

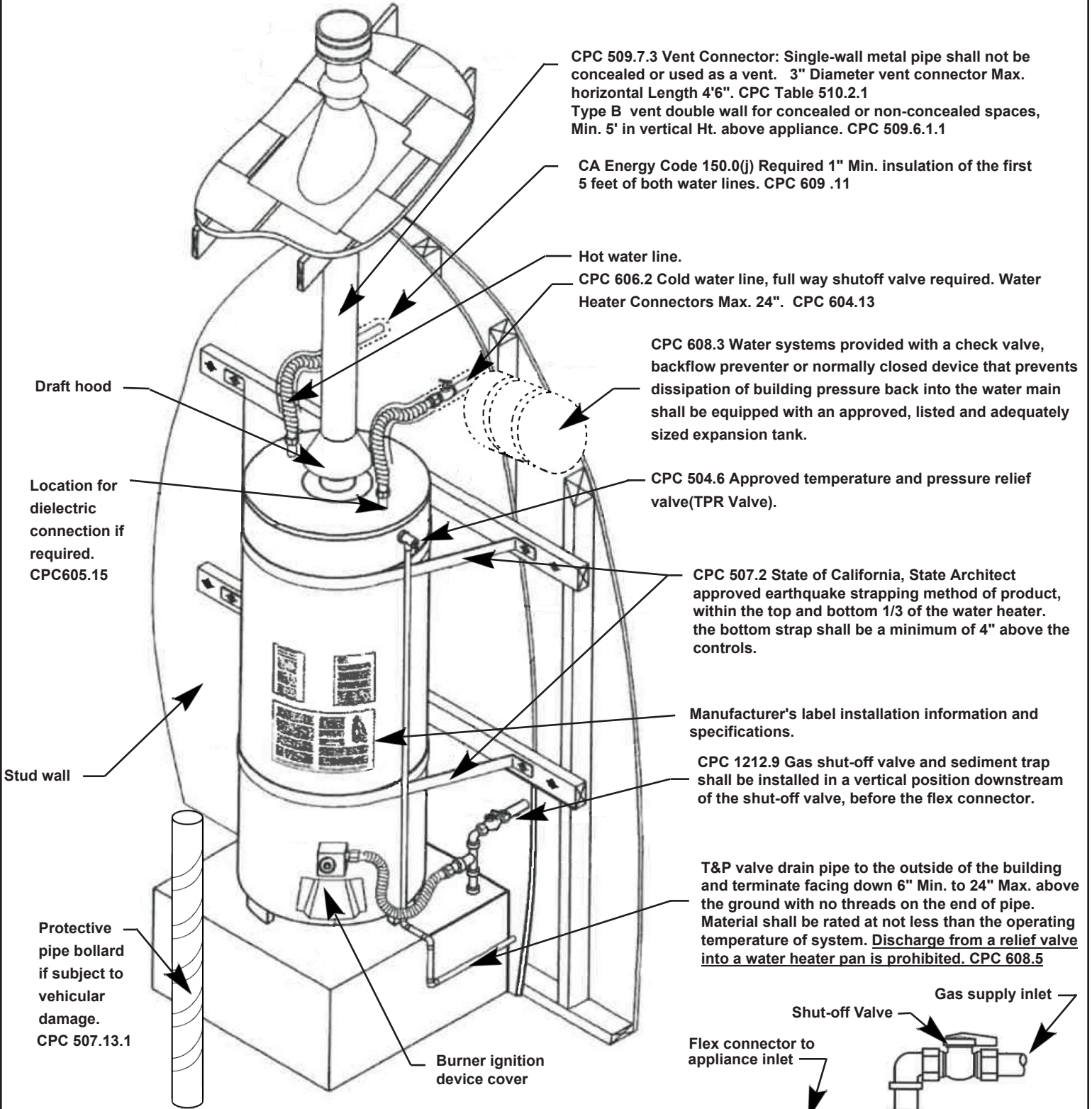


# City of Mission Viejo

Community Development: Building Services Division  
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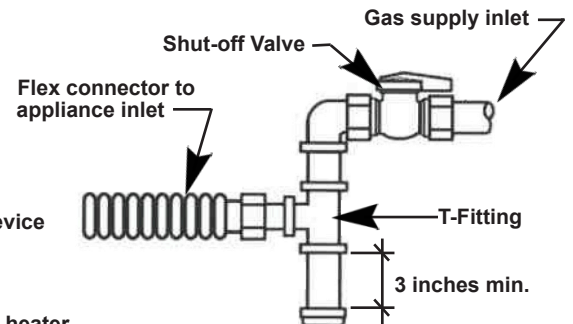
## Residential Water Heater Installations

CA Plumbing Code



CPC 507.13 Appliances in garages shall be installed so that all burners or burner ignition device are a Min. 18" above the floor unless listed as "Flammable Vapor Ignition Resistant" (FVIR).

