



Fire Department

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CODE SUMMARY

PERMITS – LP-GAS

A code summary is a compilation of code sections related to a specific occupancy or permit. This code summary lists sections of code pertaining to occupancies and operations as defined by the **California Fire Code**. Under each heading you will find the correlating code language and the reference cited. These requirements pertain to existing buildings. New construction may be subject to additional requirements. Please feel free to direct any questions to the Fire Prevention Division at (805) 681-5500.

SCOPE:

This guideline shall apply to liquefied petroleum gas. For the purposes of clarity, the terms “liquefied petroleum gas(es)”, “LP-Gas”, and “LPG” are synonymous and shall mean any material having a vapor pressure not exceeding that allowed for commercial propane composed predominantly of the following hydrocarbons, either by themselves or as mixtures: propane, propylene, butane (normal butane or isobutane), and butylene (including isomers). See additional requirements presented in Chapter 53 – Compressed Gases.

LPG is generally stored at normal room temperature and atmospheric pressure. LPG liquefies under moderate pressure, and vaporizes upon release of this pressure. It is this property that facilitates transporting and storage of LPG in a concentrated liquid form, and use in a vapor form (gas). LPG vapors are heavier than air.

1. A permit is required to store or use LP-Gas.

2. Portable LP-gas containers shall not be used inside buildings.

Exceptions:

- 1.) LP-gas shall not be used in an above-grade underfloor space or basement unless such location is provided with an approved means of ventilation. (CFC 6103.2.1.1)
- 2.) Portable LP-gas containers are allowed in buildings under construction for temporary heating. (CFC 6103.2.1.2)
- 3.) In Group F occupancies, LP-gas containers are allowed to supply quantities necessary for processing research or experimentation. (CFC 6103.2.1.3)
- 4.) In Group E and I occupancies, portable LP-gas containers are allowed for research and experimentation.
 - a. Such containers shall not be used in classrooms.
 - b. Such containers shall not exceed a 50-pound water capacity in Educational occupancies
 - c. Such containers shall not exceed a 12-pound water capacity in Institutional occupancies. (CFC 6103.2.1.4)
- 5.) Portable LP-gas containers are allowed to be used temporarily for demonstrations and public exhibitions.
 - a. Such containers shall not exceed a water capacity of 12 pounds.
 - b. Where more than one container is present in the same room, containers shall be separated by not less than 20 feet. (CFC 6103.2.1.5)
- 6.) Portable LP-gas containers are allowed to supply approved self-contained torch assemblies or similar appliances.
 - a. Such containers shall not exceed a capacity of 2 ½ pounds. (CFC 6103.2.1.6)
- 7.) Listed LP-gas commercial food service appliances are allowed for food preparation in restaurants and commercial kitchens in accordance with the *California Mechanical Code*. (CFC 6103.2.1.7)

3. The aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons.

Exception:

- 1.) In particular installations, the capacity shall be determined by the fire code official based upon the nature of the facility, proximity to buildings, capacity of storage, and the degree of special fire protection systems. (CFC 6104.2)

4. LP-gas containers shall be located with respect to buildings, public ways and lot lines of adjacent properties that can be built upon in accordance with Table 6104.3. (CFC 6104.3)

**TABLE 6104.3
LOCATION OF LP-GAS CONTAINERS**

LP-GAS CONTAINER CAPACITY (water gallons)	MINIMUM SEPARATION BETWEEN LP-GAS CONTAINERS AND BUILDINGS, PUBLIC WAYS OR LOT LINES OF ADJOINING PROPERTY THAT CAN BE BUILT UPON		MINIMUM SEPARATION BETWEEN LP-GAS CONTAINERS ^{b, c} (feet)
	Mounded or underground LP-gas containers ^a (feet)	Above-ground LP-gas containers ^b (feet)	
Less than 125 ^{c, d}	10	5 ^e	None
125 to 250	10	10	None
251 to 500	10	10	3
501 to 2,000	10	25 ^{e, f}	3
2,001 to 30,000	50	50	5
30,001 to 70,000	50	75	(0.25 of sum of diameters of adjacent LP-gas containers)
70,001 to 90,000	50	100	
90,001 to 120,000	50	125	

For SI: 1 foot = 304.8 mm, 1 gallon = 3.785 L.

