

Water Heater Alterations Individual Dwelling Units

2019 Title 24 Building Energy Efficiency Standards



Is Natural Gas Connected to Existing Water Heater's Location?	What type can I install prescriptively?	What can I install under the performance approach?
<p>YES</p>	<p>Natural gas or propane - tank or tankless (§150.2(b)1Hiiiia)</p>	<p>Any type that uses no more energy than the standard design (gas or propane tankless⁴; or heat pump⁵, if proposed is electric). Must use CEC-approved compliance software (§150.2(b)2B)</p>
	<p>Heat pump - (§150.2(b)1Hiiib; Climate Zones 1-15)¹</p>	
	<p>Heat pump - NEEA Tier 3 or higher (§150.2(b)1Hiiic; Climate Zones 1-15)²</p>	
<p>NO</p>	<p>Consumer Electric - tank or tankless (§150.2(b)1Hiiid)³</p>	

All existing accessible and newly installed piping must be insulated per §150.2(b)1Hi.

- 1 Storage tank cannot be outdoors, and must be on rigid, incompressible surface insulated to R-10 or higher. Must have a communications interface meeting §110.12(a) requirements.**
- 2 Storage tank cannot be outdoors.**
- 3 Per 10 CFR 430.2, “consumer electric water heater” includes electric storage water heaters with an input of 12 kilowatts or less; electric instantaneous water heaters with an input of 12 kilowatts or less; and heat pump type units, with a maximum current rating of 24 amperes, at a voltage no greater than 250 volts, which are designed to transfer thermal energy from one temperature level to a higher temperature level for the purpose of heating water, including all ancillary equipment such as fans, storage tanks, pumps, or controls necessary for the device to perform its function.**
- 4 Standard design is one gas or propane consumer tankless water heater per dwelling unit, with 200,000 Btu/h input, a high draw pattern, and Uniform Energy Factor (UEF) of 0.81 (2019 ACM Reference Manual, § 2.9.2).**
- 5 Standard design for an electric water heater is one heat pump water heater with a UEF of 2.0, installed indoors, with compact distribution credit and a drain water heat recovery system in Climate Zones 1 (exchanger efficiency of 0.42, serving all showers, unequal shower configuration) and 16 (exchanger efficiency of 0.65, serving all showers, equal shower configuration) (2019 ACM Reference Manual, § 2.9.2).**