

## Water – Requirements for the Provision of Cold and Heated Water

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**Functional Sub group** Clinical/ Patient Services - Infectious diseases  
Population Health - Environmental  
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**Summary** This policy contains requirements for the provision of cold and heated water to be observed by hospitals, as defined in the Public Health Act 2010, to manage the risk of Legionella and to prevent scalding.

**Replaces Doc. No.** Microbial Sampling - Warm water systems including thermostatic mixing valves [PD2006\_078]  
Water - Requirements for the Provision of Cold and Heated Water [PD2005\_344]  
Microbial Control - NSW Code of Practice for the Control of Legionnaires' Disease [PD2006\_100]

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**Applies to** Local Health Districts, Board Governed Statutory Health Corporations, Chief Executive Governed Statutory Health Corporations, Specialty Network Governed Statutory Health Corporations, Affiliated Health Organisations, Public Health System Support Division, Community Health Centres, Dental Schools and Clinics, Ministry of Health, Private Hospitals and Day Procedure Centres, Public Health Units, Public Hospitals

**Audience** Chief Executives, Health Care Facility Managers, Engineering Services personnel

**Distributed to** Public Health System, Environmental Health Officers of Local Councils, NSW Ambulance Service, Ministry of Health

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### Director-General

This Policy Directive may be varied, withdrawn or replaced at any time. Compliance with this directive is **mandatory** for NSW Health and is a condition of subsidy for public health organisations.

## WATER – REQUIREMENTS FOR THE PROVISION OF COLD AND HEATED WATER

### PURPOSE

This Policy Directive and the attached procedures outline the legal requirements to be met by all hospitals in relation to the provision of cold and heated water at all patient and client accessible areas in hospitals and other related health care facilities, as well as current information about microbial sampling of warm water systems.

### MANDATORY REQUIREMENTS

Chief Executives, owners and operators of hospitals have a duty of care to maintain a safe environment for patients in their health care facilities in relation to the prevention of scalding and the control of systems that can be likely to grow micro-organisms that are liable to cause Legionnaires' disease.

It is imperative that Chief Executives, owners and operators have effective monitoring systems to ensure their legislative obligations as set out in this policy are implemented and maintained in every facility under their control.

### IMPLEMENTATION

This Policy Directive must be implemented in all NSW hospitals.

Chief Executives shall ensure compliance with all aspects of this Policy Directive and ensure it is brought to the attention of **all** personnel engaged in health care delivery and to engineering services personnel.

#### Roles and Responsibilities

**Health Care Facility Managers** are responsible for:

- Ensuring that a suitable sign is in place where water at a temperature exceeding 50.0°C is provided (Section 3.2)
- Ensuring that regular safety checks of warm water systems are conducted (Sections 3.5 and 5.2)
- Complying with the notification requirements to local councils regarding warm water systems (Section 4.2)
- Ensuring that an appropriate microbial monitoring and, where necessary, a disinfection system is in place (Section 4.4)
- Ensuring that maintenance staff comply with the mandated maintenance requirements (Section 5.2).

## REVISION HISTORY

Version	Approved by	Amendment notes
February 2015 (PD2015_008)	Deputy Secretary, Population and Public Health	Rescinds PD2005_344, PD2006_100 and PD2006_078. Incorporates prescribed maintenance requirements for warm water systems under clause 8(7) Public Health Regulation 2012.
10 October 2006 (PD2006_078)	Director-General	Described the requirement for health facilities to have appropriate monitoring programs for their warm water systems including thermostatic mixing valves to manage the potential health risk from the growth of Legionella bacteria.
15 November 2006 (PD2006_100)	Director-General	The Code of Practice relates particularly to water cooling systems, which includes cooling towers and evaporative condensers, and warm water systems, including thermostatic mixing valves.
27 January 2005 (PD2005_344)	Director-General	Provides best practice applicable to health care delivery in NSW. (Previously Circular 2004/10)

## ATTACHMENTS

1. Water – Requirements for the Provision of Cold and Heated Water: Procedures.

**Water – Requirements for the Provision of Cold and Heated Water**



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**Issue date:** February 2015

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## 1 BACKGROUND

### 1.1 About this document

This document contains requirements for the provision of cold and heated water under Water Clause 8(7) Public Health Regulation 2012, specifically when provided in hospital facilities and, where specified, in other premises. This document does not consider the source of the water used or its quality and suitability for any particular use. However, this document does consider the control of *Legionella* in warm water systems.

