

Liquid Petroleum Gas Service to Mobile Homes Indiana Interpretation of 410 IAC 6-6-10: Gas Facilities

Indiana State Department of Health Rule 410 IAC 6-6-10 requires all components of a gas supply to a mobile home be protected by proper location or other means of support. This section also requires gas service to be installed in a safe condition. Since specific requirements are not detailed in the rule, the purpose of this document is to provide guidance in determining if liquefied petroleum (LP) gas installations meet the objective of the rule. These LP Gas systems must meet requirements of The Code of Federal Regulations, Parts 191 and 192 of 49 CFR, Part 3285.904 of 24 CFR, and Indiana Fuel Gas Code 675 IAC 25-3.

Propane containers

There are two types of propane containers, ASME Containers that are filled on site and Department of Transportation (DOT) containers which are filled off site and transported to their point of use or are filled onsite.

Dot Containers

Containers or DOT Cylinders up to 125 Water gallon capacities must meet the following criteria:

1. Propane containers (up to 125 water gallon capacity) can be placed against the home and can have up to four containers in series.
 - a. Must maintain horizontal distances from exterior ignition sources, ventilation openings, and openings to direct-vent appliances. DOT specification containers shall be located and installed so that the discharge from the container pressure relief device is at least 3 feet horizontally away from any building opening that is below the level of such discharge, and shall not be beneath any building unless this 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 not less than 5 feet in any direction away from any exterior source of ignition, openings into direct-vent (sealed combustion systems) appliances, or mechanical ventilation air intakes. **NOTE: Window or central air conditioners are identified by NFPA 58 as sources of ignition. The pressure relief discharge cannot be above the bottom of any window within three (3) horizontal feet of the pressure relief discharge.**
 - b. Cannot be placed under any part of structure that would prevent disbursement of propane gas into the air through safety release valve.
 - c. If the DOT cylinder is filled on site from a bulk truck, the filling connection and vent valve must be at least 10 feet from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes. **NOTE: Window or central air conditioners are identified by NFPA 58 as sources of ignition. The pressure relief discharge cannot be above the bottom of any window within three (3) horizontal feet of the pressure relief discharge.**
2. Propane containers (cylinders) must be supported, secured and placed on a stable concrete base.
3. Containers (Cylinders) showing serious denting, bulging gouging, or excessive corrosion shall be removed from service
4. Fire damaged propane containers (cylinders) must be inspected and certified to reuse or tank is condemned and all container appurtenances shall be replaced (XXX marking = condemned tank or tank will be tagged "condemned")

5. Twin stage regulators are required.

ASME Containers

These LP Gas systems are filled and maintained on site by qualified personnel. ASME tanks that are leased are maintained by the LP Gas Provider that owns the tank. ASME Containers that are owned by an individual are the individual owner's responsibility to maintain their tank.

ASME LP Gas Containers must meet the following criteria

1. Manual shut-off valves must be accessible to emergency responders
2. All propane containers showing serious denting, bulging gouging, or excessive corrosion shall be removed from service.
3. All propane containers must be placed on stable base constructed of concrete that protects it's base from corrosion
4. ASME Approved LP containers (under 125 water gallon capacity) can be placed against the home.
 - a. Must maintain horizontal distances from exterior ignition sources, ventilation openings, and openings to direct-vent appliances. ASME specification containers shall be located and installed so that the discharge from the container pressure relief device is at least 5 feet horizontally away from any building opening that is below the level of such discharge, and shall not be beneath any building unless this 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 not less than 10 feet in any direction away from any exterior source of ignition, openings into direct-vent (sealed combustion systems) appliances, or mechanical ventilation air intakes. **NOTE: Window or central air conditioners are identified by NFPA 58 as sources of ignition. The pressure relief discharge cannot be above the bottom of any window within 5 horizontal feet of the pressure relief discharge.**
 - b. Cannot be placed under any part of structure that would prevent disbursement of propane gas into the air through safety release valve.
 - c. If the ASME Approved LP container has a water gallon capacity of 125 – 500 gallons, the container must be located a minimum of 10 feet from any home. Containers of 501 - 2,000 gallon water capacity must be a minimum of 25 feet from a home.
 - d. Regardless of its size, any ASME tank filled on site must be located so that the filling connection and fixed liquid level gauge are at least 10 feet from any external source of ignition (i.e., open flame, window A/Cc, compressor, etc.) Intake to direct vented gas appliance or intake to a mechanical ventilation system.
5. All propane containers showing serious denting, bulging gouging, or excessive corrosion shall be removed from service.
6. All propane containers must be placed on stable base constructed of concrete that protects its base from corrosion.

Underground Containers of 2,000 gallons water capacity or less

1. The relief valve, filling connection, and liquid level gauge vent connection at the container must be at least 10 feet from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes.
2. No part of an underground container shall be less than 10 feet from a home, important building, or line of adjoining property that may be built upon.

3. Risers must be above grade with the vent above highest probable water level.
4. Only propane containers constructed and rated for burial may be buried.

Propane gas system regulators: High Pressure, Low Pressure, and Twin Stage

LP Gas Systems utilizing propane containers or DOT cylinders which are less than 125 water gallon capacity require only a **twin stage regulator**.

Second stage and twin stage regulators must be mounted in a secure manner that does not rely upon the piping system for support. The vent is screened and must be placed in a downward position. The vent must remain unobstructed. The relief discharge on any regulator must be installed with 5' minimum distance from any ignition source or mechanical air intake and 3' minimum distance from any building opening. The regulator requires a minimum of 18" of ground clearance and the bottom of the vent should be above expected snow level or in a location that is protected from weather.

Underground Piping

Gas piping shall not be used as a grounding electrode.

Per the International Fuel Gas Code, underground piping systems shall be installed a minimum depth of 12 inches below grade except individual lines to outside lights, grills or other appliances shall be installed a minimum of 8 inches below finished grade, provided that such installation is approved and is installed in locations not susceptible to physical damage. Piping shall not be laid in contact with cinders.

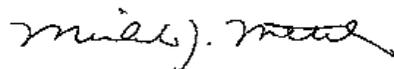
Per NFPA 58 2.4.2: Pipe shall be wrought iron or steel (black or galvanized), brass, copper or polyethylene and shall comply with the following:

1. Wrought-iron pipe – ASME B 36.10M, Welded and Seamless Wrought Steel Pipe.
2. Steel Pipe – ASTM A 106, Specification for Seamless Carbon Steel Pipe for High Temperature Service, Standard Sizes.
3. Brass Pipe – ASTM B 43, Specification for Seamless Red Brass Pipe, Standard Sizes.
4. Copper Pipe – ASTM B 42, Specification for Seamless Copper Pipe, Standard Sizes.
5. Polyethylene pipe – ASTM D 2513, Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings, and shall be recommended by the manufacturer for use with LP-Gas (Cast Iron piping shall not be used).

Per NFPA 58 2.4.3 Tubing shall be steel, brass, copper or polyethylene and shall comply with the following:

1. Steel Tubing – ASTM A 539, Specifications for Electric-Resistance-Welded Coiled Steel Tubing for gas Fuel Lines.
2. Brass Tubing ASTM B 135, Specification for Seamless Brass Tube.
3. Copper Tubing Type K or L – ASTM B 88, Specification for Seamless Copper Water Tube, ASTM B 280, Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service.
4. Polyethylene tubing – ASTM D 2513, Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fitting, and shall be recommended by the manufacturer for use with LP Gas.
5. Corrugated stainless steel tubing – ANSI/AGA LCI, Interior Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing.

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