



# Water Heater Installations

February 2005 (Revised February 28, 2008)

## 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 2007 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 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.

### Capacity

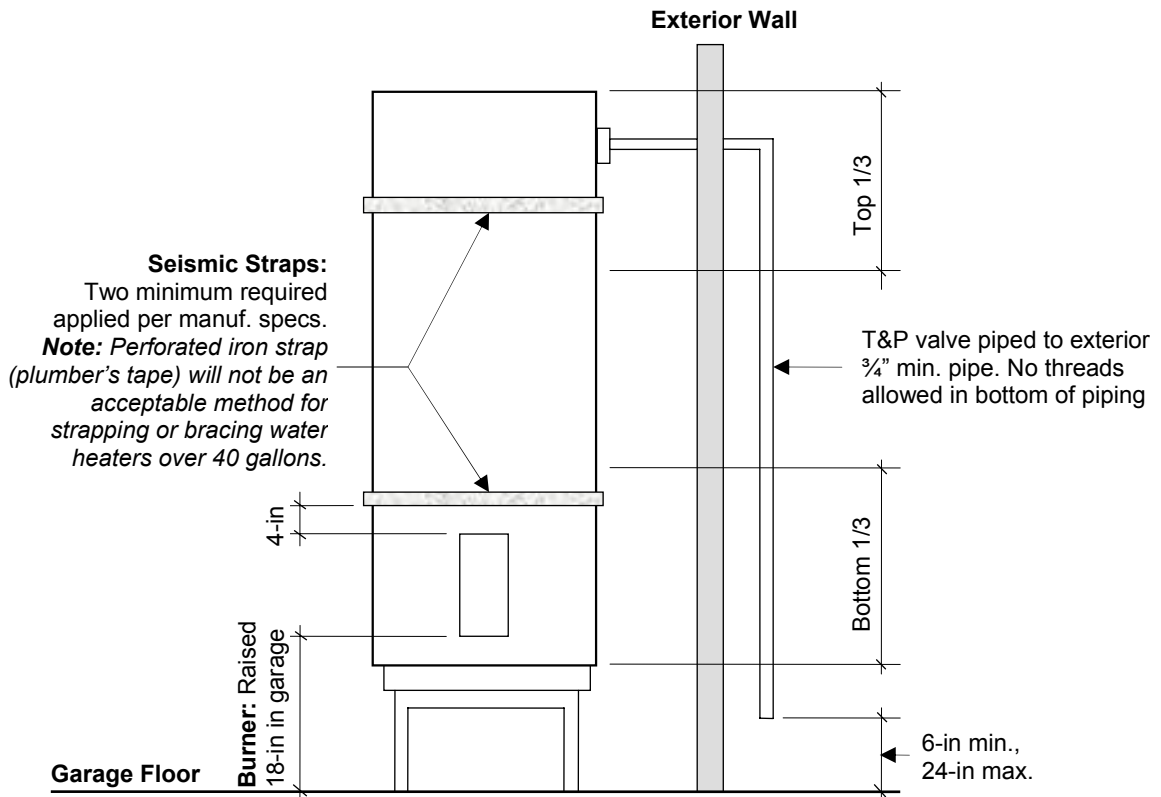
The minimum capacity for water heaters shall be in accordance with the first hour rating as listed in the table below.

Number of Bathrooms	1 to 1.5			2 to 2.5				3 to 3.5			
	1	2	3	2	3	4	5	3	4	5	6
<b>Number of Bedrooms</b>	1	2	3	2	3	4	5	3	4	5	6
<b>First Hour Rating<sup>2</sup> (Gallons)</b>	42	54	54	54	67	67	80	67	80	80	80

### Notes:

<sup>1</sup>The first hour rating is found on the "Energy Guide" label.

<sup>2</sup>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 (2007 CMC, Chapter 7)

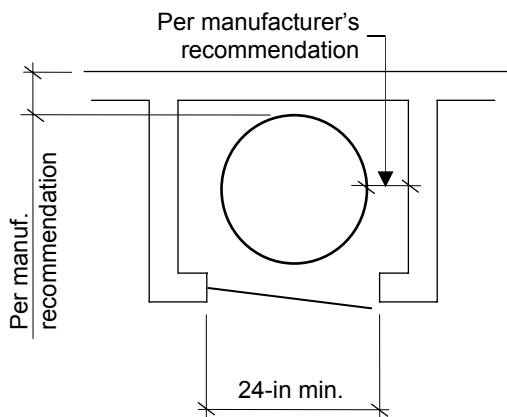
##### **Inside Source**

*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.

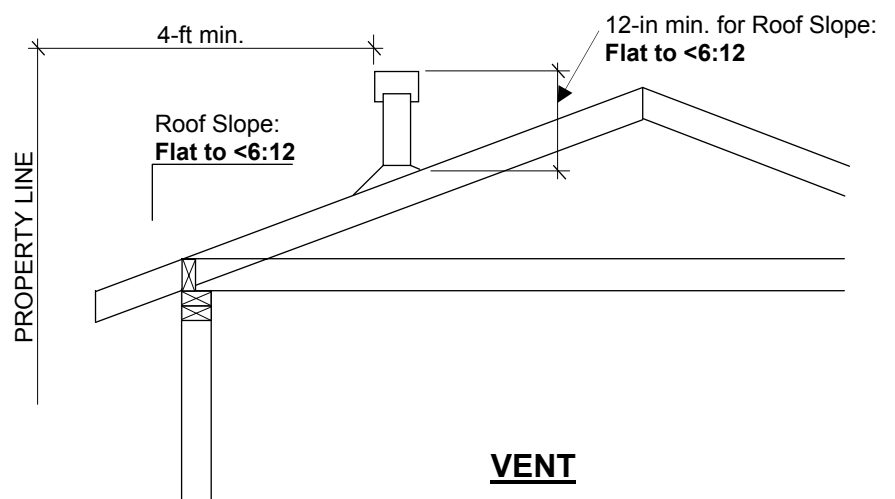
##### **Outside Source**

*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**



**VENT**