RESIDENTIAL FURNACE

BUILDING INSPECTION REQUIREMENTS

A permit is required to replace an existing furnace and is required prior to installation. Following is a listing of general requirements based on the 2019 California Residential Code, 2019 California Mechanical Code, 2019 California Plumbing Code, 2019 California Electrical Code, and 2019 California Energy Efficiency Standards. This document is intended to provide general information, contact the Building Inspection Division for any questions or additional information.

Electrical Requirements

- An approved, independent means of disconnect for the electrical supply to each piece of equipment shall be provided in sight of the equipment served. [CMC 303.8.5, CEC 422.31, CEC 422.33(A)]
- A dedicated circuit shall be provided for the furnace. (CEC 422.12)
- A 120-volt service receptacle shall be installed near the equipment for maintenance. (CMC 304.4.4)
- A permanent switch controlled lighting fixture shall be installed for maintenance of equipment and shall be accessible. Such fixture shall provide sufficient illumination to safely approach the equipment and perform the tasks for which access is provided. Control of the lighting shall be provided at the access entrance. (CEC 210.70, CMC 304.4.4)

Duct Air Leakage Test (CEES 150.2(b)(1)(E))

An air leakage test, performed by a HERS rater, may be required for existing or newly installed ducts when an existing furnace is replaced. The CF-3R form completed by a HERS rater shall be provided to the building inspector at the final inspection.

Furnace Equipment Efficiency (CEES 110.2(a))

Warm-air furnaces and unit heaters rated at less than 225,000 Btu/h shall have a minimum efficiency rating of 78% AFUE (Annual Fuel Utilization Efficiency).

Combustion Air (CMC Chapter 7)

Combustion air must be maintained as required by the California Mechanical Code.

Clearance from Combustible Materials (CMC 904.2)

The clear space and distance to combustible materials around the furnace shall comply with the manufacturer's installation instructions. If installed in an attic, manufactured trusses shall not be altered without stamped and signed engineering calculations and drawings.

Anchorage of Equipment (CMC 303.4)

The furnace shall be properly anchored and supported to sustain vertical and horizontal loads within the stress limitations specified in the California Building Code.

Plastic Vent Piping (CMC 802.4.2)

Plastic pipe and fittings used to vent appliances shall be installed in accordance with the appliance manufacturer's installation instructions. When primer is required, it shall be of a contrasting color.

Located in a Crawl Space (CRC 302.13)

When a furnace is relocated to a crawl space, the underside of the floor joists shall be provided with a 1/2" gypsum or 5/8" wood structural panel or equivalent. This is not required for the replacement of an existing furnace already located in the crawl space.

Located in a Garage (CMC 305.1)

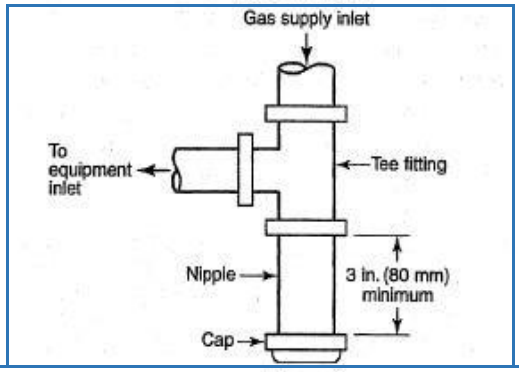
Furnaces located in a garage must be elevated so that the pilot light and controls are at least 18" above the garage floor surface (unless the unit is listed as flammable vapor ignition resistant). If subject to vehicular damage, adequate barriers must be installed (e.g. 4" diameter steel pipe filled with concrete installed in a footing measuring 12" in diameter and 3' deep and extending a minimum of 2'-9" above the finished floor).

Located in an Attic (CMC 304.4)

Furnaces located in an attic area shall comply with the diagram at the bottom of this page. Additionally, if the attic and roof is conventionally framed, ceiling joist under the location of the FAU unit shall be doubled with a minimum 2X6 joists.

Sediment Trap (CPC 1212.8)

A sediment trap shall be provided on the gas line downstream appliance shut-off valve and as close to the inlet of the equipment as practical.



Inspections

1. One final inspection is required after all work has been completed. Provide a copy of the duct leakage test performed by a HERS rater.

Attic Furnace Diagram