



Utah County Fire Marshal

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Aboveground Fuel Tank Requirements

Regulating storage and dispensing of flammable and combustible liquids on farms and constructions sites.

Permits are required for tanks used for storage, handling or dispensing of flammable and combustible liquids on farms and construction sites and which have a storage capacity > 10 gallons of Class I liquids or > 60 gallons of Class II or III-A liquids.

When applying for an above-ground fuel tank permit, a plot plan showing the location of the tank(s) should be attached to the application. This plot plan should show property lines, existing structures, roads and waterways. A permit must be obtained prior to any above ground fuel tank installation. All fees for such permits must be paid in advance.

The following information correlates with the NFPA 30 and Chapter 57 of the International Fire Code and is to be considered whenever above ground fuel tanks are installed in unincorporated Utah County:

Storage and dispensing of flammable and combustible liquids on farms and construction sites. Permanent and temporary storage and dispensing of Class I and II liquids for private use on farms and rural areas and at construction sites, earth-moving projects, gravel pits or borrow pits shall be in accordance with Sections 5706.2.1 through 5706.2.8.1.

Exception: Storage and use of fuel oil and containers connected with oil-burning equipment regulated by Section 603 and the *International Mechanical Code*.

Combustibles and open flames near tanks. Storage areas shall be kept free from weeds and extraneous combustible material. Open flames and smoking are prohibited in flammable or combustible liquid storage areas.

Marking of tanks and containers. Tanks and containers for the storage of liquids above ground shall be conspicuously marked with the name of the product which they contain and the words: FLAMMABLE—KEEP FIRE AND FLAME AWAY. Tanks shall bear the additional marking: KEEP 50 FEET FROM BUILDINGS.

Containers for storage and use. Metal containers used for storage of Class I or II liquids shall be in accordance with DOT requirements or shall be of an approved design. Discharge devices shall be of a type that do not develop an internal pressure on the container. Pumping devices or approved self-closing faucets used for dispensing liquids shall not leak and shall be well-maintained. Individual containers shall not be inter-connected and shall be kept closed when not in use. Containers stored outside of buildings shall be in accordance with Section 3404 and the *International Building Code*.

Permanent and temporary tanks. The capacity of permanent above-ground tanks containing Class I or II liquids shall not exceed 1,100 gallons. The capacity of temporary above-ground tanks containing Class I or II liquids shall not exceed 10,000 gallons. Tanks shall be of the single-compartment design.

Exception: Permanent above-ground tanks of greater capacity which meet the requirements of Section 5704.2.

Fill-opening security. Fill openings shall be equipped with a locking closure device. Fill openings shall be separate from vent openings.

Vents. Tanks shall be provided with a method of normal and emergency venting. Normal vents shall also be in accordance with Section 5704.2.7.3 (see "References"). Emergency vents shall be in accordance with Section 5704.2.7.4 (see "References"). Emergency vents shall be arranged to discharge in a manner which prevents localized overheating or flame impingement on any part of the tank in the event that vapors from such vents are ignited.

Location. Tanks containing Class I or II liquids shall be kept outside and at least 50 feet from buildings and combustible storage. Additional distance shall be provided when necessary to ensure that vehicles, equipment and containers being filled directly from such tanks will not be less than 50 feet from structures, haystacks or other combustible storage.

Locations where above-ground tanks are prohibited. The storage of Class I and II liquids in above-ground tanks is prohibited within the limits established by law as the limits of districts in which such storage is prohibited.

Type of tank. Tanks shall be provided with top openings only or shall be elevated for gravity discharge.

Tanks with top openings only. Tanks with top openings shall be mounted as follows: 1. On well-constructed metal legs connected to shoes or runners designed so that the tank is stabilized and the entire tank and its supports can be moved as a unit; or 2. For stationary tanks, on a stable base of timbers or blocks approximately 6 inches in height which prevents the tank from contacting the ground.

5706.2.5.1.1 Pumps and fittings. Tanks with top openings only shall be equipped with a tightly and permanently attached, approved pumping device having an approved hose of sufficient length for filling vehicles, equipment or containers to be served from the tank. Either the pump or the hose shall be equipped with a padlock to its hanger to prevent tampering. An effective anti-siphoning device shall be included in the pump discharge unless a self-closing nozzle is provided. Siphons or internal pressure discharge devices shall not be used.

Tanks for gravity discharge. Tanks with a connection in the bottom or the end for gravity-dispensing liquids shall be mounted and equipped as follows: 1. Supports to elevate the tank for gravity discharge shall be designed to carry all required loads and provide stability. 2. Bottom or end openings for gravity discharge shall be equipped with a valve located adjacent to the tank shell which will close automatically in the event of fire through the operation of an effective heat-activated releasing device. Where this valve cannot be operated manually, it shall be supplemented by a second, manually operated valve. The gravity discharge outlet shall be provided with an approved hose equipped with a self-closing valve at the discharge end of a type that can be padlocked to its hanger.

Spill control drainage control and diking. Indoor storage and dispensing areas shall be provided with spill control and drainage control as set forth in Section 5703.4. Outdoor storage areas shall be provided with drainage control or diking as set forth in Section 5704.2.10. (See References).

Portable fire extinguishers. Portable fire extinguishers with a minimum rating of 20-B:C and complying with Section 906 shall be provided where required by the fire code official.

