



# **BROCHURE # 60**

## **RESIDENTIAL LIQUEFIED PETROLEUM TANKS**



Storage of liquefied petroleum (LP) gas and the installation of equipment in residential structures shall be in accordance with *International Fire Code* for tanks and *International Fuel Gas Code* for piping and International Mechanical Code for equipment.

A Building Mechanical Permit is required for the installation of any LP gas (propane) tank up to 500 gallons. A Fire Code Construction permit is required for the installation of any LP gas (propane) tank over 500 gallons. Distributors shall not fill an LP gas container unless a permit for installation has been issued and its installation inspected and approved.

Applications that need to be submitted when installing an LP gas tank shall include:

- A site plan clearly identifying the tank's location with respect to buildings
- Property lines and sources of ignition
- Manufacturer specification sheets that include size of container(s), design for above or in ground installation and structural supports included.

Containers shall be located with respect to buildings, public ways, and lines of adjoining property in accordance with Table 1 (see Figure 1)

Containers shall also be located with respect to special hazards such as aboveground flammable or combustible

Liquid tanks, oxygen or gaseous hydrogen containers, flooding or electric power lines.

Weeds, grass, brush, trash and other combustible materials shall be kept not less than 10' from LP gas tanks or containers.

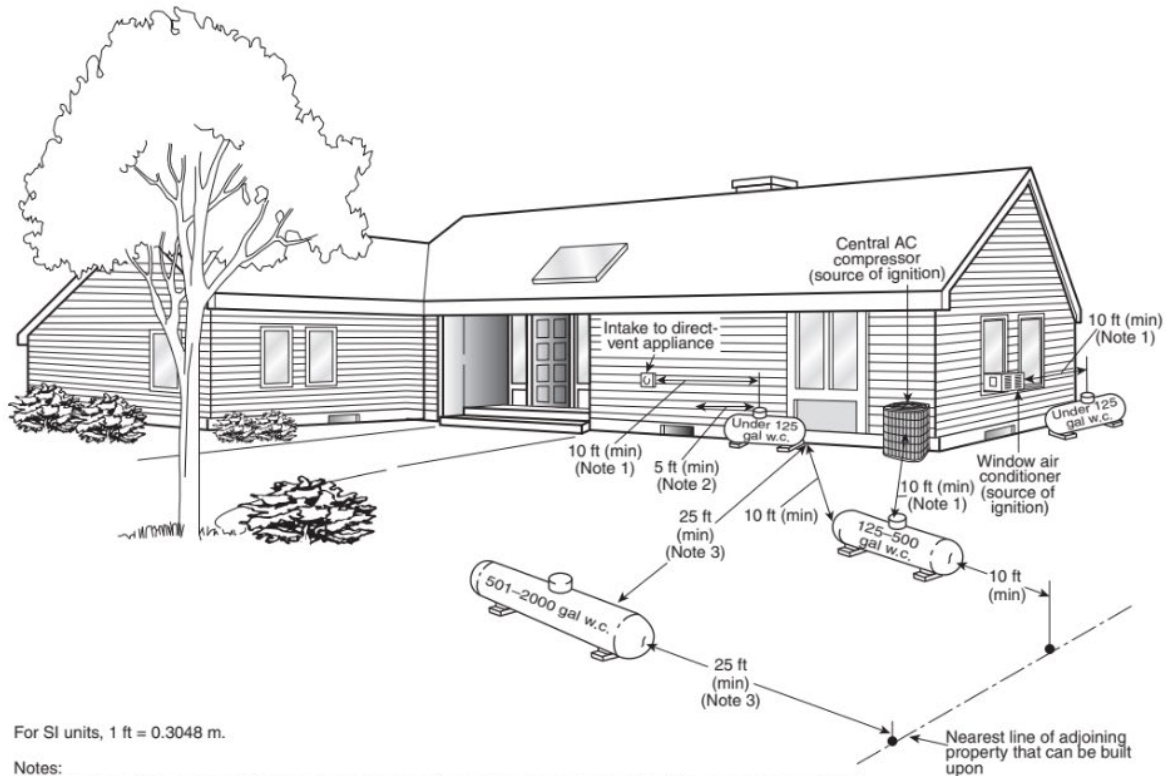
When exposed to probable vehicular damage due to proximity to alleys, driveways or parking areas, LP gas containers, regulators and piping shall be suitably protected with bollards or other approved physical barriers. Note: LP gas containers shall not be used in a basement, above-grade underfloor space, pit or similar location where heavier-than-air gas might collect.

