

# **REFERENCE MANUAL**

## **Flammable/Combustible Liquids Permit Requirements**



### **Front Range Fire Rescue Life Safety Section**

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## **Summary Information**

This document has been developed to assist local business and industry to achieve compliance with the various aspects of the Front Range Fire Rescue (FRFR) Life Safety Section's Hazardous Materials Management Program (HMMP) as they pertain to above-ground storage tanks (ASTs) and underground storage tanks (USTs) for flammable and/or combustible liquids.

FRFR has adopted and enforces the International Fire Code (IFC), as amended, as the governing fire code for the entire FRFR response area, including the Town of Milliken, Town of Johnstown, and unincorporated Weld County. The IFC provides requirements for the prevention, control, and mitigation of dangerous and/or hazardous conditions related to hazardous materials.

### **Required Permits:**

- **Construction Permits** are required for new permanent installations that have the capacity to contain any hazardous material liquid, as defined in Chapter 1 of the adopted IFC. Once installation is complete, all permanent installations must maintain annual Operational Permits.
- **Temporary Permits** may be issued for installation and use of containers, tanks or systems for a time period not to exceed 90 days.
- **Operational Permits** must be maintained by the property owner in compliance with all conditions and restrictions included on the permit.

This document is not inclusive of all requirements for installation and/or operation of ASTs and/or USTs. All installation and operation must adhere to all applicable chapters and sections of the adopted 2012 IFC (e.g., Chapters 23, 50, 57), as well as the most current version of NFPA 30 and NFPA 30A.

A separate FRFR permit is required for removal of any AST and/or UST.

## **Plan Review Requirements**

All applications for installation and/or operation of ASTs and USTs for the storage of hazardous material liquids require an initial application procedure that must be followed by the individual property owner.

1. In general, storage of flammable and/or combustible liquids of 250 gallons or more require a hazardous materials permit from the FRFR Life Safety Section.
2. Prior to installation of any new AST or UST, the property owner/operator must comply with plan review processes of the Planning/Zoning and/or Building Department of the government entity with primary jurisdiction (e.g., Town of Milliken, Town of Johnstown, Weld County) as well as with plan review requirements of FRFR.

3. FRFR plan review requirements include:
  - a. Complete and accurate site plan with scale showing proposed AST and/or UST location(s) in relation to adjacent buildings, lots lines, etc, and
  - b. Locations of all fire suppression equipment that is required by the IFC, and
  - c. Engineering schematics and listing information for proposed AST/UST, and
  - d. All applicable structural, mechanical, and electrical requirements as specified by the manufacturer of the AST/UST, and
  - e. Description of the proposed use of the AST/UST, including applicable Safety Data Sheets (SDS) for the product(s) to be stored within the AST/UST, and
  - f. Hazardous materials management plans and inventory statements, and
  - g. Details of all signs/placards that are required by the IFC.

Installation or other work may not commence without prior approval from both the FRFR Life Safety Section and the appropriate local government.

Plan reviews and permits may be required by other jurisdictional entities such as the State of Colorado Division of Oil and Public Safety, state or county health departments, etc. It is the responsibility of the property owner/operator to obtain all other required permits prior to installation and operation.

### **Spill Control and Secondary Containment**

Overfill protection shall be provided for ASTs in accordance with Chapters 50 and 57 of the IFC. All outdoor tanks, vessels or containers which exceed 55 gallons individual capacity or 250 gallons aggregate capacity shall be provided with spill control and secondary containment, as defined and described in the IFC. The containment system shall be designed to contain a spill from the single largest container plus the volume of a 24-hour rainfall as determined by a 25-year storm. Provisions shall be made to drain accumulated water.

Drainage and diking are not required for tanks that have an integrated, listed method of secondary containment.

### **Tank Fill Openings**

Tank fill openings shall be provided with liquid-tight caps and shall be designed so that they may be locked. All tank fill openings shall be closed and locked when not in use. Tank fill openings shall be separate from vent openings.

## **Venting**

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 pipes shall not be less than ¼ inch nominal inside diameter. The capacity of the vent shall be based on the filling or withdrawal rate, whichever is greater, and the vent line length.

