BUILDING PERFORMANCE

Prevent scalding from tap water

Information about hot water temperatures in taps, lowering the water temperature while balancing legionella risks and complying with Building Code requirements.

This information was confirmed as current in February 2016. It originally appeared in Codewords newsletters prior to January 2014.

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Of interest to Master Plumbers, Gasfitters and Drainlayers NZ, Homeowners, Building owners

Children and elderly people are at most risk

Children often receive serious scalds because they have more sensitive skin than adults and burn more quickly.

Elderly people can be vulnerable due to disabilities or slow reaction times.

For example:

- a child is left in a bath with the hot tap running, while the parent or caregiver is distracted by the telephone
- a child turns on the hot tap, falls into the bath, and can't get out
- an elderly person falls and injures themselves when showering, accidentally adjusting the water to the hottest setting and unable to get out of the hot shower water.

Lowering the hot water temperature

Hot water in residential housing is required, when using Acceptable Solution G12/AS1, to be no hotter than 55ºC when it comes out of the tap.

This is because it only takes five seconds for 60ºC water to burn human skin. But it's much slower at 53ºC, when it takes a full minute to cause first degree burns.

One common practice to reduce the chance of scalding is installing a tempering valve on the hot water pipe from the storage water heater. This mixes enough cold water with the hot water to keep it at a temperature which reduces the risk of scalding.

Balancing the scalding risk and the Legionella risk

Water that's too hot creates the risk of scalding. But water that's not hot enough creates the risk of harmful Legionella bacteria growing in storage water heaters.

The solution to this problem is to store hot water at a minimum temperature of 60ºC, and deliver it to baths, showers, basins and bidets at a temperature no greater than 55ºC. Installing a tempering valve is one way of achieving this.

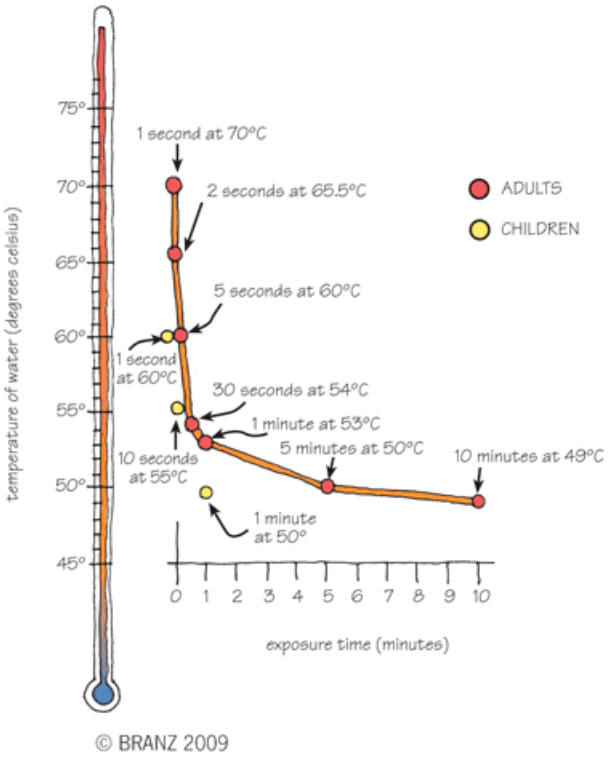
How to comply with Building Code requirements

You can comply with the Building Code clause G12 Water Supplies by using either of the following:

Acceptable Solution G12/AS1 (https://www.building.govt.nz/building-code-compliance/g-services-and-facilities/g12-water-supplies/acceptable-solutions-and-verification-methods/)- see section 6.14

Verification Method G12/VM1 that references the Standard AS/NZS 3500.4 Heated water services. You can buy AS/NZS 3500.4 from the Standards New Zealand website. (http://shop.standards.co.nz/catalog/3500.4%3A2015%28AS%7CNZS%29/view)

Length of exposure and water temperature at which full thickness skin scalds can occur.



All guidance related to G12 Water supplies (https://www.building.govt.nz/building-code-compliance/g-services-and-facilities/g12-water-supplies/)