



## Coffee Break Training - Fire Protection Series

### Hazardous Materials: Indoor Parking and Servicing of Liquefied Petroleum-Gas Transport Vehicles

No. FP-2013-14 April 2, 2013

**Learning Objective:** The student shall be able to describe the construction and operational requirements for indoor parking and servicing of LP-Gas transport vehicles when the vehicles are under the control of their owner.

When LP-Gas transport vehicles are parked or serviced in separate structures indoors by the owner/operator, the building must meet the construction requirements of National Fire Protection Association 58, *Liquefied Petroleum Gas Code*. A “separate” structure is one that is not attached to any other buildings or structures on the site.

Separate buildings or structures are limited to a single story in height and are required to have noncombustible walls, floors, ceilings and roofs. The exterior walls and ceilings should be made of lightweight material designed for explosion venting, or, if they are made of heavy construction materials such as solid brick masonry, concrete block, or reinforced concrete construction, they should be equipped with explosion venting windows that have an explosion venting area of at least 1 foot<sup>2</sup> (0.1 meter<sup>2</sup>) for each 50 feet<sup>3</sup> (1.4 m<sup>3</sup>) of the structure’s enclosed volume.

The floor of separate structures should not be below ground level. Due to the fact that LP-Gas vapors are heavier than air and will settle if released from a container, any space beneath the floor should be solidly filled or have a perimeter that is entirely unenclosed to allow ventilation.

The structure should be ventilated using air inlets and outlets with the lowest part of the vent located not more than 6 inches (150 millimeters) above the floor. Ventilation should be provided in accordance with the following:

- Where mechanical ventilation is used, the rate of air circulation should be at least 1 foot<sup>3</sup>/min·foot<sup>2</sup> (0.3 m<sup>3</sup>/min·m<sup>2</sup>) of floor area.
- Outlets should discharge at least 5 feet (1.5 m) from any opening into the structure or any other structure.
- Where natural ventilation is used, each exterior wall should be provided with one opening for each 20 feet (6.1 m) of length.
- Each opening should have a minimum size of 50 inches<sup>2</sup> (32,250 mm<sup>2</sup>), and the total of all openings should be at least 1 inch<sup>2</sup>/foot<sup>2</sup> (6,900 mm<sup>2</sup>/m<sup>2</sup>) of floor area.

If the structure is used for storage only, natural ventilation is usually adequate. Mechanical ventilation is more reliable than natural ventilation and is preferred for buildings where liquid LP-Gas transfer occurs.

For more information, refer to NFPA 58, *Liquefied Petroleum Gas Code*.



Separate structures used for indoor parking and servicing of LP-Gas transport vehicles by owner/operators must meet certain construction criteria.

