

**Unified Fire Authority
Residential Underground
LPG
Tank Requirements**

The following information is to be used whenever residential underground propane tanks are installed. This information is to correlate with the International Fire Code and NFPA 58. Plans must be submitted and a permit secured prior to any underground LPG tank installation exceeding 125 gallons with the exception of 500 gallon or small LPG tanks installed at R-3 occupancies (Residential).

Permit Required

105.6.27 LP-gas.

An operational permit is required for:

1. Storage and use of LP-gas.

Exception: A permit is not required for individual containers with a 500-gallon (1893 L) water capacity or less serving occupancies in Group R-3 (Residential).

2. Operation of cargo tankers that transport LP-gas.

Underground LPG Tanks

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

IFC 3804.2 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. IFC 3804, 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. Shut off Valves

A readily accessible shutoff valve shall be located at the tank, at the upstream side of the secondary regulator prior to entering the building and at each appliance.

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. (Must be approved prior to installation)
- 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.