### 1.2 Key definitions

**Cold water** refers to unheated water being delivered to fixtures.

**Devices** such as thermostatic mixing valves mix cold water and hot water to produce warm water for personal ablutions that will not scald people. Warm water can also be produced by heating cold water directly to the desired temperature.

**Fixtures** refers to items such as taps, showers, toilets, sinks, dishwashers, clothes washers, and the like which use water for specific purposes such as ablutions, cleaning, washing, beverages, drinking, hand washing and sanitising.

**Heated water** refers to water that has been heated and delivered to fixtures as either warm water or as hot water.

**Hospital** is defined in Section 5 of the [Public Health Act 2010](#) as follows:

- (a) A public hospital within the meaning of the [Health Services Act 1997](#), or
- (b) A declared mental health facility within the meaning of the [Mental Health Act 2007](#), or
- (c) A private health facility within the meaning of the [Private Health Facilities Act 2007](#), or
- (d) A nursing home, or
- (e) Any other institution declared by the regulations to be a hospital for the purposes of this definition.

**Hot water** is delivered directly to fixtures for beverage making and for washing and cleaning purposes.

## 2 TEMPERATURE CONTROL DEFINITIONS AND APPLICATIONS

### 2.1 Scald Prevention Definitions

In health care facilities the supply of temperature controlled warm water is necessary to minimise the risk of **accidental scalding**. For the purposes of scald prevention:

- Hot water is heated water delivered or used at a nominated temperature exceeding 45.0°C

- Warm water is heated water delivered or used at a nominated temperature of 45.0°C or less.

## 2.2 Legionella Control Definitions

For the purposes of **Legionella control** the definitions of hot water system and warm water system are contained in Section 26 of the *Public Health Act 2010* as follows:

- Hot water system means a system designed to heat and deliver water at a temperature of at least 60°C at each outlet point
- Warm water system means a system designed to heat and deliver water of less than 60°C at each outlet point.

Each set of definitions are applied accordingly for the purposes of scald prevention or *Legionella* control respectively.

## 3 SCALD PREVENTION

The definitions of hot water and warm water outlined in Section 2.1 apply to Part 3.

### 3.1 Hot, Cold and Warm Water Installations

- Taps used in health care facilities must be approved to AS/NZS 3718: 2005 Water supply – Tap ware
- Installations must be carried out in accordance with the requirements of the Plumbing Code of Australia
- Warm and cold water installations (i.e. those where warm and cold water is supplied through either separate taps and a common outlet or a single lever mixer) must be provided for patient baths, patient showers and patient hand basins and for staff hand basins in any areas through which a patient might pass
- Cold water only installations may be provided for low level hand basins at toddler height and (as an alternative to hot and cold installations) for hand basins in public areas
- Hot and cold water installations (i.e. those where hot and cold water is supplied through either separate taps and a common outlet or a single lever mixer) may be provided for all other areas. The hot water system shall comply with the:
  - *Public Health Act 2010*
  - *Public Health Regulation 2012*
  - *AS/NZS 3666.1 and 2, 2011, Air-handling and water systems of buildings*
  - *Plumbing Code of Australia.*
- **Dead legs** in pipe work shall not exceed 10 lineal metres or contain greater than 2 litres of water whichever is the lesser. (A dead leg is defined in AS/NZS3500 as a

branch pipe in a hot water system containing dead water. Dead water is the cold water drawn off before hot water commences to discharge from a hot water outlet).

