



### HAZARDOUS MATERIALS LIQUIFIED PETROLEUM GAS (LPG) TANK INSTALLATION REQUIREMENTS

The following information is to be used whenever aboveground or underground propane tanks are installed. This information correlates with IFC Chapter 61 and NFPA 58.

#### Permits Required

1. An **"installation"** permit is required for the installation of all LPG containers exceeding a 125-gallon water capacity. A completed permit application, site plan and container spec sheets are required to be submitted for review and approval. The "installation" permit is \$230.00 per tank for tanks 125-500gal. \$530.00 per tank for tanks 501-2,000gal.
2. An annual **"operational"** permit is required for the storage and use of LPG containers 125-2,000gal. at commercial occupancies. The annual "operational" permit is \$350.00. An "operational" permit is not required for LPG tanks serving single family dwellings.

#### Underground Tank Installation Requirements

1. **Installer Certification.** Installation of any LPG tank is only to be done by individuals and companies that are certified by the Utah State Fire Marshals Office.
2. **Tank Capacities, and Type.** The maximum aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons. Tanks must be approved for underground installation.
3. **Sand Base.** Although concrete or masonry foundations are not always required, sand should still be used in the bottom of the hole for drainage. It is a good practice to put a 6 to 12 inch layer of coarse sand in the bottom of the hole before setting the tank.
4. **Water Tables.** Underground LPG tanks are not allowed in areas of the county with high water tables or in federal flood zones, unless approved by the Fire Marshal. If approved, underground tanks must be anchored or secured to a reinforced concrete foundation. Where straps come in contact with the tank, protection between the tank and the straps is to be provided. Thick tarpaper, celetex, etc. that is water resistant will suffice.
5. **Corrosion Protection Equipment.** In order to reduce the problem of corrosion of underground tanks, sacrificial anodes are to be installed in the ground near the tank. The anodes are connected by a copper cable to the tank. Anodes are usually a soft metal, such as magnesium or zinc. They are made as solid rods or stakes, as well as soft powder in small bags.
6. **Tank Coating.** Underground tanks must be designed and coated for underground installation. They are usually factory coated. However, coatings may have been scratched off during transportation and installation. As a result, the tank must be recoated onsite before it is installed in the ground.
7. **Tank Depth.** The top of the tank when set in the hole must be at least six (6) inches below grade. If the tank is to be installed in an area where vehicles may travel over the top of the tank, two feet (24-inches) of compacted earth shall be set below grade.
8. **Backfill.** The hole is to be backfilled with rock free dirt or coarse sand. The tanks surface is not to be scratched. A minimum of twelve (12) inches of backfill is to be tamped down around the tank at any one time, then an additional twelve inches is filled in and tamped, etc. until the hole is full.

