

# Backflow and Cross Connection Policy

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<b>Strategic Pillar</b>	Connections	
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# Backflow and Cross Connection Policy

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## 1. OUTCOMES:

- 1.1 The purpose of the policy is to improve the safety of Queanbeyan-Palerang Council's water supply by reducing the risk of backflow contamination from connections to the water supply system.
- 1.2 This policy identifies the type of backflow prevention required for customer connections with low, medium or high hazards as defined in Australian Standard/New Zealand Standard (AS/NZS) 3500, Part 1 Water Services (AS/NZS 3500:1) and the conditions with which customers must comply for continued connection to the water supply system.

## 2. POLICY:

- 2.1 The objectives of the policy are:
  - i. To assure the quality of Queanbeyan-Palerang Regional Council's potable and non-potable water supply by minimising the risk of backflow contamination from connections to the supply system;
  - ii. To set out Queanbeyan-Palerang Council's requirements for the installation and maintenance of containment backflow prevention devices on high, medium and low hazard properties;
  - iii. To identify when testable backflow prevention devices are required to protect the water supply from contamination back through a customer's water service;
  - iv. To identify backflow prevention containment requirements for customers with multiple water supplies that includes potable and non-potable water supplies.

## 3. SCOPE OF THE POLICY:

- 3.1 This Backflow and Cross Connection Prevention Policy applies to all customers connected to Queanbeyan-Palerang Council's water supply.
- 3.2 The policy applies to all water connections connected to Queanbeyan-Palerang Regional Council's water reticulation network of both potable and non-potable (recycled) water.

## 4. DEFINITIONS:

- 4.1 **A property**, for the purposes of this policy, includes all properties with a water service connection to either the potable supply, non-potable supply or both.
- 4.2 **AS/NZS 3500** is the Australian Standard/New Zealand Standard for plumbing and drainage. **AS/NZS 3500:1** refers to Part 1 (Water Services) of this standard.
- 4.3 **Backflow** is defined as:
  - i. Flow in the direction contrary to the normal or intended direction of flow;
  - ii. The unintended flow of water from a potentially polluted source into a potable water supply system.
- 4.4 A **Backflow Prevention Device** is a mechanical device that will prevent the reverse flow of water from a potentially polluted source into the potable water supply system.
- 4.5 **Connections** are all connections to a Queanbeyan-Palerang Council water main, both potable and non-potable, including those from customers' premises or from standpipes.
- 4.6 **Containment protection** is defined as the installation of a backflow prevention device on the water service at the property boundary, to prevent backflow from within the property entering the potable water supply system.
- 4.7 **Cross-connection** is defined as any connection or arrangement between the potable water supply system connected to the water main or any fixture, which may under certain conditions enable non-drinking water or other substances to enter the potable water supply system.
- 4.8 **Customer** is defined as the property owner.

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- 4.9 **Decentralised wastewater treatment system** is defined as a privately owned, non-potable water supply system, including treated greywater.
- 4.10 **Fire drencher sprinkler systems** are defined as heat activated fire suppression systems, which spray water on the outside surface of a building or structure, to prevent the spread of fire from an adjacent building or structure.
- 4.11 **Fire services** are defined as services comprising water pipes, fire hydrants, fire hose reels, fittings, and including water storage or pumping facilities, which are installed solely for fire fighting and extinguishing purposes in and around a building or property. Under certain conditions part of a fire sprinkler system may be included.
- 4.12 **Hazard ratings** are defined in AS/NZS 3500 as follows:
- i. High Hazard - Any condition, device or practice, which in connection with the water supply system has the potential to cause death;
  - ii. Medium Hazard - Any condition, device or practice, which in connection with the water supply system could endanger health;
  - iii. Low Hazard - Any condition, device or practice that, in connection with the drinking water supply system, constitutes a nuisance but does not endanger health or cause injury.

