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Water Heater Installations

February 2005 (Revised Dec. 2016)

Permit Requirements

When do I need a permit?

A water heater (plumbing) permit is always required for new and replacement water heater installations. This allows the Building Safety & Inspection field inspector to ensure safe operation and appropriate strapping.

During emergency situations when a water heater appliance has been installed without first obtaining a permit, it shall be obtained on the next work day following installation. A double fee permit penalty may otherwise be added for doing the work without a permit.

Bracing and Installation

Enforcement

As adopted by the City of Elk Grove, Chapter 5 of the 2016 California Plumbing Code (CPC) enforces the construction, location and installation of fuel burning water heaters.

Location

Water heater installations in bedrooms and bathrooms shall comply with one of the following:

1) Fuel-burning water heaters may be installed in a closet located in the bedroom or bathroom provided the closet is provided with a listed, gasketed door assembly and a listed self closing device. All combustion air for such installations shall be obtained from the outdoors. The closet shall be for the exclusive use of the water heater.
2) Water heater shall be of the direct vent type.

Protection

Bollards - When water heaters are located in the path of travel or subject to mechanical damage by vehicles, a suitable barrier shall be installed in front of it.

Strapping

In seismic design categories C,D,E and F water heaters shall be anchored or strapped to resist movement during an earthquake. Straps are to be installed at the upper and lower third (1/3) of the water heater (lower strap 4-in above controls). The straps shall be connected so that the fasteners and straps cannot dislodge or loosen. Refer to page 2 for sample illustrations.

When supported on the ground, water heaters can rest on level concrete or other approved base extending not less than 3-in above adjacent ground level.

Thermal Expansion

Any water system provided with a check valve, back flow preventer, or any other normally closed device that prevents dissipation of building pressure back into the water main shall be provided with an approved, listed, and adequately sized expansion tank to control thermal expansion.

