

KANSAS STATE FIRE MARSHAL'S OFFICE

FIRE PREVENTION DIVISION
ABOVEGROUND TANK PROGRAM
700 SW JACKSON SUITE 600
TOPEKA, KANSAS 66603-3714
785-296-3401



Summary of Aboveground Storage Tank
Requirement & Regulations
For Flammable/Combustible Liquids

STORAGE

All flammable and combustible liquids shall be stored in approved portable containers or aboveground or underground tanks. These containers shall be approved for such use and listed by Underwriters Laboratories (UL).

Tank Configuration

Aboveground storage tanks may be either verticle or horizontal, and located on the ground, elevated, or in vaults, above or below ground. All aboveground storage tanks of 660 gallons or more capacity in industrial, business or governmental facilities, tanks of 1,100 gallons or more on any agricultural farm installation or any tank installed for retail sale of flammable or combustible liquids must set on a firm foundation, typically a concrete slab. Elevated tanks higher than 12 inches above the foundation must have a minimum fire rating of two hours and be constructed of concrete, masonry, or protected steel.

Aboveground tanks must be constructed to the UL 142 standard. Tanks designed for underground use may not be used for aboveground unless their suitability for aboveground use is confirmed by the manufacturer. Tanks may be designed as a single wall unit which will require a secondary containment area, as a single wall unit with a steel secondary containment area, or as a multi-wall unit constructed of composites of steel, plastic, and concrete. The space between the walls may be filled with concrete or other fire-retardant materials or be open to permit interstitial monitoring. Tanks without an open interstice are considered single-wall.

Tank Openings

Tank openings are required for product inlet, outlet, venting and level measurement. All tanks shall be outfitted with an appropriate sized emergency vent, a working or pressure vent to 12 feet above grade level, a securable block valve, and a fire valve (see Figure 1). A fire valve shall be installed at any tank opening through which stored product could flow by gravity.

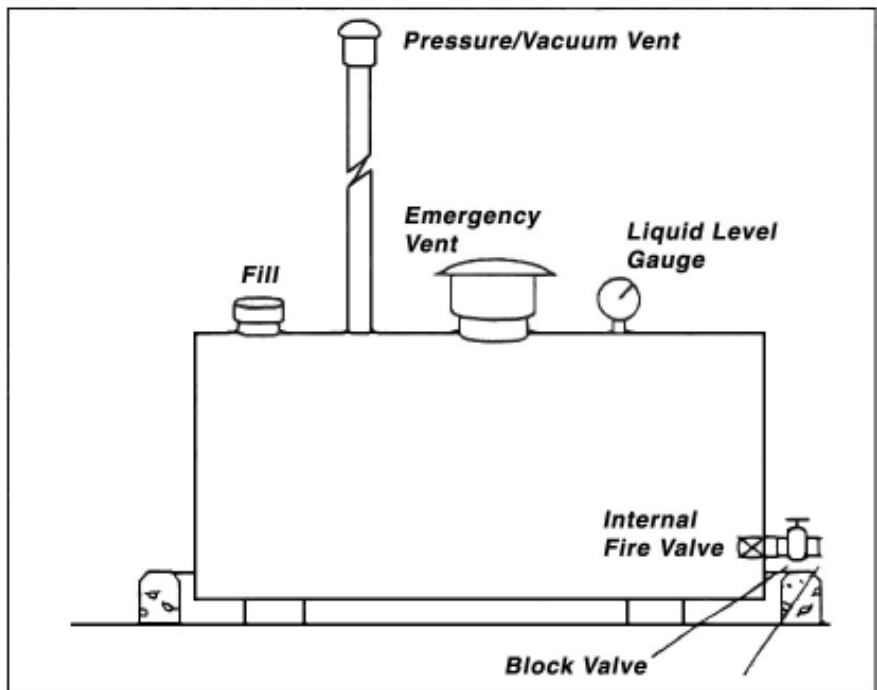


Figure 1 Tank Openings

Fire Valves

Fire valves may be internal or external to the tank and must have a fusible link as shown in Figure 2 at the right.