### 3.2 Temperature Coding for Water Tap Outlet Fittings

Tap outlets must be clearly identified using the following tap identification table in Table 1. This identification must be either the tap indicator lettering; or colour; or the tap handle colour and must be used on all new or upgraded installations.

**Table 1: Tap Identification Table**

Tap Outlet	Water Temperature	Tap Indicator Lettering	Tap Indicator Colour	Tap Handle Colour
Hot	> 45.0°C	H	Red	Red
Warm	38.0°C to 45.0°C	W	Yellow	Yellow
Cold	Not heated	C	Blue	Blue

Where hot water is being delivered to an outlet of a fixture used primarily for non-patient accessible areas at a temperature exceeding 50.0°C, such fixture must have a sign, using a symbol and red writing on a white background in appropriate languages, displayed adjacent to the fixture which states, “Warning – this fixture may deliver hot water which will scald”.

### 3.3 Approval of Warm Water Systems

All bathing and ablution locations that can normally be accessed by patients must have NSW Health approved warm water systems installed. Approved warm water systems, including thermostatic mixing valves, are listed in the *List of Approved Warm Water Systems and Thermostatic Mixing Valves* on the NSW Health Website <http://www.health.nsw.gov.au/environment/legionellacontrol>

See Section 4.3 for further information.

### 3.4 Heated Water Temperature Depending on Application in a Health Care Facility

The following tables; Table 2: Temperature requirements for heated water systems, used in patient accessible areas by water use; and Table 3: Temperature requirements for heated water systems, Staff Use / Accessible Areas (no patient access) by water use, list the use of the heated water and the temperature requirement for that use within particular areas within a health care facility.

Children are persons who are less than 16 years of age however it may be acceptable, at the discretion of the hospital facility, to include young persons under the age of 18 years as children.



**Table 2: Temperature requirements for heated water systems, used in patient accessible areas, by water use.**

<b>Water Use</b>	<b>Acceptable Water Temperature</b>	<b>Facility Area or Use</b>
Beverage Preparation	Boiling Water *	All patient occupied areas
Personal hygiene and hand washing of cups, dishes and utensils.	Children 38.0°C to 40.5°C and 43.5°C thermal shut-off**  Adults 40.5°C to 45.0°C and 46.0°C thermal shut-off**	All outlets in patient occupied areas includes washbasins, sinks, baths, and showers in ward areas consultant's rooms, treatment areas, clinics and community health centres.

\* Note: Boiling water dispensers must be in a lockable cupboard in areas used by frail and confused patients.

\*\*In case of a failing cold water pressure, the hot water supply shall be shut off instantly, thus giving a failsafe shutoff to prevent scalding.

*There are a range of applications within hospitals that patients normally DO NOT have access, including kitchens, laundries and staff cleaning areas. The water temperature required for these locations are detailed below in Table 3.*

Temperature compliance with Table 3 is strongly recommended, however in a particular case, variation can be considered to allow for changes in either technology and / or procedure, for example utilising a chemical as part of the process that then allows adequate sanitisation to take place at a lower temperature i.e. 65°C.

Patient and staff safety including assessment of infection control risks and the risk of scalds SHALL be considered at all times.

**Table 3: Temperature requirements for heated water systems, Staff Use / Accessible Areas (no patient access), by water use**

<b>Water Use</b>	<b>Acceptable Water Temperature</b>
Beverage Preparation	Boiling Water
Sinks for Manual Dishwashing	77.0°C minimum delivery at outlet (a basket is necessary for rinsing to prevent scalding)
Cleaner's Sink/Slop Hopper areas and Laundry wash tubs	60.0°C minimum at outlet
Auto Dishwashing Machines	60.0°C to 70.0°C at inlet to machine
Auto Utensil Washer/ Disinfector (See: AS 2945 (Int)-2002), Batch-type washer/disinfectors for health care	60.0°C minimum at inlet to machine
Auto Clothes Washing See AS/NZS 4146:2000: Laundry practice	70.0°C to 85.0°C at inlet to machine
Personal hygiene	50.0°C maximum at outlet (for new and modified installations)

### **3.5 Temperature Safety Check of Warm Water Systems**

A monthly temperature safety check of the warm water system must be conducted from at least one ablution outlet (preferably a hand basin) supplied by each thermostatic mixing valve or tepid warm water system and the temperature recorded. This is a prescribed maintenance requirement under the *Public Health Act 2010* and *Public Health Regulation 2012*. See Section 5.2 for detailed requirements.

### **3.6 Scalds Incident Management**

All health care facilities should be aware of, and implement incident management protocols and specifically be aware of *Policy Directive PD2007\_061 Incident Management*.

### **3.7 Thermostatic Mixing Valve (TMV) Scald Prevention**

Malfunctions of thermostatic mixing valves (TMV) in health care facilities have resulted in serious scalding injury and death. These malfunctions have resulted from inadequate system design, installation, commissioning, operation, maintenance and service, and site management. There are key documents which detail the correct system design, installation, commissioning, operation, maintenance, service and site management procedures, which must be followed in regard to TMV's and warm water systems (WWS). These documents include:

- The current TMV / WWS supplier's instructions
- The Code of Practice for Thermostatic Mixing Valves, 1990, (HOSPLAN) under review
- Relevant Australian Standards and in particular AS 4032 – Thermostatic Mixing Valves – materials, design and performance.

### **3.8 Management Planning**

Health care facilities should develop and implement warm water system management plans that consider, but not be limited to, the following matters:

- Site auditing and management
- Flushing program for unused outlets
- Elimination of dead legs
- Contingency planning for Legionella detections, including patient management, treatment of the system, internal communications and external communications
- Localised and system disinfection
- Maintenance records
- Temperature safety checks

- Scalds prevention
- Scalds incident management.

## **4 LEGIONELLA CONTROL FOR WARM WATER SYSTEMS**

### **4.1 Definition**

The definitions of hot water system and warm water system in Section 2.2 apply to Part 4.

### **4.2 Notification to the local government authority (local council)**

Clause 11 of the *Public Health Regulation 2012* requires the owner or occupier of a health care facility where a warm water system is installed to notify the environmental health section of the local government authority (local council) using the approved form and to pay any registration fee. Local government authorities have been advised that where more than one TMV is installed in a health care facility, then collectively the TMV's constitute one system for the purposes of registration and the charging of any fee.

### **4.3 Approval of Warm Water Systems**

Clause 6(4) of the *Public Health Regulation 2012* requires that “a warm water system must not be installed in a hospital unless it is of a kind approved by the Director-General”. There are two types of warm water systems:

- Thermostatic mixing valves (TMV) or
- Specifically designed water heating systems which do not blend hot and cold water to a predetermined temperature but heat water directly to the desired temperature.

NSW Health therefore has two (2) approval specifications that detail the requirements for **equipment suppliers** to obtain approval. These approval specifications detail the operational testing for hospital premises as well as the vital aspects of industry best practice for the supply, installation, commissioning, maintenance and servicing of the two types of warm water systems.

The specifications are:

- Approval Specification for Operational Testing of Thermostatic Mixing Valves for use in non-domestic buildings in NSW  
[http://www.health.nsw.gov.au/pubs/2004/pdf/approval\\_spec\\_part\\_a.pdf](http://www.health.nsw.gov.au/pubs/2004/pdf/approval_spec_part_a.pdf) and
- Approval Specification for Operational Testing of Warm Water Generating Systems not incorporating a Thermostatic Mixing Valve  
[http://www.health.nsw.gov.au/pubs/2004/pdf/approval\\_spec\\_part\\_b.pdf](http://www.health.nsw.gov.au/pubs/2004/pdf/approval_spec_part_b.pdf).

In addition to meeting the requirements of Clause 6(4) of the *Public Health Regulation 2012* warm water systems and thermostatic mixing valves must also obtain WaterMark Certification. Those that do not maintain current WaterMark

Certification will be deleted from the NSW Health listing of approved warm water systems. Approved warm water systems are listed on the NSW Health website at: <http://www.health.nsw.gov.au/environment/legionellacontrol/>.

## **4.4 Disinfection Requirements for Warm Water Systems**

### **4.4.1 Performance Based Microbiological Standard**

All new and existing hospitals must ensure that water sampled from outlet fixtures used for personal ablution purposes **contains less than 10 *Legionella* colony forming units (cfu) per millilitre**. Sampling must be conducted in accordance with sub-Section 4.4.4.

### **4.4.2 Disinfection requirements**

Where the water sampled at the fixture outlet does not meet the above microbiological standard a process of disinfection to control microbial growth must be incorporated into the warm water system. The onus for the correct operation, maintenance and service, and thus compliance with the above performance-based standard, rests with the hospital manager or person in charge of the facility.

### **4.4.3 New premises**

During the planning and development stage, provision shall be made for the possible installation of a process of disinfection. During construction, and prior to occupation, owners of new premises shall develop a clear understanding of the water quality being supplied to the site. This should allow the necessary decision to be made whether disinfection of the water for ablution purposes is required.

### **4.4.4 Microbiological Sampling of Warm Water Systems**

Microbiological sampling must be carried out as follows:

- Sampling must be representative of the water supplied to patients
- Samples must be collected from a shower rose, hand basin or bath fixture using an aseptic technique
- To collect the sample
- Run the water at a moderate flow until it starts to warm (for a minimum of 30 seconds)
- Reduce the water flow to avoid any splashing
- Collect the sample.

The advice of the Public Health Unit may be sought regarding the correct sampling techniques and protocols. As part of the overall strategy to manage the potential health risk from the growth of *Legionella* bacteria, it is a requirement for health care facilities to comply with the *NSW Code of Practice for the Control of Legionnaires' Disease* which has been adopted as policy for implementation in all health care

facilities in NSW. A copy of the Code of Practice can be downloaded from the NSW Health website at <http://www.health.nsw.gov.au/environment/legionellacontrol/>

#### **4.4.4.1 Frequency**

The frequency of monitoring should be determined by the record of performance of individual systems. It will be necessary to develop monitoring programs based on the performance of the system. Priority should be given to the performance of systems where performance is unknown and lack water disinfection. Where no data on the performance of a system is available it would be appropriate to initially determine the necessity to monitor the system based on health risk. Details can be found in sub-Section 4.4.4.2. System monitoring is necessary and the system should be sampled at least twice per year as a minimum until the *Legionella* profile has been determined. Monitoring frequency may then be reduced to once per year once the profile has been found to be satisfactory. The advice of the Public Health Unit could be sought regarding the necessity to monitor a particular system and its sampling frequency. All hospitals are to have appropriate monitoring programs in place which satisfy Section 19 of the *NSW Code of Practice for the Control of Legionnaires' Disease*. See sub-Section 4.4.4.3.

#### **4.4.4.2 Guidance on Assessing Risk of Warm Water System**

The risk a warm water system poses in terms of hospital acquired Legionnaire's disease depends on multiple factors. These include both patient factors and design features of the system.

##### *(i) Patient factors*

- (a) Recognised patient risk factors include chronic lung disease and immunosuppression. Patients are also at risk after surgery with the single most important factor thought to be receipt of an organ transplant, particularly heart transplants. Other factors implicated include receiving respiratory therapy, receiving corticosteroids, diabetes mellitus, cigarette smoking and cancer. The most frequently described routes of transmission include inhalation of contaminated aerosol and micro aspiration.
- (b) Although transplant patients are potentially at highest risk, surveillance programs monitoring locations of hospital acquired *Legionella* infection by ward type have found that most cases occur outside these wards. For example, in a Swedish hospital 31 cases were identified over a 14 month period with patients from surgical wards, internal medicine or geriatric wards and from psychiatric and physiotherapy units.
- (c) Consequently any hospital screening program should focus preferentially on systems that supply water to areas that care for:
  - Immunocompromised patients
  - Patients with chronic respiratory disease or
  - High risk surgical patients undergoing general anaesthesia.