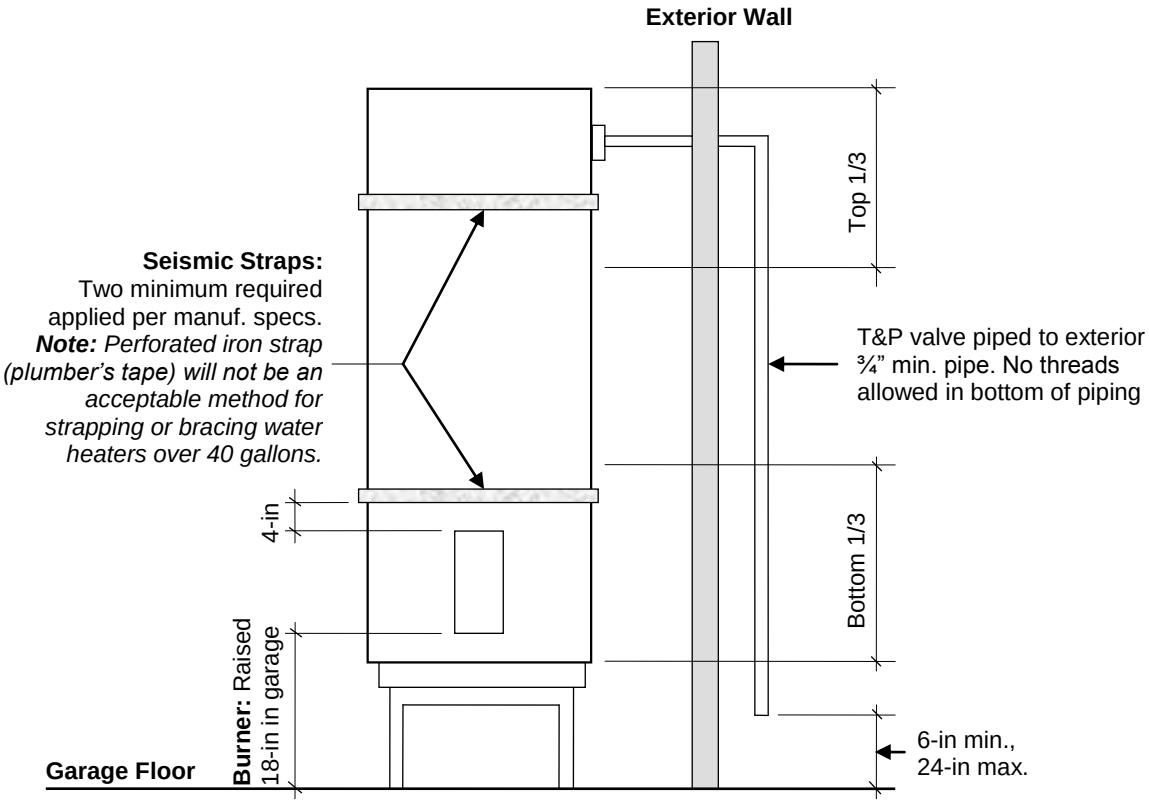
Capacity

The minimum capacity for water heaters shall be in accordance with the first hour rating as listed in the table below.

Table 501.1(1): Water Heater Minimum Capacity (2016 CPC)[1]

Number of Bathrooms	1 to 1.5			2 to 2.5				3 to 3.5			
Number of Bedrooms	1	2	3	2	3	4	5	3	4	5	6
First Hour Rating[2] (Gallons)	42	54	54	54	67	67	80	67	80	80	80

Notes:
[1]The first hour rating is found on the "Energy Guide" label.
[2]Non-storage and solar water heaters shall be sized to meet the appropriate first hour rating as shown in the table.



WATER HEATER – ELEVATION

COMBUSTION AIR (2016 CMC, Chapter 7)

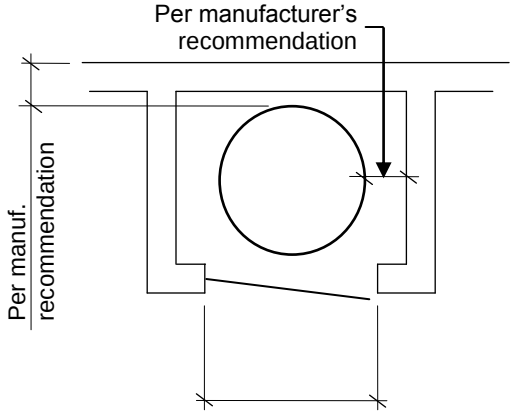
Inside Source

Ordinary Construction: Appliance in unconfined space may rely on infiltration alone. Unconfined space is >50 cu. ft./1000 Btu/hr. Appliance may draw air through minimum 100 sq. in. openings into unconfined space, one opening in upper 12-in, one in lower 12-in.

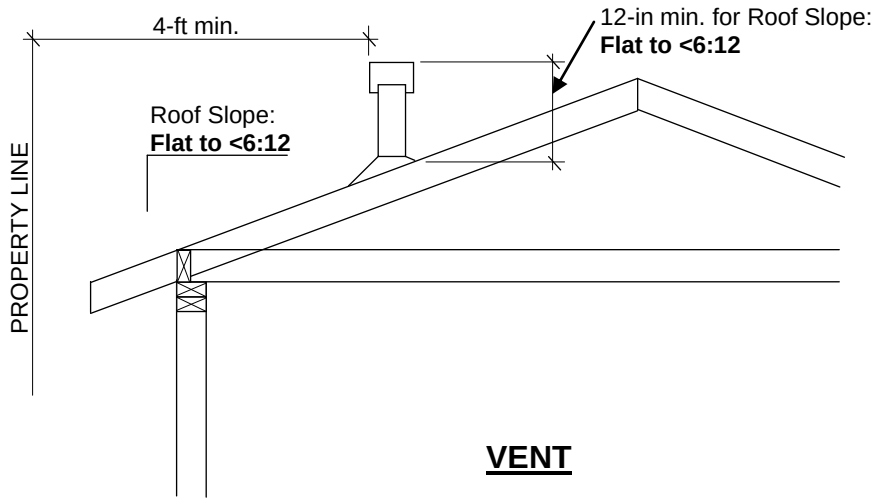
Outside Source

Unusually Tight Construction or Confined Space: Confined space is <50 cu. ft./1000 Btu/hr.

Refer to Table 7-1 for size of combustion air openings or ducts.



TOP VIEW



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