Dikes

Dikes shall be provided with an impervious barrier to contain any spills, leaks or failure of the tank. The containment shall be at least 110 percent of the largest tank within the diked area after deducting the volume of other tanks below the height of the dike wall.

Tank Spacing

To allow passage between tanks for inspection, a minimum spacing equivalent to 1/6 of the sum of the adjacent tank diameters, but not less than three feet, is required. Additional space is required for dikes, fencing and to provide access to valves, piping, pumps and controls.

Tank Location

Aboveground tanks will occupy a substantial space and restrict the use of the site for other activities. Generally, a site at the rear of the facility, clear of traffic and service areas is most desirable. Requirements of adopted National Fire Protection Association pamphlet 30 Flammable and Combustible Liquids Code 1990 edition and National Fire Protection Association pamphlet 30A Automotive and Marine Service Station code

establishes the minimum distances from property lines, dispensers, buildings, and transfer points restrict where tanks may be located.

Other restrictions may include any set back requirements by the Kansas Department of Transportation, codes or ordinances adopted by the local city or county and planning or zoning commissions.

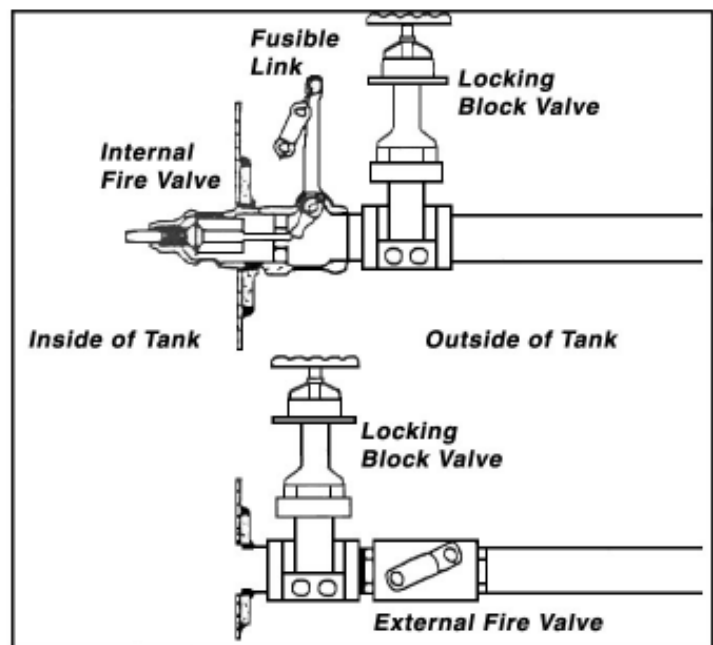


Figure 2 Fire Valves

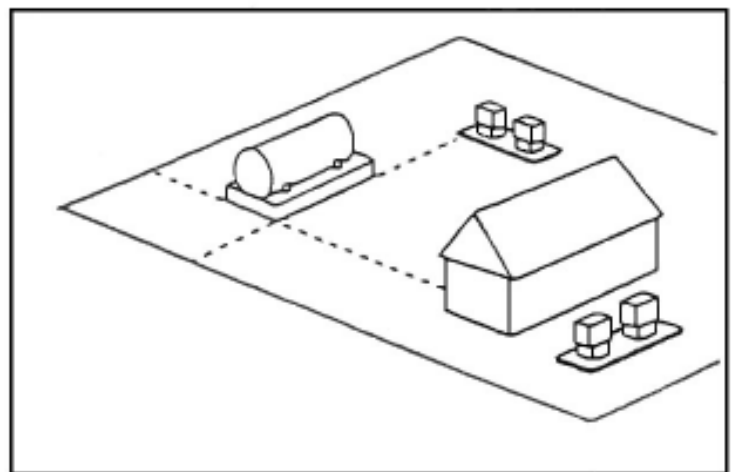


Figure 3 Tank Location