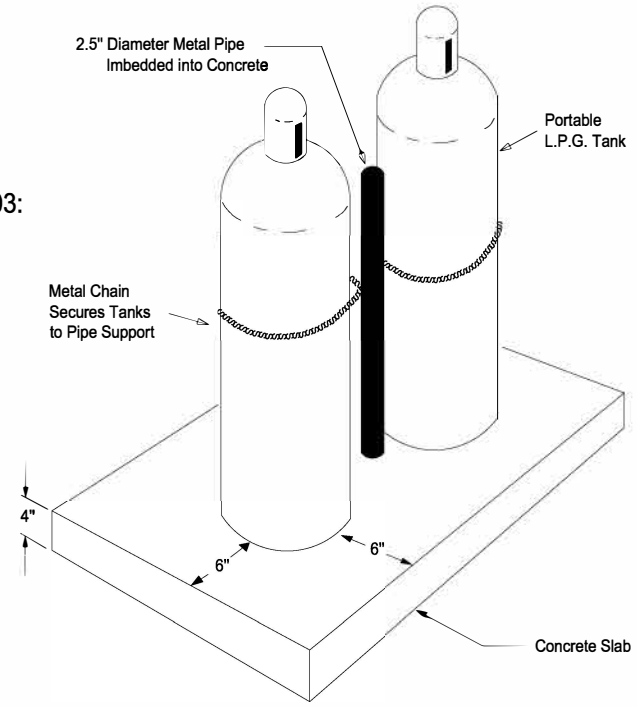
Residential and Commercial Installation Instructions

Reference current Mesa adopted International Fire Codes (IFC) with amendments and National Fire Protection Association (NFPA) 58 for LPG installation specifications.

- **Construction Permits:** New cylinder installs require a construction permit with site plan diminishes, cylinder size and type, cylinder manufacture specification sheets, and piping material type and size. Submit plans to Development services at 55 N. Center St., Mesa.

- **Additional Requirements:** At minimum, all compressed gas cylinders must have the following per IFC 5303:
  1. Place on level surfaces but prevent water accumulation under cylinders.
  2. Do not place cylinders on direct soil to prevent corrosion.
  3. Prevent exposure to extreme heat from the sun.
  4. Ensure natural or artificial lighting is provided.
  5. Secure cylinders and prevent from unauthorized usage.
  6. Prevent falling object from coming into contact with cylinders.
  7. Prevent physical damage of cylinders by distance and/or barriers (i.e. guard posts, etc.)
  8. Cylinders will maintain a 10-foot minimum clearance distance from dried grass, brush, weeds, and other combustible materials.
  9. All vertical cylinders over 125 gallons of water capacity are required to be supported by a four-inch continuous reinforced concrete or masonry slab built over well packed earth. The foundation will extend 6 inches beyond cylinders (NFPA 58: 5.2.7). See adjacent diagram.



For Cylinders over 125 gallons (water capacity)

- **Property Lines:** Containers can be placed on property lines when a six-foot wall masonry wall divides property lines. The wall shall extend 10 feet in each directions with no holes or surface openings.

- **Storing Along Buildings:** LPG cylinders with a water capacity less than 125 gallons may be stored and/or used alongside a building they serve when all the following criteria is met:

  - Department of Transportation (DOT) specification containers shall be located and installed so the container pressure-relief device discharge is at least 3 feet horizontally away from any building openings below the level of such discharge and shall not be beneath any building unless the space is well ventilated to the outside and is not enclosed for more than 50 percent of its perimeter. The discharge from container pressure-relief devices shall be located no less than 5 feet in any directions away from any exterior source of ignition, openings into direct-vent (sealed combustion system) appliances or mechanical ventilation air intakes.

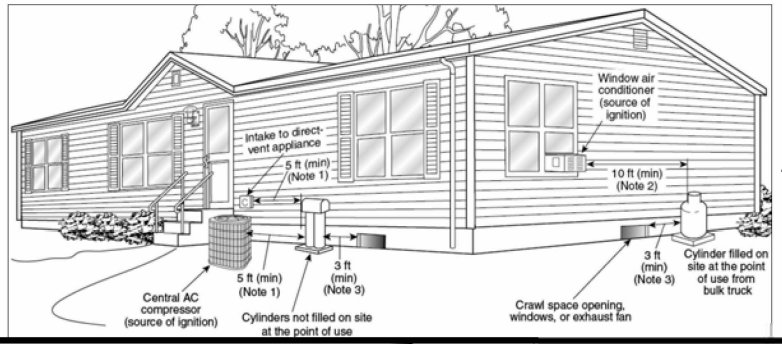
  - American Society of Mechanical Engineers (ASME) containers with a water capacity less than 125 gallons shall be located and installed so that discharge from pressure-relief devices shall not terminate in or beneath any building and shall be located at least 5 feet horizontally away from any building opening below the level of such discharge and not less than 5 feet in any direction away from any exterior source of ignition, openings into direct-vent (sealed combustion system) appliances, or mechanical ventilation air intakes.

