Plumbing Regulation Advisory Notes

Building Standards and Regulation

Department of Justice
30 Gordons Hill Road or PO Box 56 Rosny Park 7018
Web: www.wst.tas.gov.au/building
Email: wstinfo@justice.tas.gov.au

Issued: November 2007

Plumbing Regulation Advisory Notes are issued to assist in the interpretation of Tasmanian plumbing legislation and to provide advice on technical issues within the plumbing industry.

Hot water plumbing—Installation of tempering valves

Purpose

The purpose of this advisory note is to address the two seemingly conflicting safety issues around heated water temperature — the risk of hot water scalding, and the risk of incubating bacteria in water that is not hot enough to kill them. Both risks are potentially life threatening, and both can be easily addressed: set the water storage heater's thermostat to at least 60° C for sanitizing the water and install a tempering valve set to no more than 50°C to avoid scalding.

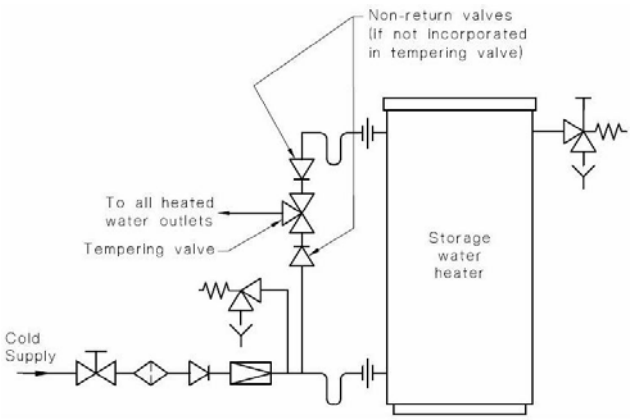
Plumbing Code requirements for installation of tempering valves

The Tasmanian Plumbing Code adopts the Plumbing Code of Australia (PCA) as the standard for plumbing work in Tasmania. The PCA requires heated water to be stored and delivered under conditions which avoid the likelihood of growth of Legionella bacteria. The PCA also requires heated water supplied by a new heated water service to be delivered to fixtures and appliances used primarily for personal hygiene at a temperature which reduces the likelihood of scalding. Heated water **stored** in a hot water storage heater kept at 60°C or greater will prevent the likelihood of Legionella bacteria growth and the installation of a tempering valve or thermostatic mixing valve will reduce the likelihood of scalding.

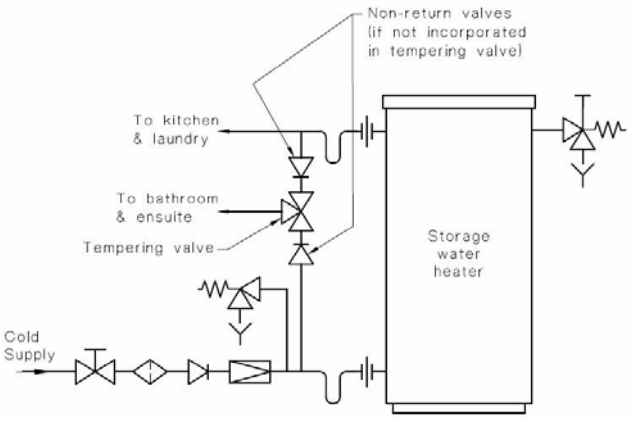
Installation issues

Some plumbers, in an attempt to meet the water temperature performance requirements of the Code, are installing heated water storage units that are factory set to 50°C. As an alternative plumbers are installing tempering valves at the outlet of the hot water storage heater in a way that controls the temperature to an entire house, and not just to fixtures used for personal hygiene. The temperature limit varies according to building use and location of hot water outlets. Restricting the delivery temperature to kitchens and laundries is optional and not required by regulation.

The following images show typical valve arrangements and location of tempering valves at or away from the hot water storage heater. The diagrams also outline two methods of positioning the installation of the tempering valve so that only water to bathroom fixtures is tempered.



