

U.S. Fire Administration / National Fire Academy

Coffee Break Training

Topic: Bulk LP Gas Container Protection

Learning objective: The student shall be able to list five recognized methods for protecting bulk liquefied petroleum gas cylinders from exposure fires.

When single or multiple bulk LP Gas storage containers exceed 4,000 aggregate gallons (water capacity) at a single site, the fire codes require special fire protection features to protect the tanks from exposure fires.

The Liquefied Petroleum Gas Code (NFPA 58) outlines five methods for protecting bulk facilities:

1. **Insulation** is a method of protecting the tank with a material that is capable of limiting the container temperature to 800 °F for at least 50 minutes. NFPA 58 appendices describe the insulation fire test criteria.
2. **Mounding** is means of covering the cylinder by at least 1 foot of earth, sand, or other noncombustible, noncorrosive material such as vermiculite or perlite.
3. **Burial** requires placing the cylinders at least 6 inches below the ground.
4. **Water Spray** (below) is an automatic system capable of delivering densities of at least 0.25 gallons per minute over all of the tank surfaces. It is similar to an automatic sprinkler system.
5. **Monitor Nozzles** (master streams) must be operated automatically and located to wet any part of the tank area that may be subjected to an exposure fire.



The “most suitable” fire protection method usually is selected following a thorough fire safety analysis by a qualified person.

For additional information, refer to International Fire Code[®], Chapter 38; or NFPA 1, Uniform Fire Code[™], Chapter 69; NFPA 58, Liquefied Petroleum Gas Code; and NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection.