



## Hot Water Temperatures in Adult Family Homes

Department of Health Services / Division of Quality Assurance

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Wisconsin Administrative Code § DHS 88.10(3)(L) states that persons residing in adult family homes have the right to:

“...a safe environment in which to live. The adult family home shall safeguard residents who cannot fully guard themselves from environmental hazards to which they are likely to be exposed, including conditions which would be hazardous to anyone and conditions which would be or are hazardous to a particular resident because of the resident’s condition or handicap.”

Exposure to hot water is a potential environmental danger for residents. Elderly residents and residents with mental and physical disabilities may have neurological conditions that prevent instant recoil from hot water. Because these individuals do not instantly react to dangerous temperature levels, they are at particular risk for injury. Hot water can cause scalding; e.g., second and third degree burns in which the skin blisters and swells. In such instances, skin does not return to normal and forms scar tissue upon healing. These burns may lead to permanent disability.

Second and third degree hot water burns can occur at the following rates at the following temperatures:

110° F	13 minutes
120° F	10 minutes
127° F	1 minute
130° F	30 seconds
140° F	6 seconds
158° F	1 second

To avoid injury, it is necessary to check the temperature of hot water at sinks, tubs, and showers prior to resident use. The temperature should be adjusted according to the types of residents served and the degree of independence they exercise when using sinks, showers, and tubs. We recommend a temperature of 110 to 115 degrees F. Licensing specialists who find temperatures above this range may issue a citation at Wis. Admin. Code § DHS 88.10(3)(L) for creating an environment that is not safe for residents.

Compliance with the requirements at Wis. Admin. Code § DHS 88.10(3)(L) may be obtained and maintained by:

- Turning down the temperature on the water heater and monitoring the temperature at the faucets until a temperature between 110 degrees F and 115 degrees F is obtained. The disadvantage of this option is that a water temperature of 140 degrees F **at the hot water heater** is recommended to mitigate Legionella bacteria within the water system.
- Installing a thermostatic mixing valve on the cold and hot water lines that lead from the water heater to the fixtures. A thermostatic mixing valve tempers the water such that water temperature will not exceed the temperature at which the thermostat is set. The mixing valve will control the water temperature at sinks, tubs, and showers served by the water line.

Because a thermostatic valve will allow hot or cold water to continue flowing if it fails, adult family homes, in addition, may choose to install a “fail safe” valve between the mixing valve and the faucets to which the water line leads. Generally, these are solenoid-actuated valves that shut down the hot water supply to the shower or tub (or sink) if the water exceeds 115 degrees. Although these valves are generally quite expensive, they are the only way to guarantee that unsafe water will not reach any of the faucets served by the water line. However, neither state code at DHS nor the state plumbing code requires this type of valve in a non-health care facility.

The size of the piping and the manufacturer model design both affect the cost of a thermostatic mixing valve and a fail-safe valve. If you purchase a thermostatic mixing valve or a thermostatic mixing valve and a fail-safe valve, you are encouraged to shop and compare prices; estimates may vary greatly.

Other ways that adult family homes may meet the requirement for safe water temperatures are listed below. Each of these options, if not used in combination with a mixing valve, requires the installation of devices at **each** individual sink, tub, and shower that is used by residents. Adult family homes fall under the scope of a Health Care and Related Facility per the definition found in Wis. Admin. Code § SPS 381.01(116).

- **Install a shower valve at each shower used by residents that complies with the intent of the “fail- safe” system.** These valves control water temperatures at the tub and shower and shut off the water if the temperature exceeds 115 degrees F. They do not control water temperatures at the sinks and there is not an approved counterpart for installation at the sink. Another method will be required to control water temperatures at the sinks. For more information, refer to Wis. Admin. Code, subchapter SPS A, Special Plumbing Installations, § 382.50(3)(b)5, Health care and related facilities, at:  
[https://docs.legis.wisconsin.gov/code/admin\\_code/sps/safety\\_and\\_buildings\\_and\\_environment/380\\_387/382](https://docs.legis.wisconsin.gov/code/admin_code/sps/safety_and_buildings_and_environment/380_387/382).
- **Install a faucet with an adjustable hot-limit safety stop at each sink used by residents.** Safety stops keep water at the faucets at a pre-set temperature by blending the amount of cold and hot water. However, if the water heater malfunctions and heats the water even higher than where it had been set, a safety stop will continue blending the same amount of hot and cold water. As a result, water temperatures at the faucet will be hotter than what is expected and burns could occur.
- **Install a temperature-actuated flow reduction valve at each sink, shower, and tub used by residents.** These valves reduce the flow of water to a trickle when the water temperature is approximately 115 degrees F or above. Although DQA cannot recommend brand names, such valves are available at local plumbing and hardware stores. Because we do not have experience with the reliability of these valves, we suggest that you monitor the temperature of water coming from faucets on which these devices have been installed.
- **Install a temperature gauge on the hot water side of a plumbing system** to assist daily staff recording and mitigate future scald hazards.
- **Periodic replacement of valves to avoid build-up of hard water particulate** to assist effective long-term safety

If you have questions, contact the Bureau of Assisted Living Regional Director for your county. Refer to [www.dhs.wisconsin.gov/dqa/bal-regionalmap.htm](http://www.dhs.wisconsin.gov/dqa/bal-regionalmap.htm) for contact information.