(d) The absolute number of patients served by a particular system should also be considered.

*(ii) System Design Features*

(a) The main predictor of whether hospital acquired Legionnaires' disease occurs or not is the proportion of systems colonised with *Legionella* rather than the level of microorganism count found in the particular system. Factors that most enhance colonisation of water environments include the water temperature, obstruction and stagnation of the flow of water, biofilm formation in plumbing systems and the presence of other microorganisms that support the growth of *Legionella* species. The risk of colonisation is reduced by appropriate disinfection.

(b) In practice any environmental monitoring program should preferentially target systems with the following features:

- Those likely to have stagnant water present e.g. not used regularly each week, or the presence of significant "dead legs"
- Older and more complex systems with lengthy network of pipes and heaters e.g. systems where outlets are a long way from heating or disinfection points
- Absence of a disinfection system
- Prior known poor performance e.g. inadequate temperature, previous growth detected.

#### **4.4.4.3 Sampling Program Protocol**

*(i) Monitoring Program:*

Each health care facility should have a monitoring program that bases its sampling protocol on risk. The results of the sampling program should be fed back into the program:

- To assess overall risk in the facility
- To inform management options to reduce risk and
- To refine the monitoring program.

To effectively achieve this involvement of infection control, engineering and clinical expertise is necessary.

*(ii) Number of tests for a facility:*

It is not possible to prescribe exact numbers of tests that a particular facility should perform due to the broad spectrum of patient mix and system design features across hospital facilities in NSW. However, it has been proposed that environmental sampling that could constitute a satisfactory minimum primary prevention programme would consist of:

- For up to a 500 bed hospital a minimum of 10 distal sites
- For hospitals greater than 500 beds an additional 2 distal sites per extra 100 beds



- Testing should be at least twice per year as a minimum until the Legionella profile has been determined
- In a transplant centre quarterly sampling is required as a minimum.

*(iii) Sampling Sites:*

Sites should be preferentially chosen based upon level of risk. It is important that a comprehensive profile of a facility is built up over time and that sampling protocols allow a rotation of sites sampled.

*(iv) Response to Colonisation:*

It is important that each hospital facility has a documented response protocol to the detection of *Legionella* from warm water systems.

- Appropriate decontamination procedures should be clearly documented in the protocol and instituted when contamination of a warm water system is detected
- The response to a significant colonisation of the hospitals detection of contamination of warm water systems may include the commencement of an active surveillance program for clinical illness and /or changes to clinical treatment protocols. The decision to adopt this strategy should be made at a hospital facility level on a case-by-case basis.

## **5 MAINTENANCE REQUIREMENTS OF WARM WATER SYSTEMS**

### **5.1 General requirements**

Neglect, or any inadequate system design, installation, commissioning, operation, maintenance/service and site management of any warm water system and hot water system could lead to unsafe conditions being created for any patients during an ablutionary procedure, possibly resulting in scalding and death.

The *Public Health Act 2010*, the *Public Health Regulation 2012*, and *AS 4032 – Thermostatic Mixing Valves – materials, design and performance*, and any current manufacturer's or supplier's published instructions regarding the system design, installation, commissioning, operation, maintenance, service and site management must be adhered to.

Commissioning and maintenance report forms must be used when commissioning a new TMV or when maintenance work is conducted on an existing TMV. The form is attached as Section 7.

Maintenance staff must take notice of manufacturer's instructions regarding periodic calibration of thermometers and the design service life for thermostats.