  - The filling connection and the vent from liquid level gauges on either DOT or ASME container filled at the point of installation shall not be less than 10 feet in any direction away from any exterior source of ignition, openings in direct-vent (seal combustion system) appliances, or mechanical ventilation air intakes.

Residential LPG Cylinder Separation Distances

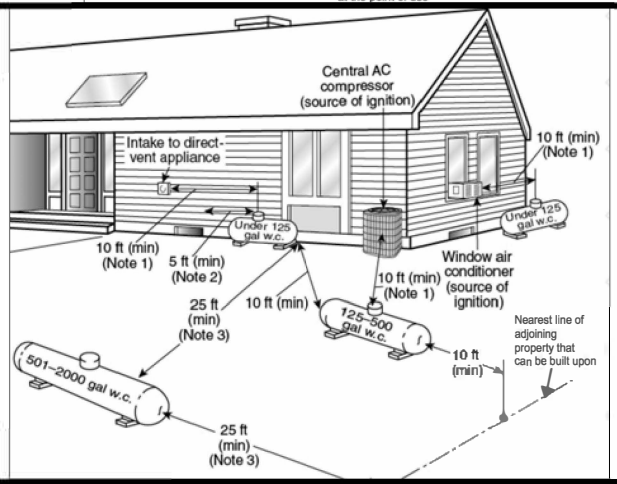
Above ground Non-ASME Containers

1. 5 ft. minimum from relief valve in any directions away from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intake. NFPA 58: Table 6.5.3.
2. If the cylinder is filled on site at the point of use from a cargo tank motor vehicle, the filling connection and vent must be at least 10 ft. from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes. NFPA 58: 6.5
3. Reference NFPA 58: 6.3.7



Above ground Non-ASME Containers

Above ground ASME Containers

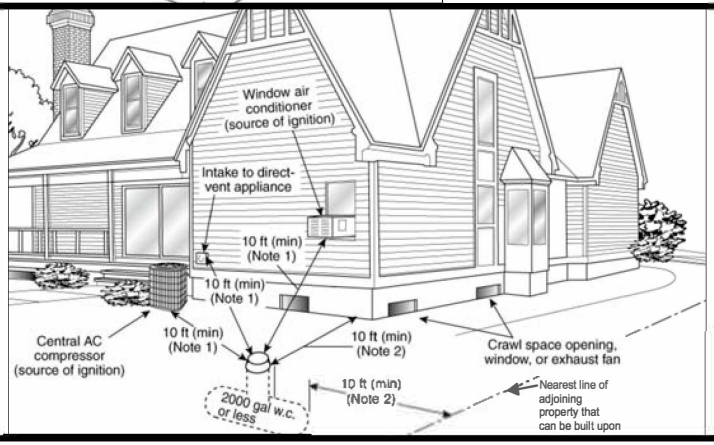


Above ground Container Notes:

1. Regardless of its size, any ASME container filled on site must be located so the filling connection and fixed maximum liquid level gauge are at least 10 ft. from any external ignition source (i,e, Open flame, window AC. compressor), intake to direct-vent gas appliance,or intake to a mechanical ventilation system. NFPA 58: Table 6.5.3.
2. Reference NFPA 58: 6.3.4.3
3. This distance can be reduced to no less than 10 ft. for a single container of 1,200 gallons water capacity (W.C.) or less, provided such container is at least 25 ft. from any other LP-Gas container of more than 125 gallon water capacity. NFPA 58: 6.3.3

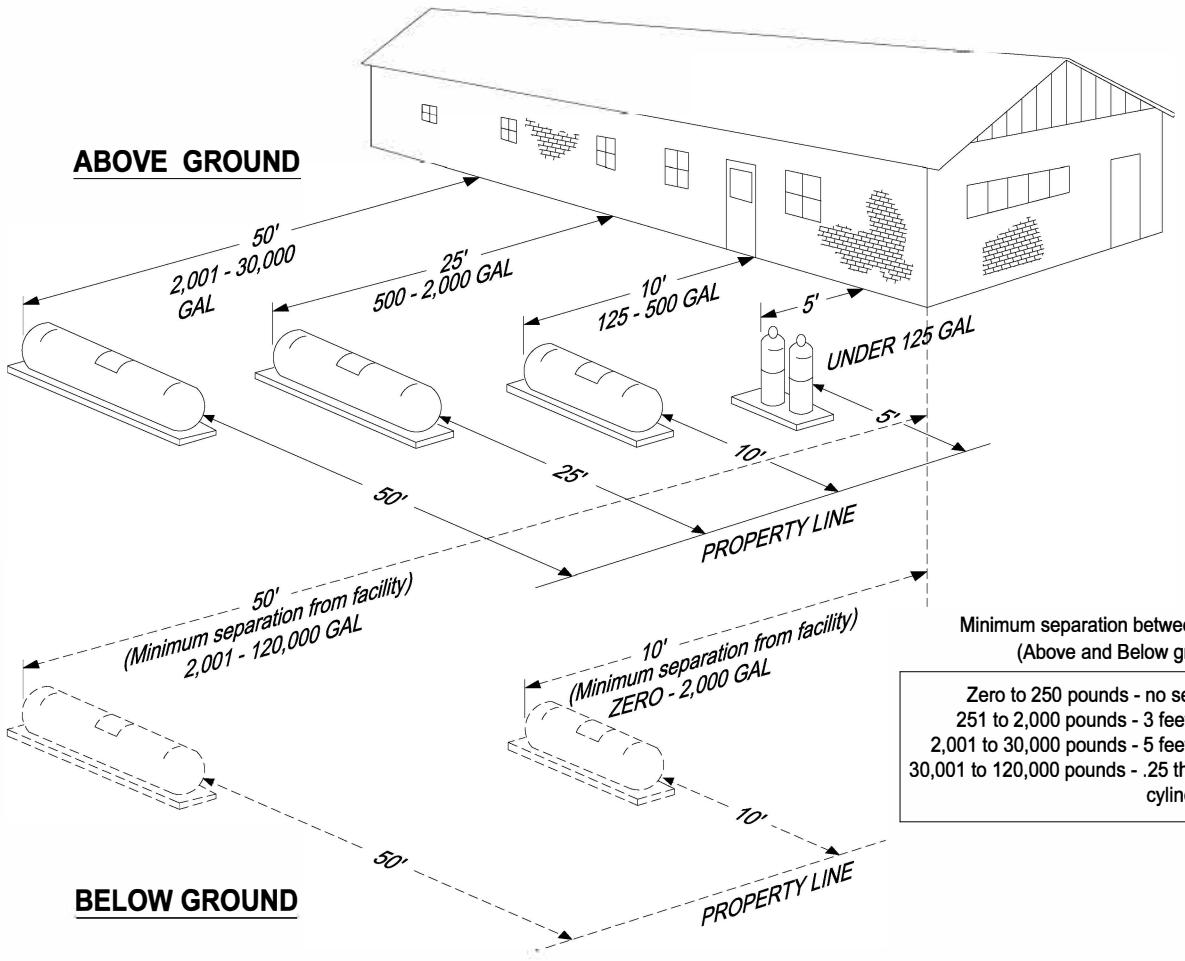
Underground Container Notes:

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 intake. NFPA 58: Table 6.5.3.
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. NFPA 58: 6.3.4.2.



Underground ASME Containers

Commercial LPG Cylinder Separation Distances

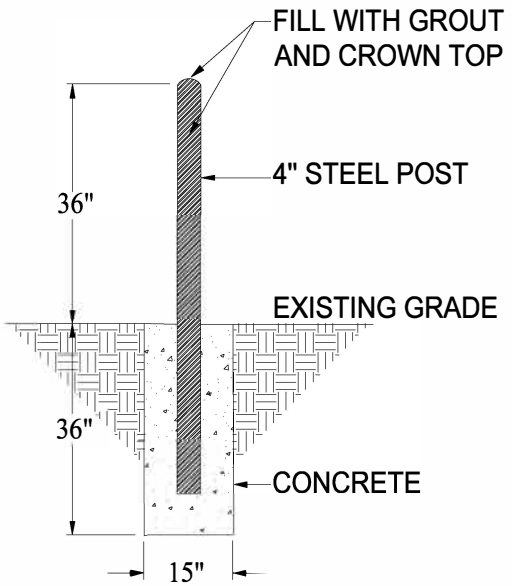


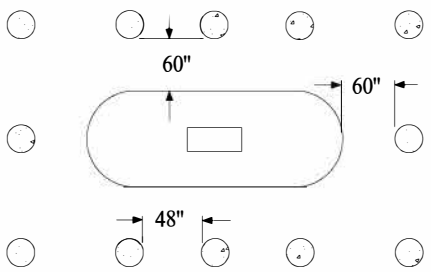
Minimum separation between cylinders
(Above and Below grade)

Zero to 250 pounds - no separation required
251 to 2,000 pounds - 3 feet
2,001 to 30,000 pounds - 5 feet
30,001 to 120,000 pounds - .25 the sum of adjacent cylinder diameter

BOLLARD INSTALLATION

(When Subject to Vehicle Impact)





BOLLARD SPACING

(Vehicle Impact Protection - 2018 IFC Section 312)

For storage of portable LP-Gas containers awaiting use or resale (i.e. 5-gallon LPG cylinders), see 2018 IFC Section 3809.