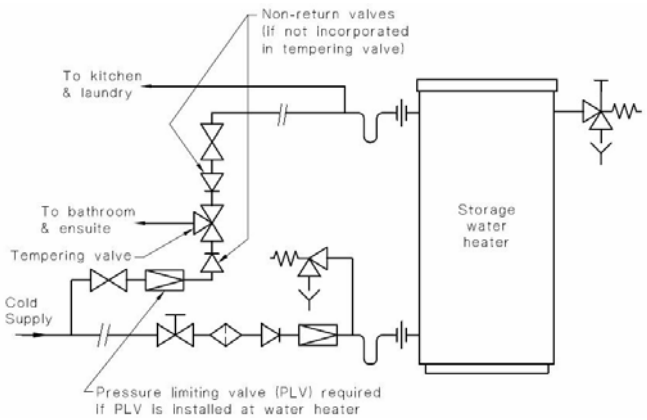
STORAGE WATER HEATER — ONE ZONE



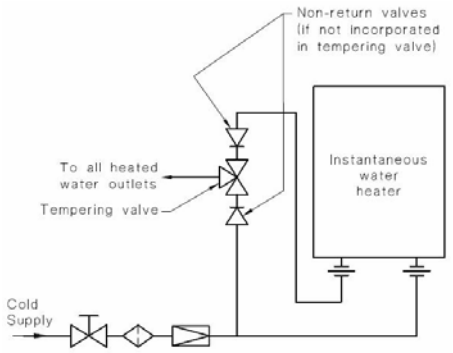
STORAGE WATER HEATER — TWO ZONES

To keep Local Government, Statutory Authorities, Engineers, Designers and the Plumbing Industry informed on developments, and to assist in the clarification and interpretation of parts of the Act, the Plumbing Regulations, and the Tasmanian Plumbing Code, Plumbing Regulation Advisory Notes will be issued as and when necessary.

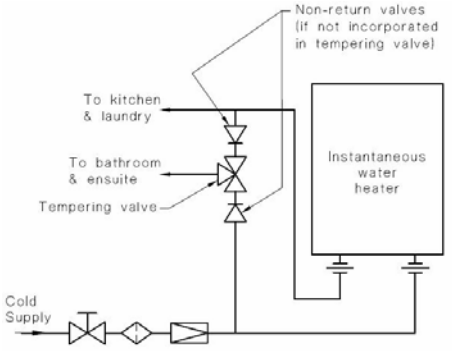
(Continued from page 1)



STORAGE WATER HEATER — REMOTE



INSTANTANEOUS WATER HEATER — ONE ZONE



INSTANTANEOUS WATER HEATER — TWO ZONES

Installation and maintenance considerations

- Do not install a tempering valve directly onto a hot water cylinder.
- A separate *un-tempered* hot water line to the kitchen and laundry is optional.
- It is recommended that the valve be installed as close to the hot water source as possible for optimum performance.
- It is recommended the tempering valve be checked annually by a licenced plumber to ensure correct functionality of valve.
- Where the water supply is of poor quality or any other supply variations are likely, it maybe necessary to have the valve checked at more frequent intervals.

When should tempering valves be installed?

The requirement to limit certain hot water temperatures only applies to all new hot water installations. A new hot water installation is defined as either a new hot water heater and a new hot water reticulation system or a new hot water reticulation system. Therefore, the requirements do apply to all new houses and where existing rough-ins are being reconfigured, for example a hot and cold water supply is being renewed in a bathroom renovation or addition. These requirements do not apply if you are only changing over a hot water heater or replacing or repairing part of the hot water reticulation system.

Legal risks

The other issue to keep in mind is the plumber's legal obligations regarding their "duty of care" to their clients. Recent litigation has placed the onus on plumbers to ensure that hot water installations are safe in domestic situations.

This means that because of their professional expertise and qualifications plumbers have the responsibility to ensure that any hot water installation they have worked on is "safe" and adequate and complies with the Tasmanian Plumbing Code. This duty of care includes an obligation to advise clients of the risk of scalding and possible preventative solutions.

Want more information? Call Workplace Standards Tasmania Helpline:

Phone: 03 6233 7657 (Outside Tasmania)

Local rate: 1300 366 322 (Inside Tasmania)

Fax: 03 6233 8338

Email: wstinfo@justice.tas.gov.au

Web: www.wst.tas.gov.au/building