## 5. LEGISLATIVE OBLIGATIONS AND/OR RELEVANT STANDARDS:

- 5.1 All customers must comply with the requirements of the Plumbing Code of Australia 2004 and AS/NZS 3500:1. All customers with a water connection must assess the potential hazard and shall install appropriate backflow prevention at the boundary for containment purposes. The installation of a backflow prevention containment device is necessary to ensure the public water supply system is protected from backflow of contaminants.

## 6. CONTENT:

### 6.1 CONDITIONS OF INSTALLATION

#### 6.1.1. Operational principles

- 6.1.1.1 The customer is responsible for the full cost of complying with this policy.
- 6.1.1.2 All backflow prevention containment devices installed to comply with this policy are the responsibility of the customer; this may include but is not limited to installation, maintenance and annual testing.
- 6.1.1.3 Queanbeyan-Palerang Council will maintain a register of testable device installations, annual maintenance records and will conduct sample audits of installations to ensure ongoing compliance with AS/NZS 3500:1.
- 6.1.1.4 Existing customers connected to the water supply must install a backflow prevention containment device within a designated timeframe of a notice to install issued by Queanbeyan-Palerang Regional Council. Timeframes will be variable dependant on Council's perceived risk to public health and safety and council infrastructure.
- 6.1.1.5 If Queanbeyan-Palerang Council determines that the backflow prevention device is unsatisfactory and issues a notice requiring the customer to repair, maintain, test, replace or install a backflow prevention device, the customer shall comply with the notice within the time specified in the notice.
- 6.1.1.6 If the customer fails to install, repair, maintain, replace or test a backflow prevention device as required by a notice issued by Queanbeyan-Palerang Regional Council, Queanbeyan-Palerang Regional Council may disconnect (in the case of a non-residential property) or restrict (in the case of a residential property or mixed development) the customer from the water supply system until such time as the customer has complied with the notice

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so to prevent contamination of the water supply. Queanbeyan-Palerang Regional Council may also impose a re-inspection fee or charge for administrating non-compliance with the policy.

- 6.1.1.7 Queanbeyan-Palerang Council reserves the right to take action against the licensed plumber for any incorrect installation that does not meet the requirements of AS/NZS 3500:1.
- 6.1.1.8 If the process at a property changes, resulting in a reduced hazard rating, the property owner must have an accredited backflow prevention plumber certify the change in hazard rating and then inform Queanbeyan-Palerang Council.
- 6.1.1.9 Council may conduct a site audit to verify the new hazard rating.

### 6.1.2 All properties connected to Queanbeyan-Palerang Council's water supply system are to have appropriate backflow prevention containment devices installed

- 6.1.2.1 The type of device installed shall be in accordance with the hazard rating (AS/NZS 3500.1.4.3) of the processes conducted, or the water supply installations present on site regardless of whether or not the site is deemed as being commercial, domestic or a mixed development.
- 6.1.2.2 If the hazard rating varies due to multiple processes, the highest hazard rating shall be applied.
- 6.1.2.3. Properties identified as having high or medium hazards must install a testable backflow prevention device.
- 6.1.2.4 Where hazards are unknown for a commercial, industrial or a mixed development, the hazard rating will default to high and the installation of a testable device will be required.
- 6.1.2.5 High hazards require the installation of a Registered Break Tank, Reduced Pressure Zone Device or Registered Air Gap.
- 6.1.2.6 Medium hazards require the installation of a testable double check valve as a minimum.
- 6.1.2.7 Low hazards require the installation of a non-testable dual check valve as a minimum.
- 6.1.2.8 Metered standpipes require a testable double check valve.
- 6.1.2.9 Fire services require the installation of a double check detector assembly as a minimum.
- 6.1.2.10 Independent fire drencher sprinkler systems require the installation of a dual check valve.
- 6.1.2.11 Properties supplied with both drinking (potable) and non-drinking (non-potable) water are required to install an appropriate level of backflow prevention containment on **BOTH** supply systems.
- 6.1.2.12 The installed devices shall be the same on both the potable and non-potable services in accordance with the deemed hazard rating of the property as stipulated in AS/NZS 3500.1.4.3 "Cross Connection Hazard Rating". These properties include commercial developments, mixed developments, home based business or activities operating from a domestic residence outside of a domestic nature that fall within a higher hazard rating and areas serviced by a decentralised wastewater treatment system. Protection of the non-potable recycled supply shall be addressed as follows.
  - i. Residential properties, not conducting an activity that falls within AS/NZS 3500.1.4.3 High or Medium Hazard Ratings, provided with a non-potable recycled water supply shall require a dual check valve/dual check meter on the recycled water supply and the potable drinking water supply, which provides a minimum low hazard control against cross connection of the potable and non-potable supplies and to also prevent a low hazard backflow event of a domestic nature to either supply system.

