



**DEPARTMENT OF COMMUNITY AFFAIRS**  
Division of Fire Safety  
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# BULLETIN: 2004-2

**Issue Date: August 1, 2004**

**SUBJECT: Liquefied Petroleum Gases**

**REFERENCE: N.J.A.C. 5:70-3.2 Chapter 36**

The Department is issuing this bulletin as an aid to local Fire Officials when enforcing the LP-Gas provisions of the Uniform Fire Code (UFC.) There are three types of LP-Gas systems that are regulated by the UFC. They are vapor withdraw systems, liquid transfer systems and cylinder exchange cabinets. Vapor withdraw systems are those systems where LP-Gas is distributed with a piping system that conveys LP-Gas in gaseous form to propane consuming appliances such as heating systems, water heaters, cooking appliances or industrial equipment. Liquid transfer systems are those systems where an LP-Gas tank is connected to a piping system that conveys liquid to containers such as barbecue cylinders. Exchange cabinets are installations where consumers drop off empty barbecue cylinders and exchange them for full cylinders.

## **Vapor Withdraw Systems**

The UFC classifies individual tanks with a capacity of over 1,000 gallons water capacity but not over 4,000 gallons water capacity and systems with an aggregate capacity of over 2,000 gallons but not over 4,000 gallons water capacity as life hazard use Bf. The UFC classifies LP-Gas systems with a capacity of over 4000 gallons water capacity as life hazard use Bh. These uses require annual inspection. The water capacity of a tank is the volume of the tank if it were filled with water. Because of pressure limitations and the need for surface area for vaporization, the propane capacity of a tank is less than the water capacity of a tank.

The following features should be inspected:

**Crash protection:** Any tank subject to impact from motor vehicles is required to have crash protection. (F-3605.4.1 and F-3605.4.2 as amended in the UFC)

**Sources of ignition:** Fill points and relief valve vents and vents from liquid level gauges are required to be at least ten feet away from sources of ignition. (F-3604.1.1.3)

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Building openings: Tanks must be located so that the discharge from relief valves is not closer than 10 feet from building openings and is not directed under a building. (F-3604.1.1.3)

Distance requirements: Tanks are required to meet distance requirements from buildings and lot lines in accordance with table F-3604.1. (F-3604.1)

Container marking: Containers over 125-gallon water capacity are required to be marked "flammable gas" followed by the name of the gas; i.e., "Propane," "Butane" etc. (F-3610.1 as amended in the UFC)

Area Signage: Appropriate "No Smoking" and "Flammable Gas" warning signs shall be posted. (F-3610.2 as amended in the UFC)

Groups of containers are not permitted to exceed 180,000 gallons aggregate capacity. Groups of containers must maintain the distance separation required by F-3605.2.

**Liquid Withdraw Systems**

The UFC classifies liquid withdraw systems as life hazard use Bb. These facilities, like those described above are required to be inspected once a year. Transfers of liquid from one truck to another truck are not permitted under the Liquefied Petroleum Gas rules (N.J.A.C. 5:18). Further, the Liquefied Petroleum Gas rules do not allow cargo tanks to be used as permanent storage facilities, therefore they are inappropriate for use as a cylinder filling facility. Such arrangements are not to be allowed under the Uniform Fire Code.

The following should be inspected:

Crash protection: Any tank subject to impact from motor vehicles is required to have crash protection. (F-3605.4.1 and F-3605.4.2 as amended in the UFC)

Sources of ignition: Fill points and relief valve vents and vents from liquid level gauges are required to be at least ten feet away from sources of ignition. (F-3604.1.1.3)

Building openings: Tanks must be located so that the discharge from relief valves in not closer than ten feet from building openings and is not directed under a building. (F-3604.1.1.3)

Distance requirements: Tanks are required to meet distance requirements from buildings and lot lines in accordance with table F-3604.1. (F-3604.1)

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Container marking: Containers over 125 gallon water capacity are required to be marked “flammable gas” followed by the name of the gas; i.e. “Propane,” “Butane” etc. (F-3610.1 as amended in the UFC)

Area Signage: Appropriate “No Smoking” and “Flammable Gas” warning signs shall be posted. (F-3610.2 as amended in the UFC)

Qualified personnel: Only qualified personnel are permitted to fill propane cylinders. The facility shall have a record of which employees have been trained. (F-3609.1 and NFPA 58-95)

Inside buildings: Propane cylinders shall not be permitted inside buildings. See F-3606.1 for exceptions for cylinders used for temporary demonstrations, industrial and temporary installations and storage awaiting resale that is in accordance with chapter 5 of NFPA 58. (F-3606.3)

**Exchange Cabinets and Cabinets for Cylinders Awaiting Use on Industrial Trucks**

The following shall be inspected:

Crash protection: Any tank subject to impact from motor vehicles is required to have crash protection. (F-3605.4.1 and F-3605.4.2 as amended in the UFC)

Cylinder storage: Ensure that empty and full containers are stored in an upright position. (F-3605.3) At locations open to the public, containers shall be stored in an approved non-combustible enclosure or a lockable, ventilated, non-combustible locker or rack. (F-3605.4)

Distance from building openings: Ensure that the non-combustible storage cabinet is set outdoors on a secure non-combustible base located a minimum of 20 feet from any building opening, 20 feet from a motor vehicle fuel dispenser and ten feet from combustible material. (F-3605.6 as amended in the UFC)

Distances from buildings and lot lines: Ensure that the cabinet is located a minimum distance from lot lines and buildings in accordance with table F-3605.6 found in the UFC amendments to the BOCA Fire Prevention Code. (Table F-3605.6 as amended in the UFC)

Area Signage: Appropriate “No Smoking” and “Flammable Gas” warning signs shall be posted. (F-3610.2 as amended in the UFC)

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Inside buildings: Propane cylinders shall not be permitted inside buildings. See F-3606.1 for exceptions for cylinders used for temporary demonstrations, industrial and temporary installations and storage awaiting resale that is in accordance with chapter 5 of NFPA 58. (F-3606.3) In industrial and storage facilities, a maximum of 7-40lb cylinders may be stored indoors.