

## Temperature Control for Hot Water Delivery Plumbing Solutions – edition 9

This edition of Plumbing Solutions sets out the requirements for plumbing installers to provide customers protection from the risk of scalding from excessive water temperatures as specified in AS/NZS 3500.4: 2003 Heated Water services and the South Australian variations.

National Plumbing and Drainage Standard AS/NZS 3500.4: 2003 states - all new heated water installations shall, at the outlet of all sanitary fixtures used primarily for personal hygiene purposes, deliver heated water not exceeding:

- a) 45°C for early childhood centres, primary and secondary schools and nursing homes or similar facilities for young, aged, sick or people with disabilities; and
- b) 50°C in all other buildings

### Acceptable solutions for control of delivery temperature

The following shall apply:

- a) The installation is deemed to comply if all sanitary fixtures used primarily for personal hygiene purposes are supplied from a thermostatic mixing valve or a tempering valve adjusted to the appropriate temperature
- b) Water heaters factory set at 50°C must have any adjustment mechanisms permanently disabled and must have the following additional warning, clear, permanent, readily accessible and easy to read:  
THIS APPLIANCE DELIVERS WATER NOT EXCEEDING 50°C IN ACCORDANCE WITH AS 3498.

### South Australian variations to AS/NZS3500

#### Delivery temperature – alterations or extensions to existing buildings:

Where an existing building is altered or extended in such a way that sanitary fixtures used primarily for hygiene purposes are installed in a location where, before the alteration or extension, no such fixture existed, the delivery temperature at the fixture shall not exceed:

- a) 45°C for early childhood centres, primary and secondary schools and nursing homes or similar facilities for young, aged, sick or people with disabilities; and
- b) 50°C in all other buildings.

**Advisory note:** A duty of care should be exercised by installers to explain to clients the merits of temperature control for hot water delivered to existing sanitary fixtures used primarily for hygiene purposes.

#### Existing temperature limitation devices:

Existing devices, inline or end of line, for limiting the water delivery temperature at any fixture shall not be removed, or otherwise rendered inoperative or ineffectual, when an existing water heater, of any type, that serves a building, is repositioned or replaced.

#### Replacement water heaters of servicing of existing water heaters:

Where a water heater is replaced, there is no mandatory requirement to install a temperature limitation device to control the temperature of water delivered to sanitary fixtures used primarily for hygiene purposes unless the replacement water heater is of a solar type, the heating source is uncontrolled or such a device was in place prior to the installation of the replacement water heater.

Information sourced from the Plumbing and Drainage Standard AS/NZS3500

## Tempering valves

### Commissioning

- Tempering valves must be commissioned according to the manufacturer's instructions
- Ensure that the water heater is on and delivering water greater than 60°C
- Run the tempered water tap nearest the water heater or tempering valve for at least one minute to allow temperature to stabilize
- Temperature must be checked with a thermometer and the tempering valve adjusted and set accordingly to the manufacturer's instructions.

### Maintenance

- The tempering valve must be accessible for service and maintenance
- The tempering valve should be checked at least annually and more frequently if water quality is poor
- The temperature check should be carried out on the tempered water tap nearest the water heater.
- Strainers should be thoroughly cleaned
- If the valve fails it must be replaced.

The following table shows how long for skin to receive a major scald burn from water at a range of temperatures.

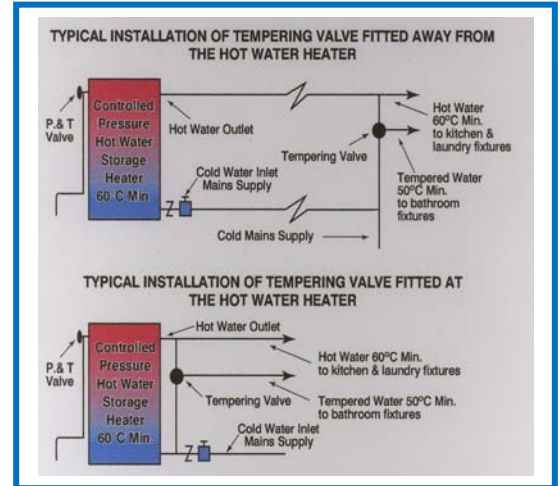
Water temperature	Major burn
49°C	5 minutes
52°C	1.5 – 2 minutes
54°C	30 seconds
57°C	10 seconds
60°C	less than 5 seconds
63°C	less than 3 seconds
66°C	1.5 seconds
68°C	1 second

If you have any questions about temperature control for hot water delivery or the AS/NZS3500 Plumbing and Drainage Standard, please contact:

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Alternatively, if you would like additional copies of this or other issues of Plumbing Solutions, please contact Brenton Jenner on (08) 7424 1360 or email [plumbooking@sawater.com.au](mailto:plumbooking@sawater.com.au)

We welcome your feedback. If you have any comments about Plumbing Solutions, or would like to suggest a topic for a future edition please send us an email at [plumbooking@sawater.com.au](mailto:plumbooking@sawater.com.au).



**Advisory note:** Supply of tempered water to kitchen and laundry outlets is optional as most consumers prefer to receive water at least 60°C from these fixtures.