Dispensing from tank vehicles. Where approved, liquids used as fuels are allowed to be transferred from tank vehicles into the tanks of motor vehicles or special equipment, provided: 1. The tank vehicle's specific function is that of supplying fuel to motor vehicle fuel tanks. 2. The dispensing hose does not exceed 100 feet in length. 3. The dispensing nozzle is an approved type. 4. The dispensing hose is properly placed on an approved reel or in a compartment provided before the tank vehicle is moved. 5. Signs prohibiting smoking or open flames within 25 feet of the vehicle or the point of refueling are prominently posted on the tank vehicle. 6. Electrical devices and wiring in areas where fuel dispensing is conducted are in accordance with the ICC *Electrical Code*. 7. Tank vehicle-dispensing equipment is operated only by designated personnel who are trained to handle and dispense motor fuels. 8. Provisions are made for controlling and mitigating unauthorized discharges.

Location. Dispensing from tank vehicles shall be conducted at least 50 feet from structures or combustible storage.

References:

Tank vents for normal venting. Tank vents for normal venting shall be installed and maintained in accordance with Sections 5704.2.7.3.1 through 5704.2.7.3.6.

Vent lines. Vent lines from tanks shall not be used for purposes other than venting unless approved.

Vent-line flame arresters and venting devices. Vent-line flame arresters and venting devices shall be installed in accordance with their listings. Use of flame arresters in piping systems shall be in accordance with API 2028.

Vent pipe outlets. Vent pipe outlets for tanks storing class I, II or III-A liquids shall be located such that the vapors are released at a safe point outside of buildings and not less than 12 feet above the adjacent ground level. Vapors shall be discharged upward or horizontally away from adjacent walls to assist in vapor dispersion. Vent outlets shall be located such that flammable vapors will not be trapped by eaves or other obstructions and shall be at least 5 feet from building openings or lot lines of properties that can be built upon. Vent outlets on atmospheric tanks storing Class III-B liquids are allowed to discharge inside a building if the vent is a normally closed vent.

Installation of vent piping. Vent piping shall be designed, sized, constructed and installed in accordance with Section 5703.6. Vent pipes shall be installed such that they will drain toward the tank without sags or traps in which liquid can collect. Vent pipes shall be installed in such a manner so as not to be subject to physical damage or vibration.

Manifolding. Tank vent piping shall not be manifolded unless required for special purposes such as vapor recovery, vapor conservation or air pollution control.

5704.2.7.3.5.1 Above-ground tanks. For above-ground tanks, manifolded vent pipes shall be adequately sized to prevent system pressure limits from being exceeded when manifolded tanks are subject to the same fire exposure.

5704.2.7.3.5.3 Tanks storing Class I liquids. Vent piping for tanks storing Class I liquids shall not be manifolded with vent piping for tanks storing Class II and III liquids unless positive means are provided to prevent the vapors from Class I liquids from entering tanks storing Class II and III liquids, to prevent contamination and possible change in classification of less volatile liquid.

5704.2.7.3.6 Tank venting for tanks and pressure vessels storing Class I-B and I-C liquids. Tanks and pressure vessels storing Class I-B and I-C liquids shall be equipped with venting devices which shall be normally closed except when venting under pressure or vacuum conditions, or with listed flame arresters. The vents shall be installed and maintained in accordance with Section 4.2.5.1 of NFPA or API 2000.

5704.2.7.4 Emergency venting. Stationary, above-ground tanks shall be equipped with additional venting that will relieve excessive internal pressure caused by exposure to fires. Emergency vents for Class I, II and III-A liquids shall not discharge inside buildings. The venting shall be installed and maintained in accordance with Section 4.2.5.2 of NFPA 30.

Exception: Tanks larger than 12,000 gallons in capacity storing Class III-B liquids which are not within the diked area or the drainage path of Class I or II liquids do not require emergency relief.

Drainage and diking. The area surrounding a tank or group of tanks shall be provided with drainage control or shall be diked to prevent accidental discharge of liquid from endangering adjacent tanks, adjoining property or reaching waterways.

Exceptions:

1. The fire code official is authorized to alter or waive these requirements based on a technical report which demonstrates that such tank or group of tanks does not constitute a hazard to other tanks, waterways or adjoining property, after consideration of special features such as topographical conditions, nature of occupancy and proximity to buildings on the same or adjacent property, capacity, and construction of proposed tanks and character of liquids to be stored, and nature and quantity of private and public fire protection provided.
2. Drainage control and diking is not required for listed secondary containment tanks.

Volumetric capacity. The volumetric capacity of the diked area shall not be less than the greatest amount of liquid that can be released from the largest tank within the diked area. The capacity of the diked area enclosing more than one tank shall be calculated by deducting the volume of the tanks other than the largest tank below the height of the dike.

Diked areas containing two or more tanks. Diked areas containing two or more tanks shall be subdivided in accordance with NFPA 30.

Protection of piping from exposure fires. Piping shall not pass through adjacent diked areas or impounding basins, unless provided with a sealed sleeve or otherwise protected from exposure to fire.

Combustible materials in diked areas. Diked areas shall be kept free from combustible

materials, drums and barrels.

Equipment, controls and piping in diked areas. Pumps, manifolds and fire protection equipment or controls shall not be located within diked areas or drainage basins or in a location where such equipment and controls would be endangered by fire in the diked area or drainage basin. Piping above ground shall be minimized and located as close as practical to the shell of the tank in diked areas or drainage basins.

Exceptions:

1. Pumps, manifolds and piping integral to the tanks or equipment being served which is protected by intermediate diking, berms, drainage or fire protection such as water spray, monitors or resistive coating.
2. Fire protection equipment or controls which are appurtenances to the tanks or equipment being protected, such as foam chambers or foam piping and water or foam monitors and hydrants, or hand and wheeled extinguishers.