### **5.2 Safety Issues Concerning Warm Water Systems and Thermostatic Mixing Valves**

Site or facility management must ensure that:

- A monthly safety temperature check of warm water from at least one abluion outlet fixture (preferably a hand basin) running at 6 to 10 litres per minute, served by each warm water system, must be instituted by site management to monitor the temperature control performance of the warm water system. (Note that a flow rate of 6 to 10 litres per minute is equivalent to a time of between 12 to 20 seconds to fill a 2 litre water jug)
- The warm water system must be immediately isolated and not used where any variation of 2°C or more (after a 20 second stabilisation period) from the manufacturer's specified operating temperature range for the particular patient classification is detected. The warm water system must then not be used until the performance of the warm water system can be checked, adjusted or repaired as necessary by maintenance staff
- Details of any repairs, parts, replacement or any other work carried out on the warm water system must be detailed in a service report which is to be supplied by maintenance and service personnel to site management
- The report must explain the reasons for the temperature variation
- Before the warm water system is returned to service, the maintenance and service report must be referred to site management to acknowledge that the warm water system is reported by the maintenance staff to be operating satisfactorily and performing within the required temperature range
- The use of flow restrictions or outlet fixtures which are rated at flows below the minimum flow rate of the TMV shall be avoided in preference to outlet fixtures which operate comfortably at flow rates in excess of the TMV minimum flow rate
- In order to maintain a stable and acceptable temperature for mixed warm water from any TMV, the flow rate of water from the TMV should not fall below the manufacturer's recommended minimum flow rate for that TMV
- The flow rate from the outlet fixture is confirmed as being adequate before checking the warm water temperature and before the addition of any cold water from a separate source.

### 5.3 Competency of Commissioning and Servicing / Maintenance Personnel

Persons commissioning and servicing warm water systems must be licensed as a plumber by the NSW Office of Fair Trading, must be technically trained by a Registered Training Organisation (RTO) and be experienced in TMV maintenance. Personnel without such qualifications and experience may only be utilised when under the direct supervision of a qualified and experienced plumber. Personnel must be familiar with the manufacturer's and supplier's latest (current) published installation, commissioning, operation, service and site maintenance instructions relevant to the particular model of equipment installed.



## **5.4 Systems in isolation / infectious disease wards**

Contractors and maintenance staff must consult with the relevant site management of the hospital facility regarding any special personal safety procedures that may be necessary for them when servicing systems in these locations.

## **6 THERMOSTATIC MIXING VALVE COMMISSIONING AND/OR MAINTENANCE REPORT**

The form may be obtained from the NSW Office of Water by calling 1800 353 104. A template is available at Appendix E in AS4032.3-2004 – Water Supply – Valves for the control of heated water supply temperatures Part 3: Requirements for field - testing, maintenance or replacement of thermostatic mixing valves, tempering valves and end-of-line temperature control devices.

The form is located at Attachment 1 and on the NSW Health website at:  
<http://www.health.nsw.gov.au/environment/legionellacontrol/Documents/tmv-comm-maintenance-report.pdf>

## **7 FURTHER INFORMATION**

Further information and interpretation may be obtained from:

- The NSW Department of Health Legionella and Legionnaires Disease website at <http://www.health.nsw.gov.au/environment/legionellacontrol>
- The NSW Code of Practice for Control of Legionnaires' Disease at <http://www.health.nsw.gov.au/environment/Pages/legionnaire-disease.aspx>
- An environmental health officer at the local Council or Public Health Unit; contact details for Public Health Units are at <http://www.health.nsw.gov.au/Infectious/Pages/phus.aspx>
- Public Health Act 2010
- Public Health Regulation 2012
- Code of Practice for Thermostatic Mixing Valves, 1990 (HOSPLAN) – under review
- AS 2437–1987 Flusher/sanitizers for bed pans and urine bottles
- AS 2945 (Int) – 2002 Batch-type washer/disinfectors for health care
- AS/NZS 3500:2013 Plumbing and Drainage
- AS/NZS 3666.1 and .2, 2011, Air – handling and water systems of buildings,
- AS/NZS 3718:2005 Water supply – Tap ware
- AS 4032.1, .2:2005 and .3:2004 – Water Supply – Valves for the control of heated water supply temperatures