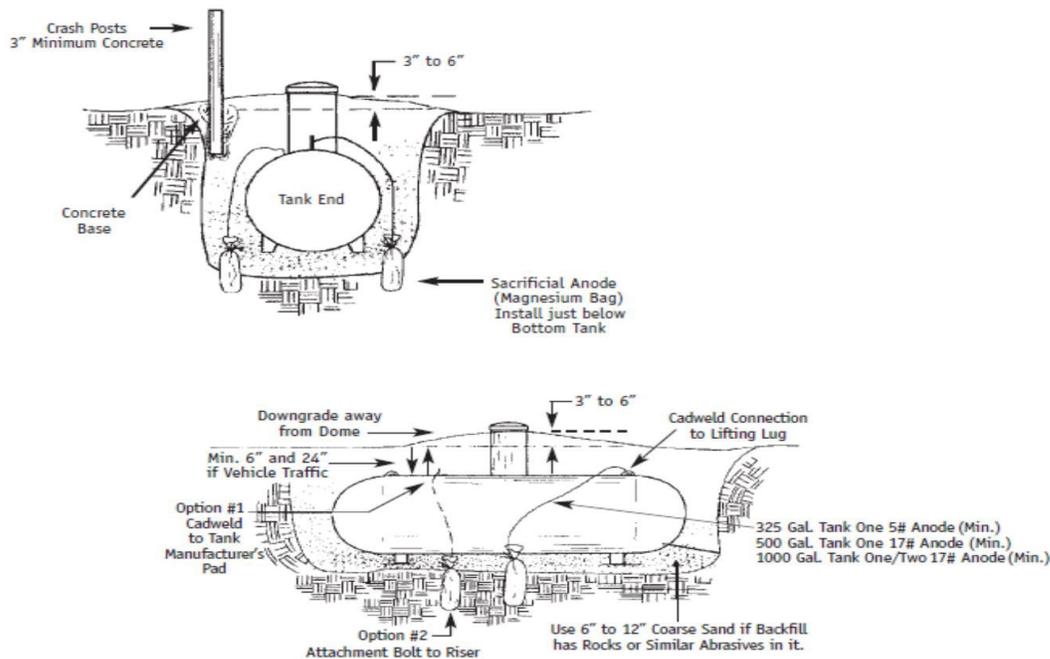


9. **Location of Containers.** The minimum separation between containers that are underground shall be three (3) feet, and the minimum distance from buildings, public ways, or lot lines of adjoining property shall be ten (10) feet.

10. **Emergency Shutoff Valves.** Compressed gas systems conveying flammable gases shall be provided with approved manual or automatic emergency shutoff valves that can be activated at each point of use and at each source.

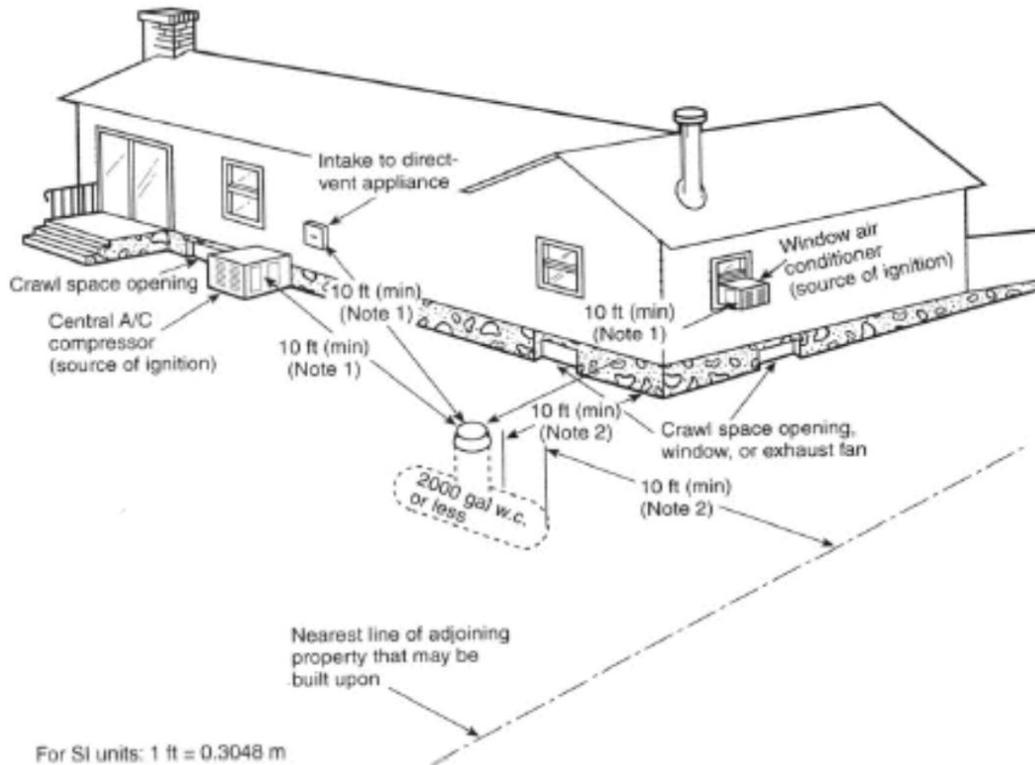
### Underground LPG Tank Inspection Checklist

