

- (B) Industrial gas utilization equipment requiring mobility shall be permitted to be connected to the rigid piping by the use of swivel joints or couplings that are suitable for the service required. Where swivel joints or couplings are used, only the minimum number required shall be installed.
- (C) Industrial gas utilization equipment subject to vibration shall be permitted to be connected to the building piping system by the use of all metal flexible connectors suitable for the service required.
- (D) Where flexible connections are used, they shall be of the minimum practical length and shall not extend from one room to another or pass through any walls, partitions, ceilings, or floors. Flexible connections shall not be used in a concealed location. They shall be protected against physical or thermal damage and shall be provided with gas shutoff valves in readily accessible locations in rigid piping upstream from the flexible connections. [NFPA 54:8.5.1, 8.5.2, 8.5.3]

#### 304.0 Installation.

**304.1 Listed Appliances.** Except as otherwise provided in the code, the installation of appliances regulated by this code shall conform to the conditions of listing. The appliance installer shall leave the manufacturer's installation and operating instructions attached to the appliance. Clearances of listed appliances from combustible materials shall be as specified in the listing or on the rating plate.

**304.2 Room Large in Comparison to Size of Equipment.** Central-heating furnaces not listed for closet or alcove installation shall be installed in a room or space having a volume at least twelve (12) times the total volume of the furnace; central-heating boilers not listed for closet or alcove installation shall be installed in a room or space having a volume sixteen (16) times the volume of the boiler.

##### Exceptions:

- (1) The installation clearances for furnaces and boilers in rooms not large in comparison with the size of the equipment shall be as specified in the appliance listing regardless of whether the enclosure is of combustible or noncombustible materials and shall not be reduced by the protection methods described in Table 3-2 or any other method.
- (2) **[For OSHPD 1, 2 & 4]** A reduction boiler room sizing up to 25 percent will be acceptable with

*forced draft combustible blowers and approved ventilation of the boiler room. In no case shall boiler room volume or clearances be reduced below those required by the conditions of the boiler listing. The boiler and the boiler room ventilation system, including fans, controls and damper motors shall be on emergency power when required by Section 316. The ventilation system shall either operate continuously, or, if interlocked with the boiler(s), it shall not interfere with the proper boiler operation.*

If the ceiling height of the room or space is greater than eight (8) feet (2,438 mm), the volume shall be calculated on the basis of an eight (8) foot (2,438 mm) height.

**304.3 Unlisted Appliances.** Unlisted appliances shall be installed with the standard clearances from combustible construction specified in Table 3-1. Unlisted appliances may have the standard clearances of Table 3-1 reduced by employing the forms of protection specified in Table 3-2. Forms of protection specified in Table 3-2 may be utilized to reduce clearances to combustible construction for all applicable appliances.

**304.4 Anchorage of Appliances.** Appliances designed to be fixed in position shall be securely fastened in place. Supports for appliances shall be designed and constructed to sustain vertical and horizontal loads within the stress limitations specified in the Building Code.

**304.5 Identification of Equipment.** When more than one heating, cooling, ventilating, or refrigerating system is installed on the roof of a building or within a building, it shall be permanently identified as to the area or space served by the equipment.

**304.6 Liquefied Petroleum Gas Facilities.** Containers, container valves regulating equipment, and appurtenances for the storage and supply of liquefied petroleum gas shall be installed in accordance with the *California Fire Code*.

#### **304.7 Liquefied Petroleum Gas Appliances.**

**[HCD 1 and HCD 2]** *Liquefied petroleum gas-burning appliances shall not be installed in a pit, basement or similar location where heavier-than-air gas might collect. Appliances so fueled shall not be installed in an above-grade under-floor space or basement unless such location is provided with an approved means for removal of unburned gas.*

#### **305.0 Access.**

Appliances shall be accessible for inspection, service, repair, and replacement without removing permanent construction.

Unless otherwise specified, not less than thirty (30) inches (762 mm) in depth, width, and height of