Vent pipes shall terminate outside of buildings at a point such that vapors are released not less than 12 feet above the adjacent ground level. Vent pipes may discharge either horizontally or vertically in order to disperse vapors and shall be arranged so that flammable vapors will not enter building openings, be trapped under eaves or other obstructions, or be discharged into potentially hazardous locations. Vent lines shall not terminate within 5 feet of openings into buildings or within 5 feet of property lines. Vent lines from tanks shall not be used for any other purpose.

## **Fire Protection**

A fire extinguisher with a minimum rating of 2-A:20-B,C shall be provided and located not more than 75 feet from any dispenser, pump, or tank fill opening.

## **Vehicle Impact Protection**

Protection from damage, such as from vehicular traffic, shall be provided for the tank and all appurtenant equipment. Physical barriers shall be constructed so as to resist a force of 12,000 pounds applied 36 inches above the ground surface. Minimum standards established in Chapter 3, Section 312 of the IFC include:

1. Guard posts constructed of steel not less than 4 inches in diameter and concrete filled
2. Guard posts spaced not more than 4 feet on center between posts
3. Guard posts set not less than 3 feet deep in a concrete footing of not less than a 15-inch diameter
4. Guard posts set with the top not less than 3 feet above ground
5. Guard posts located not less than 3 feet from the protected object

## **Dispensing Operations**

Dispensing operations are governed by NFPA 30A and Chapter 23 of the IFC. Dispensing operations must be situated within a designated spill control area. Dispensing of flammable and/or combustible liquids shall be accomplished only by means of an Underwriters' Laboratories listed pump or device.

**Emergency Stop Switch** – All ASTs and USTs shall include a clearly labeled, manually operated emergency pump shut-off switch. This switch shall be provided in an approved location no closer than 20 feet and no farther than 100 feet from the controlled dispenser. The switch shall be

clearly labeled “EMERGENCY PUMP SHUTOFF.” Where the shut-off switch is not directly visible from dispensers, its location shall be clearly indicated with approved signs. It is recommended that the emergency stop switch be connected to the facility’s burglar and/or fire alarm system to provide immediate notification of a fuel emergency.

Emergency Breakaway Device – Dispenser hoses for all ASTs and USTs for Class I and II liquids shall be equipped with a listed emergency breakaway device that is designed to retain liquid on both sides of a breakaway point. Such devices shall be installed and maintained in accordance with the manufacturer’s instructions.

### **Signs, Placards and Labels**

The tank shall be clearly marked on all visible/exposed sides to indicate its contents. If the tank is located behind a fence or other structure that prevents it from being readily visible from a distance of 100 feet along the normal route of vehicle travel, there shall be a placard placed on that fence or other structure at the point of vehicle entry. The placard shall conform to the requirements established in NFPA 704: Standard System for the Identification of the Fire Hazards of Materials.

### **Weather Protection**

A suitable structure, such as a roof, may be constructed to protect the facility from inclement weather. Design of this structure shall comply with the IFC and must be approved prior to construction by Front Range Fire Rescue and the Building Department with jurisdiction.

### **Control of Ignition Sources**

Open Flame – Smoking, open flames, or other ignition sources shall be prohibited within 25 feet of storage, use or dispensing areas. Legible signs with the words “NO SMOKING” shall be posted in conspicuous locations around storage, use and dispensing areas.

Electrical Devices – All electrical wiring and equipment shall be installed in accordance with the National Electrical Code, the 2012 International Electrical Code and the most current version of NFPA 30.

Electrical Controls – When an electric pump is used, a control shall be provided that will permit the pump to operate only when a dispensing nozzle is removed from its bracket or non-dispensing storage position and the switch on the dispensing unit is manually activated. The master switch, or the primary circuit breaker, for all pumps and dispensing devices shall be set in the “off” position at any time the dispenser is closed for use.

### **Annual Operational Permit Renewal**

Every hazardous materials operational permit shall be renewed every 12 months, upon submittal of the required permit application, permit fee, and completion of an inspection by a representative of FRFR. The FRFR inspector will verify the following information prior to approving the renewal of permit.

1. Current and updated Hazardous Materials Management Plan (HMMP) including a Hazardous Materials Inventory Statement (HMIS).
2. The AST/UST and all appurtenances shall be maintained in the same condition as when they were initially installed, as defined on the plan review submittal documents.
3. Safety Data Sheets (SDS) for all products stored within the AST/UST are available.