

Storage, Use and Handling of Gasoline and Diesel Fuel

Improper storage, use and handling of flammable and combustible liquids such as gasoline and diesel can result in fires or explosions. Accidental spills can also result in ground contamination. Guidelines which outline the proper storage, use and handling of flammable liquids such as gasoline and diesel fuel can be found in National Fire Protection Association (NFPA) Standard 30 – Flammable and Combustible Liquids Code.

Gasoline has a flashpoint at -45 degrees Fahrenheit. The flashpoint is the lowest temperature at which a flammable liquid gives off enough vapors to form an ignitable mixture with air. A fire or explosion will likely occur if exposed to a source of ignition. Diesel fuels typically have a flashpoint above 140 degrees Fahrenheit so they are not as easily ignitable but are still considered a fire hazard.

Flammable liquids such as these are normally stored in smaller, portable containers or in larger aboveground and underground tanks.

Flammable and combustible liquids containers

The best method to store small quantities of flammable and combustible liquids such as gasoline or diesel fuel is in approved safety cans. These types of cans have several safety features that are not present in plastic gas cans or other unapproved containers such as glass jars. Safety cans are designed with a sturdier base and have tight-fitting, self-closing lids so they are less likely to tip over and leak. They have a flash arrestor screen which prevents any flashback of fire into the can. The cans also have automatic vents which help relieve any internal pressures that could result in the rupture of the can in the event of a fire.

There are many varieties of safety cans available. There are color-coded varieties that can be used specifically for gasoline, diesel and kerosene. For additional safety, the safety can should be labeled

as to its contents.

When filling a safety can, the can should be placed on the ground and not in the back of a pickup truck with a plastic bed

liner or in a vehicle with a carpeted surface. Static electricity can build-up and a discharge of this build-up can result in a spark that could ignite the vapors and result in a fire or explosion. Before refilling, touch the dispenser nozzle to the container to dissipate any static charge. Keep part of the nozzle in contact with the container inlet during the entire refilling process.

Flammable liquids should not be stored inside a home, especially the basement. Flammable liquid vapors are heavier than air and will accumulate at ground or floor level. Water heaters, furnaces, clothes dryers and other types of appliances could easily ignite the vapors which could escape from a storage container. If more than 25 gallons of flammable or combustible liquids are used, then the containers should be stored in a flammable liquids storage cabinet (even if safety cans are used).

Aboveground storage tanks

Aboveground storage tanks for gasoline and diesel fuel shall be located at least 40 feet from any building. Tanks designed and intended for aboveground use shall not be used as underground tanks. Tanks shall rest on firm, level ground or on foundations made of concrete, masonry, piling or steel. Tanks shall be designed and built in accordance with recognized engineering standards for the material



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of construction being used. The minimum separation distance from a gasoline storage tank to an LP-Gas container shall be 20 feet.

Tank supports shall be designed and constructed in accordance with recognized engineering standards. They shall be made of concrete, masonry or steel protected against corrosion. The tanks shall be supported in such a manner that prevents excessive concentration of loads on the supported portion of the shell. In areas subject to earthquakes, tank supports and connections shall be designed to resist damage as a result of such shocks. Tanks should be protected against damage from a motor vehicle by use of collision barriers.

The outdoor storage area shall be protected against tampering or trespassers. Areas around gasoline tanks should be kept free of weeds, trash or other unnecessary combustible materials. Storage tanks shall be marked as to their contents and the nature of the fire hazard. "No Smoking" signs shall be posted in the vicinity.



Storage tanks and their accessories shall be inspected and maintained according to manufacturer's guidelines or applicable standards. Every aboveground tank shall have an emergency relief venting device to relieve excessive internal pressure caused by an exposure fire.

To prevent against accidental spills, single-wall tanks shall be protected by a diking system designed to hold the contents of the tank plus 10%. That would be 110% of the total tank capacity. An alternative to a diking system would be the use of a double-wall tank.

A diking system can be constructed from earth, steel, concrete or solid masonry. The system must be liquid-tight. Any diking system containing two or more tanks shall be subdivided. Where provision is made for draining water from diked areas, such drains shall be controlled to prevent liquids from entering natural water courses, public sewers or public drains.

Spacing between adjacent double-wall tanks shall not be closer than three feet.

Underground Storage Tanks

Underground storage tanks shall be a minimum distance of one foot from building foundations and three feet from property lines. Tanks designed and intended for underground use shall not be used as aboveground tanks.

Underground tanks and their piping shall be protected against corrosion by a cathodic protection system or by use of approved or listed corrosion-resistant materials or systems. The type of system used shall be judged by the corrosion history of the area and the judgment of a qualified engineer.

Tank venting systems shall be provided with sufficient capacity to prevent blowback of vapor or liquid at the fill opening while the tank is being filled. Vent piping shall not be less than 1.25 inches inside diameter and should extend 12 feet above grade level to vent vapors away from sources of ignition. Vent outlets shall be located a minimum of five feet from any building opening to prevent flammable vapors from finding a source of ignition inside the building.

Additional Safety Requirements

A written emergency action plan (EAP) should be developed in order to respond to fires or other emergencies, such as an accidental spill. Employees should be trained on how to carry out their assigned responsibilities in the EAP.

Do not refuel equipment while it is hot. Allow it to cool for a few minutes. No smoking is allowed when refueling.

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