- Plans are submitted and approved showing tank placement.
- Tank does not exceed 2,000 gallons water capacity.
- Tank installed by a Utah Fire Marshals Office, licensed and certified company.
- Permit for tank installation on site.
- Tank must be ASME approved as indicated on the tank.
- Sand base provide per item number one above.
- Concrete base with protected tie downs in areas of the county with high water tables.
- Sacrificial anodes are installed in the ground near the tank.
- If scratched, tank must be recoated onsite before it is installed in the ground.
- Proper depth and compacted earth per items five and six above.
- Location of tank complies with number seven above.
- Shut off valve accessible.





### Underground Tank Setback Requirements



### Aboveground LPG Tank Installation Requirements

- 1. Installer Certification.** Installation of any LPG tank is only to be done by individuals and companies that are certified by the Utah State Fire Marshal's Office.
- 2. Tank Capacities.** The maximum aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons.
- 3. Tank Locations.** In many instances tanks will have to be a minimum of 25 feet from buildings, public ways, or lot lines of adjoining property.
- 4. Tank Security.** Tank has a method of locking and securing the operational valves.
- 5. Signs.** No smoking signs are posted on the tank. Sign to read, "NO SMOKING WITHIN 15 FEET".
- 6. Combustible Materials.** Weeds, grass, bush, trash and other combustible materials are kept a minimum of 10 feet away from LPG tanks.



7. **Bollards.** If exposed to vehicular damage due to proximity to alleys, driveways or parking areas, LPG tanks, regulators and piping shall be protected by bollards constructed of steel, not less than 4 inches in diameter, filled with concrete. Posts are to be spaced not more than 4 feet apart, set not less than 3 feet deep in a concrete footing of not less than a 15-inch diameter. The top of the posts is not to be less than 3 feet above the ground, and located not less than 3 feet from the tank. Other means of tank protection if approved may consist of landscape type boulders, cement walls, etc.
8. **Underneath Buildings.** LPG cylinders cannot be installed underneath any building.
9. **Painting.** The LPG tank shall be painted and marked to identify its content. The tank is to have a light color to prevent heat absorption. White, silver, etc. is acceptable.
10. **Power Lines.** The LPG tanks and any of its parts, shall not be located within 6 feet of a vertical plane beneath overhead electric power lines that are over 600 volts.
11. **Installation Foundation.** Tanks shall be installed upon a firm foundation or be otherwise firmly secured. Recommended is a 4-inch thick concrete pad with a minimum ½-inch x 6-inch grade 8 galvanized bolts.
12. **Emergency Shutoff Valves.** Compressed gas systems conveying flammable gases shall be provided with approved manual or automatic emergency shutoff valves that can be activated at each point of use and at each source.

### Aboveground LPG Tank Inspection Checklist

- Plans are submitted and approved showing tank placement.
- Tank does not exceed 2,000 gallons water capacity.
- Tank installed by a Utah Fire Marshals Office, licensed and certified company.
- Permit for tank installation on site.
- Tank must be ASME approved as indicated on the tank.
- Tank is located per IFC Table 3804.3.
- Tank has a method of locking and securing the operational valves.
- No smoking signs are posted on the tank.
- Weeds, grass, trash and other combustibles are kept a minimum of 10 feet away from the tank.
- Bollards are installed if necessary to protect from vehicles.
- LPG cylinders cannot be installed underneath any building.
- The LPG tank shall be marked to identify its content.
- The LPG tank is not located under overhead power lines.
- Tanks shall be painted – white, tan, silver
- Tank is installed upon a firm foundation and/or is firmly secured.
- Shut off valve accessible.



### Aboveground Tank Setback Requirements

