fraser Coast Regional Council
Gold Coast City Council
Gympie Regional Council
Ipswich City Council
Lockyer Valley Regional Council

Logan City Council
Moreton Bay Regional Council
Redland City Council
Somerset Regional Council
South Burnett Regional Council
Sunshine Coast Regional Council
Toowoomba Regional Council

Appendix B – Tank size and roof catchment area requirements where a swimming pool is installed on the lot

<table>
<thead>
<tr>
<th>Gross Pool area (m²)</th>
<th>Rainwater tank size requirements (litres)</th>
<th>Roof catchment area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-50</td>
<td>3,000</td>
<td>50</td>
</tr>
<tr>
<td>51-100</td>
<td>5,000</td>
<td>50</td>
</tr>
<tr>
<td>101-150</td>
<td>10,000</td>
<td>100</td>
</tr>
<tr>
<td>151-200</td>
<td>15,000</td>
<td>150</td>
</tr>
<tr>
<td>201-250</td>
<td>20,000</td>
<td>200</td>
</tr>
<tr>
<td>251-300</td>
<td>25,000</td>
<td>200</td>
</tr>
<tr>
<td>301-500</td>
<td>30,000</td>
<td>200</td>
</tr>
<tr>
<td>&gt;500</td>
<td>50,000</td>
<td>300</td>
</tr>
</tbody>
</table>

Appendix C – Minimum flow rates and top up levels

<table>
<thead>
<tr>
<th>Tank Size (litres)</th>
<th>Minimum Flow Rate (litres per minute)</th>
<th>Minimum Top Up Supply (litres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5000</td>
<td>2</td>
<td>1000</td>
</tr>
<tr>
<td>5001-10000</td>
<td>8</td>
<td>2000</td>
</tr>
<tr>
<td>10001-30000</td>
<td>16</td>
<td>8000</td>
</tr>
<tr>
<td>30001 - 999999</td>
<td>32</td>
<td>16000</td>
</tr>
</tbody>
</table>

MP 4.3 Calculator

The Department of Infrastructure and Planning has a published calculator to assist in determining requirements under this Part at www.dip.qld.gov.au