LP GAS CONTAINERS CAPACITY (water gallons)	MINIMUM SEPARATION BETWEEN LP-GAS CONTAINERS AND BUILDINGS, PUBLIC WAYS <sup>g</sup> OR LOT LINES OF ADJOINING PROPERTY THAT CAN BE BUILT UPON		MINIMUM SEPARATION BETWEEN LP-GAS CONTAINERS <sup>b,c</sup> (feet)
	Mounded or Underground Containers <sup>a</sup> (feet) <sup>1</sup>	Aboveground Containers <sup>b</sup> (feet) <sup>2</sup>	
Less than 125 <sup>c,d</sup>	10	5 <sup>e</sup>	None
125 to 250	10	10	None
251 to 500	10	10	3
501 to 2,000	10	25 <sup>e,f</sup>	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 not less than 10 feet from a building or lot line of adjoining property that 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, not less than 50 percent of this horizontal distance shall also apply to all portions of the building that project more than 5 feet from the building wall and that 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 be not less than those prescribed in this table.
- c. Where underground multicontainer installations are composed 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 not less than 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 where 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 not less than 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 not less than 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 be not 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 not less than 25 feet from other LP-gas containers of more than 125-gallon water capacity.
- g. Above-ground LP gas containers with a water capacity of 2,000 gallons or less shall be separated from public ways by a distance of not less than 5 feet. Containers with a water capacity greater than 2,000 gallons shall be separated from public ways in accordance with this table

Figure 1



For SI units, 1 ft = 0.3048 m.

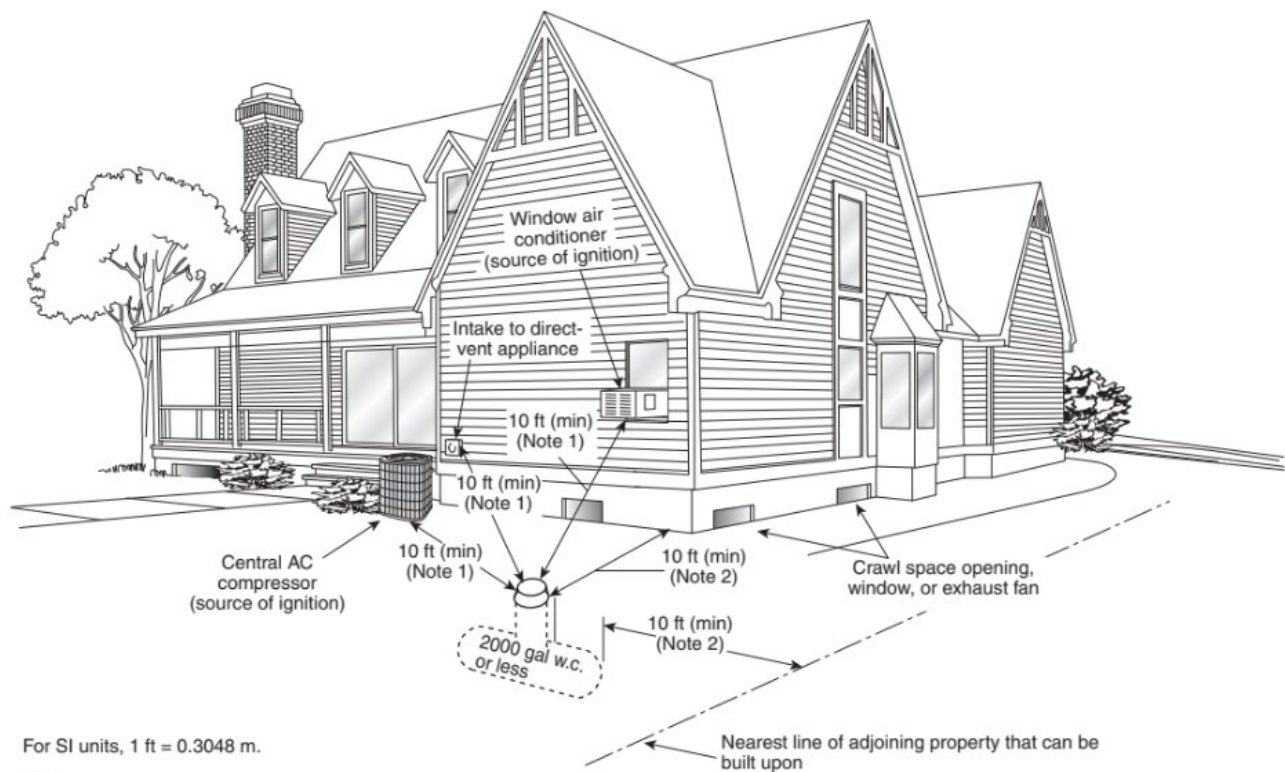
Notes:

(1) Regardless of its size, any ASME container filled on site must be located so that the filling connection and fixed maximum liquid level gauge are at least 10 ft from any external source of ignition (e.g., open flame, window AC, compressor), intake to direct-vented gas appliance, or intake to a mechanical ventilation system. Refer to 6.4.4.3.

(2) Refer to 6.4.4.3.

(3) This distance can be reduced to no less than 10 ft for a single container of 1200 gal (4.5 m<sup>3</sup>) water capacity or less, provided such container is at least 25 ft from any other LP-Gas container of more than 125 gal (0.5 m<sup>3</sup>) water capacity. Refer to 6.4.1.3.

**FIGURE I.1 (b) Aboveground ASME Containers.** (Figure for illustrative purposes only; code compliance required.)



For SI units, 1 ft = 0.3048 m.

Notes:

- (1) The relief valve, filling connection, and fixed maximum liquid level gauge vent connection at the container must be at least 10 ft from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes. Refer to 6.4.4.4.
- (2) No part of an underground container can be less than 10 ft from an important building or line of adjoining property that can be built upon. Refer to Table 6.4.1.1.

**FIGURE I.1(c) Underground ASME Containers.** (Figure for illustrative purposes only; code compliance required.)