CPC 507.5 Drain pan 1 1/2" is required where structural damage results from a leaking water heater, 3/4" drain shall be to an approved location.



**Sediment trap installation**

**GENERAL NOTES**

1. This information is intended to provide general guidance on the installation of gas water heaters in single family residences. It summarizes information contained in the California Plumbing Code (CPC) and the Building Code, but does not replace it. Manufacturer's installation instructions are an integral part of the installation requirements and shall be followed accordingly. If conditions are encountered that are not covered herein, the codes shall be consulted. Copies of the code can be reviewed in many libraries or at your local Building Division.
2. Most home improvement stores sell kits to anchor and strap water heaters. These kits must be approved by the State of California, State Architect. This is demonstrated by the seal of the State Architect, which looks like a sea-shell with inches "ACCEPTABLE METHOD" written below. Install these kits per the installation instructions. Other methods may be submitted to the Building Official for approval.
3. Manufacturer's labels include instructions for installation and requirements for clearances from combustibles and other important information, so it is important to review this information prior to installation.
4. Access to water heaters must be provided with an opening at least 22 x 30 inches wide and large enough to remove the heater. See the code for additional requirements. CPC 508.4
5. Fuel gas piping flex connectors must be approved for the type of installation, exterior or interior grade based on location. CPC 1212.1
6. Provide a full-way valve on the inlet side of the heater. CPC 606.2
7. Mixing of dissimilar metals is not permitted, unless dielectric insulators are used in the connections. CPC 507.1
8. A sediment trap shall be installed in a vertical position downstream of the shut-off valve and before the flex-connector. CPC 1212.9
9. If the water supply is a closed system, an expansion tank at the water heater will be required. Closed systems include backflow devices and check valve systems. CPC 608.3

**LOCATION REQUIREMENTS**

1. Interior Installation - The water heater shall not be installed in a room used for sleeping purposes (with exceptions CPC 504.1 (1),(2)), in clothes closets or in any confined space opening into a bedroom or bath. A drain pan at least 1.5 inches deep must be provided with a drain to an approved location or fixture. CPC 507.5
2. Exterior Installation - The water heater must be located on a level concrete slab at least 3 inches above grade and located in an approved enclosure.
3. Garage Installation - The burner of the water heater must be located at least 18 inches above the floor to preclude the ignition of combustible vapors unless listed as Flammable Vapor Ignition Resistant (FVIR) & must be protected from vehicular damage. CPC 507.13
4. Change of Water Heaters - Water heaters which are relocated must comply with all new code requirements. CPC 507.2 All new and replacement Water Heaters shall be braced, anchored, or strapped to resist displacement due to earthquake motion. HSC 19211 (a)

**VENTING REQUIREMENTS CPC 509**

1. Vents must terminate in accordance with the drawing to the right. Consult the code for conditions not shown.
2. Single wall vent connectors must be fastened with sheet metal screws, rivets, etc.
3. Single wall vent connectors must start and end in the same place as the water heater. No portion of the connector can be concealed within the construction of the building
4. Vent connectors must be the same size as the draft hood outlet on the appliance. They must slope up from the draft

hood to the vent at least 1/4 inch per foot. The total horizontal length of the venting system, including vent and vent connector, must not exceed 75% of the vertical height of the vent.

5. Provide separation to combustible materials as required by labeling requirements of vent pipe.

6. When a vent penetrates a ceiling, a thimble (also known as a bucket or fire stop) shall be installed at the ceiling line.

TABLE 509.6.1	
Y/X	H (MIN FEET) of
Flat to 6/12	1.0
> 6/12 to 7/12	1.25
> 7/12 to 8/12	1.5
> 8/12 to 9/12	2.0
> 9/12 to 10/12	2.5
> 10/12 to 11/12	3.25
> 11/12 to 12/12	4.0
> 12/12 to 14/12	5.0
> 14/12 to 16/12	6.0
> 16/12 to 18/12	7.0
> 18/12 to 20/12	7.5
> 20/12 to 12/12	8.0

