

TECHNICAL BULLETIN

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T o p i c: LP-Gas for Residential use

This Technical Bulletin is provided as general information for code enforcement officials, vendors, and end users regarding the use, handling, and storage of portable liquified petroleum gas containers (i.e. Propane) for residential use. The information provided herein is based on Chapters 3 and 38 of the *Fire Code of New York State, 2002 edition* (FCNYS)[19 NYCRR 1225.1], a publication within the Uniform Fire Prevention and Building Code.

For the purposes of this bulletin, the term “LPG” shall be used to describe liquified petroleum gas, including ‘propane.’ All measurements given will be the water capacity, in pounds (lb.) with the nominal weight of LPG, in pounds, in parentheses. For those unfamiliar with LPG container designations, it should be noted that the typical container used with gas grills is referred to as a 20 lb. cylinder; it has a water capacity of 48 lbs. and holds approximately 5 gallons of LPG.

Can open-flame cooking devices, such as LPG-fueled grills and charcoal burners be used on decks or close to the building?

For all occupancies, including one- and two-family dwellings, there are minimal restrictions in the FCNYS. Where portable cylinders are mounted directly on LP-gas fueled grills, the grill must be used and stored at least 3 feet horizontally from any building openings below the level of the pressure relief valve on the cylinder. The cylinder can only be stored under a roofed enclosure, such as a porch, if it is open for at least 50 percent of its perimeter and is well-ventilated. In addition, the discharge from the pressure relief valve must be at least 5 feet from sources of ignition, ventilation intakes, and air intakes for direct-vent appliances [FCNYS table 3804.3, footnote e]. Under no circumstances is the cylinder permitted to be stored indoors [FCNYS 3803.2.1].

For all occupancies other than one- and two-family dwellings, the regulations are more restrictive for combustible buildings and combustible balconies or decks. Regardless of the fuel type, open flame cooking devices are not permitted to be used on combustible balconies or within 10 feet of combustible construction [FCNYS 307.5]. If the balconies, decks and buildings are protected by an automatic sprinkler system, LP-gas grills are still not permitted, but other open-flame cooking devices are allowed within the 10 feet.

For uses other than one- and two-family dwellings, and for non-combustible buildings and non-combustible balconies, there are still restrictions on LP gas cylinders for multi-family residential occupancies. Cylinders having a capacity greater than 2½ lb. (1 lb. LPG) are not permitted to be used or stored on balconies.

Are LPG tanks used for cooking devices allowed to be stored on their side or upside-down, even when they are ‘empty’?

No, unless the tank is constructed to allow the vapor space to be in contact with the pressure relief valve when stored in other than the upright position [FCNYS 3809.3]. A LPG tank is only filled to a maximum of 80% of its capacity. The remaining space is vapor, under pressure, that changes based on the temperature of the liquid. If the vapor pressure becomes high enough, the pressure relief valve will begin to release LPG vapor into the atmosphere rather than subjecting the tank construction to forces over the design pressures of the tank. If the pressure relief valve is in contact with liquid, it will not operate properly and over-pressurize the tank. This is the condition created when LPG tanks, not designed to be stored or operated in this fashion, are stored upside-down or on their side.

As a Code Enforcement Official, can I require an existing LPG tank exchange storage rack to be moved or altered?

Yes. The storage of cylinders and containers awaiting use or resale is a “condition or use” and applies to existing conditions [FCNYS 102.2]. FCNYS 3809.12 and 13 have specific requirements for these storage configurations. Storage of LPG tanks shall be at least 20 feet away from building openings (doors, windows, etc.), 20 feet from motor vehicle fuel dispensers, 10 feet from combustible materials and meet the distance separation requirements in FCNYS Table 3809.12 for buildings, public ways, and lot lines. These storage racks shall also be protected against tampering and have vehicular impact protection approved by the local Code Enforcement Official. It should be noted that FCNYS Section 312 gives design criteria on vehicular impact protection that could be used as a guideline for enforcement in this regard.

LPG vendors are requiring Overfill Prevention Device (OPD) valves to be installed before they will fill or exchange customer tanks. Is this something the FCNYS requires?

Yes, but not for all LPG tanks. FCNYS 3801 states that storage, handling, and transportation of LPG shall be in accordance with this Code and NFPA 58, 1998 edition. Since NFPA 58 includes the specific requirements for the construction and use of LPG tanks, its provisions govern.

The 1998 edition of NFPA 58 added section 2-3.1.5, which is the requirement of OPD valves for portable LPG tanks between four (4) and forty (40) pounds that are used for vapor service. This does not apply to tanks used for industrial vehicles or machinery (forklifts, floor buffers, etc.). Section 2-3.1.5(c), which prohibits refilling of containers that do not have an OPD valve, became effective in New York State on January 1, 2003.

References

Fire Code of New York State, 2002 edition, International Code Council, Whittier, California

2000 International Fire Code Commentary, International Code Council, Whittier, California

LP-Gas Code Handbook (NFPA 58) Fifth Edition, 1998, National Fire Protection Association, Quincy, Massachusetts

***Ronald E. Piester, R.A., Director
Division of Code Enforcement and Administration***