- a. Minimum distance for underground LP-gas containers shall be measured from the pressure relief device and the filling or liquid-level gauge vent connection at the container, except that all parts of an underground LP-gas container shall be 10 feet or more from a building or lot line of adjoining property which can be built upon.
- b. For other than installations in which the overhanging structure is 50 feet or more above the relief-valve discharge outlet. In applying the distance between buildings and ASME LP-gas containers with a water capacity of 125 gallons or more, a minimum of 50 percent of this horizontal distance shall also apply to all portions of the building which project more than 5 feet from the building wall and which are higher than the relief valve discharge outlet. This horizontal distance shall be measured from a point determined by projecting the outside edge of such overhanging structure vertically downward to grade or other level upon which the LP-gas container is installed. Distances to the building wall shall not be less than those prescribed in this table.
- c. When underground multicontainer installations are comprised of individual LP-gas containers having a water capacity of 125 gallons or more, such containers shall be installed so as to provide access at their ends or sides to facilitate working with cranes or hoists.
- d. At a consumer site, if the aggregate water capacity of a multicontainer installation, comprised of individual LP-gas containers having a water capacity of less than 125 gallons, is 500 gallons or more, the minimum distance shall comply with the appropriate portion of Table 6104.3, applying the aggregate capacity rather than the capacity per LP-gas container. If more than one such installation is made, each installation shall be separated from other installations by at least 25 feet. Minimum distances between LP-gas containers need not be applied.
- e. The following shall apply to above-ground containers installed alongside buildings:
 1. LP-gas containers of less than a 125-gallon water capacity are allowed next to the building they serve when in compliance with Items 2, 3 and 4.
 2. Department of Transportation (DOTn) specification LP-gas containers shall be located and installed so that the discharge from the container pressure relief device is at least 3 feet horizontally from building openings below the level of such discharge and shall not be beneath buildings unless the space is well ventilated to the outside and is not enclosed for more than 50 percent of its perimeter. The discharge from LP-gas container pressure relief devices shall be located not less than 5 feet from exterior sources of ignition, openings into direct-vent (sealed combustion system) appliances or mechanical ventilation air intakes.
 3. ASME LP-gas containers of less than a 125-gallon water capacity shall be located and installed such that the discharge from pressure relief devices shall not terminate in or beneath buildings and shall be located at least 5 feet horizontally from building openings below the level of such discharge and not less than 5 feet from exterior sources of ignition, openings into direct vent (sealed combustion system) appliances, or mechanical ventilation air intakes.
 4. The filling connection and the vent from liquid-level gauges on either DOTn or ASME LP-gas containers filled at the point of installation shall not be less than 10 feet from exterior sources of ignition, openings into direct vent (sealed combustion system) appliances or mechanical ventilation air intakes.
- f. This distance is allowed to be reduced to not less than 10 feet for a single LP-gas container of 1,200-gallon water capacity or less, provided such container is at least 25 feet from other LP-gas containers of more than 125-gallon water capacity.