- AS/NZS 4146:2000 Laundry practice

## **8 LIST OF ATTACHMENTS**

1. Thermostatic Mixing Valve Commissioning / or Maintenance Report

**Attachment 1: Thermostatic Mixing Valve Commissioning / or Maintenance Report**

**NOTE:**

1. In all cases the Licensee is to submit this report within two working days after commissioning and/or servicing the valve.
2. Use a separate form for each valve.
3. The original of the report is to be given to the owner/occupier and retained on site for a minimum of 7 years.
4. All details are to be filled in. Incomplete reports will not be accepted.

Print only or  in box to indicate choice.

Name of Establishment: \_\_\_\_\_

Address of Establishment: \_\_\_\_\_

Phone No: \_\_\_\_\_ Contact Person: \_\_\_\_\_ Date: ...../...../.....

Work Order No: \_\_\_\_\_ Make and Model of Hot Water Unit: \_\_\_\_\_

Make of Mixing Valve: \_\_\_\_\_ Model No: \_\_\_\_\_ Size: \_\_\_\_\_

Valve Identification No: \_\_\_\_\_ Total No: of Mixing Valves on Site/Building: \_\_\_\_\_

Valve Location/Building: \_\_\_\_\_

Area Served by the Valve: \_\_\_\_\_

No: of outlets served by the valve:

Baths \_\_\_\_\_ Basins \_\_\_\_\_ Showers \_\_\_\_\_ Sinks \_\_\_\_\_ Others \_\_\_\_\_

**Mixing Valve Installed to the requirements of:**

- |   |                              |                             |
|---|------------------------------|-----------------------------|
| The HOSPLAN Code of Practice for Thermostatic Mixing Valves in Health Care Facilities | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| The valve manufacturer/supplier requirements  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| AS/NZS Plumbing and Drainage Heated Water Services AS/NZS 3500.4:2003                 | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

If NO, give details and corrective action taken: \_\_\_\_\_

\_\_\_\_\_ Advised Owner/Administration Yes

**Details of work carried out –**

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Serviced                                      | <input type="checkbox"/> Commissioned                         | <input type="checkbox"/> Dismantle       |
| <input type="checkbox"/> Visually inspected and clean valve components | <input type="checkbox"/> Checked function of non return valve |  |
| <input type="checkbox"/> Replaced O rings and lubricate                | <input type="checkbox"/> Reassemble                           | <input type="checkbox"/> Set Temperature |
| <input type="checkbox"/> Thermal Shutdown Test Passed                  |   |  |

List of items replaced and part numbers during this visit.

Service Kit No: \_\_\_\_\_

Other Parts: \_\_\_\_\_

Temperature range of warm water at outlet: Neonatal and Children 38 - 40.5°C , Adult 40.5 - 45.0°C , Other \_\_\_\_\_ °C

Temperature range of warm water at outlet: Non-public health care facilities 40.5 - 45.0°C

Date of this service/commissioning: ...../...../.....

Date next service due: ...../...../.....

Previous service carried out by: \_\_\_\_\_

Date of previous service: ...../...../.....

Valve installed by: \_\_\_\_\_

Date of installation: ...../...../.....

It is hereby certified that all the work has been carried out by the undersigned in accordance with the requirements of the HOSPLAN Codes of Practice for Thermostatic Mixing Valves and AS 4032.

Contractor's Name (Print) \_\_\_\_\_ Contractor's Licence No \_\_\_\_\_

Contractor's Signature \_\_\_\_\_ Date ...../...../..... Phone No \_\_\_\_\_

Testing Thermometer Details: Make \_\_\_\_\_ Serial No. \_\_\_\_\_ Date of last calibration ...../...../.....

Owner/Agent Signature \_\_\_\_\_ Date ...../...../.....

**NOTE: A copy of this report is to be retained at the site for any inspection by authorised persons.**