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- ii. Non-residential properties or residential properties conducting an activity within the High or Medium risk category as defined in AS/NZS3500.1.4.3, provided with reticulated recycled water supply shall install an appropriate backflow prevention device in accordance with the hazard rating of the property on both potable and non-potable supplies at the point of service to the property. Where testable devices are required a registration form for each device must be completed and devices are to be tested annually by a qualified backflow prevention plumber.

## 6.1.3 All backflow prevention containment devices shall be installed in accordance with AS/NZS 3500:1

- 6.1.3.1. A backflow prevention containment device must be fitted to all water supplies entering the property regardless of the supply type or metering arrangement. All devices must be installed on the outlet side of the master water meter(s) supplying the property to achieve site containment. In circumstances where there is no master water meter, the containment device shall be installed on the water supply where it enters the property boundary. There must be no connections bypassing the containment device or water meter.
- 6.1.3.2. A backflow containment device must be installed so that the underside of the valve is a minimum of 300mm above the surrounding surface unless otherwise specified in the code.
- 6.1.3.3. Where a fire booster service is installed, the device must be installed so that the underside of the valve is a minimum of 750mm above the surrounding surface.
- 6.1.3.4. On a metered standpipe, the device shall be integrated into the design of the standpipe.
- 6.1.3.5. On a separate hydrant and/or sprinkler fire service, the device shall be installed close to where the water service crosses the property boundary, upstream of any booster assembly on, or offtake from the fire service.

## 6.1.4 Customer compliance and reporting requirements

- 6.1.4.1. All backflow prevention devices must be installed by a licensed plumber. Only a licensed plumber with backflow prevention accreditation may commission and test the device.
- 6.1.4.2. Registered Break Tanks and Registered Air Gaps must be installed and certified by a licensed plumber.
- 6.1.4.3. Customers are responsible for the installation, maintenance and annual testing of all backflow prevention devices in accordance with AS/NZS 3500:1 and ensuring that the associated documentation (Backflow Prevention Application, Inspection and Maintenance Report) and any prescribed fee is forwarded to Queanbeyan-Palerang Regional Council.
- 6.1.4.4. The customer's licensed and backflow accredited plumber is responsible for completing the Backflow Prevention Application (required on installation of the device) and the Backflow Prevention Device Inspection and Maintenance Report (required on commissioning or testing the device).
- 6.1.4.5. The device installation and commissioning test must be registered with Queanbeyan-Palerang Regional Council within two working days of completion of the work.
- 6.1.4.6. Customers are also responsible for the provision of zone and individual backflow protection from hazards within their property as specified in AS/NZS 3500:1.

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## 7. PERFORMANCE INDICATOR:

- 7.1 Queanbeyan-Palerang Council will establish a record system of all testable backflow prevention devices including the devices details, location, test records and dates for annual testing.
- 7.2 Queanbeyan-Palerang Council will also carry out audits of backflow prevention device installations with an emphasis on:
  - i. Confirming the hazard rating for particular properties;
  - ii. Ensuring devices are accessible and clear of ponding, vegetation or debris;
  - iii. Checking for leaks;
  - iv. Ensuring that testable devices are maintained in a satisfactory operating condition;
  - v. Ensuring that there have been no alterations to the plumbing at the premises and that the backflow prevention device has not been tampered with.