- 5. LP-gas containers used in stationary installations shall not be located on roofs of buildings.**
(CFC 6104.3.1)
- 6. LP-gas shall not be used to operate devices or equipment unless such equipment is approved for the use with LP-gas.** (CFC 6105.1)
- 7. LP-Gas shall not be released to the atmosphere accept through an approved liquid-level gauge.**
(CFC 6105.1)
- 8. Dispensing of LP-gas shall be performed by a qualified attendant.** (CFC 6106.1)
- 9. LP-gas containers shall not be overfilled determined by utilizing the fixed level gauge provided on the filling equipment or by weight.** (CFC 6106.2)
- 10. Safety devices on LP-gas containers shall not be tampered with or made ineffective.** (CFC 6107.1)
- 11. "NO SMOKING" signs shall be posted. Smoking shall not be allowed within 25 feet of filling operations.** (CFC 6107.2)
- 12. Weeds, grass, brush, trash, and other combustible materials shall be kept a minimum of 10 feet from LP-gas containers.** (CFC 6107.3)
- 13. Where exposed to possible vehicular damage, installed LP-gas containers, regulators and piping shall be protected from such damage.** (CFC 6107.4) (CFC 312.1)
- 14. Portable fire extinguishers shall be provided as follows:**
 - A. Mobile units, including mobile kitchens and mobile catering vehicles carrying LP containers shall be equipped with a minimum of at least one 10-BC extinguisher. (CFC 6108.2)
- 15. Stored LP-gas containers awaiting use or resale shall not be located near exit access doors, exits, stairways or in areas intended to be used as a means of egress.** (CFC 6109.4)
- 16. Stored LP-gas containers awaiting use or resale shall not be stored on roofs of buildings.** (CFC 6109.6)
- 17. Stored LP-gas containers awaiting use or resale shall not be stored in above-grade underfloor spaces or in basements unless such location is provided with an approved means of ventilation.** (CFC 6109.7)
- 19. LP-gas containers valves shall be protected from physical damage by means of screw-on protective caps, collars or similar devices.**
LP-gas containers shall have caps in place regardless of whether they are full, partially full or empty. (CFC 6109.8)
- 20. Quantities of stored LP-gas containers awaiting use or resale inside buildings not accessible to the public shall not exceed 735 pounds at any one location.**
Where additional storage location is required on the same floor, storage locations shall be separated by at least 300 feet. (CFC 6109.10)
- 21. Location of storage of LP-gas containers awaiting use or resale shall be located in accordance with Table 6109.12.** (CFC 6109.12)

**TABLE 6109.12
SEPARATION FROM EXPOSURES OF LP-GAS CONTAINERS AWAITING USE,
RESALE OR EXCHANGE STORED OUTSIDE OF BUILDINGS**

QUANTITY OF LP-GAS STORED (pounds)	MINIMUM SEPARATION DISTANCE FROM STORED LP-GAS CYLINDERS TO (feet):						
	Nearest important building or group of buildings or line of adjoining property that may be built upon	Line of adjoining property occupied by schools, places of religious worship, hospitals, athletic fields or other points of public gathering; busy thoroughfares; or sidewalks	LP-gas dispensing station	Doorway or opening to a building with two or more means of egress	Doorway or opening to a building with one means of egress	Combustible materials	Motor vehicle fuel dispenser
720 or less	0	0	5	5	10	10	20
721 – 2,500	0	10	10	5	10	10	20
2,501 – 6,000	10	10	10	10	10	10	20
6,001 – 10,000	20	20	20	20	20	10	20
Over 10,000	25	25	25	25	25	10	20

For SI: 1 foot = 304.8 mm, 1 pound = 0.454 kg.

- 22. Storage of LP-gas containers awaiting use or resale shall be within a suitable enclosure or otherwise protected against tampering. Vehicular protection shall also be provided where necessary.**
(CFC 6109.13)
- 23. LP-gas containers temporarily out of service shall comply with all of the following:**
- A. Be disconnected from appliance piping.
 - B. Have LP-gas container outlets, except relief valves, closed or plugged.
 - C. Be positioned with relief valve in direct communication with the LP-container vapor space. (CFC 6110.1)
- 24. LP-gas containers place permanently out of service shall be removed from the site.** (CFC 6110.2)
- 25. LP-gas tank vehicles shall not be left unattended at any time on residential streets or within 500 feet of a residential area, apartment or hotel complex, educational facility, hospital, or care facility.**
(CFC 6111.21)
- 26. LP-gas tank vehicles parked at any one point for more than 1 hour shall be located as follows:**
- A. Off public streets, highways, public avenues or public alleys.
 - B. Inside a bulk plant parking area.
 - C. At other approved locations not less than 50 feet from buildings other than those approved for servicing such vehicles.
- 27. LP-gas containers storing more than 4,000 gallons shall be protected with an automatic fire extinguishing system.** (CFC 6108.1)