

**FREEPORT FIRE & EMS DEPARTMENT  
OFFICE OF THE FIRE MARSHAL**

# **ABOVEGROUND STORAGE TANKS FLAMMABLE LIQUIDS**

These guidelines are to be followed when an aboveground storage tank is relocated, modified or otherwise installed within the City of Freeport. This guide is to apply only to the installation, storage and/or use of flammable liquids, as defined by the 2015 International Fire Code.

**INSTALLATION REQUIREMENTS :**

1. The tank(s) shall be provided with secondary containment.
2. The tank(s) shall meet, or exceed UL 142, and the provisions of NFPA 30.
3. Tank(s) shall be constructed of steel. Poly-tanks shall not be permitted.
4. When the installation location may be subject to vehicular impact, bollards designed IAW IFC Section 312, or a UL 2085 tank may be required, based upon a review of the hazards and protection provided.
5. The tank must display the UL Listing placard.
6. Normal and emergency venting shall be provided. Emergency venting shall include the calculations to determine the minimum vent sizing in CFH.
7. Approved flame arrestors, when required by API 2028, and venting devices shall be installed in the all vent lines.
8. A leak detection system must be installed, equipped with on-site audible and/or visual warning devices, as approved by IFC 2015 and NFPA 30.
9. A spill container having a capacity of not less than 5 gallons shall be provided at each fill connection.
10. An overfill prevention system shall be provided for each tank to prevent being filled in excess of 95% capacity. The system must meet the requirements of IFC Section 5704.2.9.5 and/or 5704.2.9.7.3
  - a. Provide an independent means of notifying the person filling that the fluid level has reached 90 percent of tank capacity by providing a tank level gauge marked at 90 percent of tank capacity, or other approved means.
  - b. Automatically shut off the flow of fuel to the tank when the quantity reaches 95 percent of tank capacity.
  - c. Reduce the flow rate to not more than 15 gallons per minute so that at the reduced flow rate, the tank will not overflow for 30 minutes, and automatically shut off flow into the tank so that none of the fittings on the top of the tank are exposed to product because of overfilling.
11. The tank fill connection shall be provided with a means for making a direct connection to the tank's vehicle fuel delivery hose so that no fuel is exposed to the open air during the filling operation.
12. Anti-siphon devices shall be installed in each pipe connected to the AST, where the piping extends below the level of the tank.
13. Emergency shut-offs shall be provided during filling and dispensing operations.
14. Relief valves shall be provided.
15. Pump dispensing devices shall be equipped with vapor-recovery connections.
16. Appropriate labeling and signs in accordance with IFC 2015, Section 5404.2.3, must be provided.
  - a. "Smoking or Open Flames Prohibited".
  - b. Emergency procedures.
  - c. NFPA 704 or equivalent placard specifically identifying the material therein.
17. Approved sampling tubes of a minimum 4 inches (4") in diameter shall be installed in the backfill material of each underground flammable or combustible liquid storage tank. The tubes shall extend from a point 12 inches (12") below the average grade of the excavation to ground level and shall be provided with suitable surface access caps. Each tank site shall provide a sampling sump at the corners of the excavation with a minimum of four (4) sumps. Sampling tubes shall be placed in the product line

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excavation within 10 feet (10') of the tank excavation and one every 50 feet (50') routed along product lines towards the dispensers, and a minimum of two (2) are required.

18. All piping and piping systems shall be designed in accordance with NFPA 31 and the 2015 IFC.

To expedite the plan review and inspection processes, please refer to the information listed below.

## PERMITTING/SUBMITTAL REQUIREMENTS

19. Submittal package shall indicate all of the above requirements.
20. Provide a written description and intent of the installation.
21. Drawings of the installation and conditions shall including the following;
  - a. Interior installations shall indicate all buildings, structures and walls.
  - b. Exterior installations shall indicate all buildings, structures, walls, fire lanes and fire hydrants.
22. Full equipment listing of all tanks, piping, valves, and other equipment.
23. Manufacturer documentation for all parts and materials used in the project.
24. Indicate the maximum working pressure of the tank(s) and piping.
25. Drawings shall be generated by the installing company specific to the installation. Drawings shall show plan view and other pertinent information.
26. Provide documentation of tank testing and ability to hold a vacuum. This is in addition to any testing required by the Fire Department.
27. Submittal package must identify and include all the above requirements to be accepted for review.
28. Installation or construction on site shall be prohibited until a Permit has been issued. Any work performed prior to the issuance of this permit may result in a citation being issued for violation of Section 113.3 of the 2015 International Fire Code.

## GENERAL SUBMITTAL REQUIREMENTS

29. Each submittal shall have a completed Freeport Fire & EMS Department Plan Review Permit Application.
30. Plans approved by the Office of the Fire Marshal give authorization for installation. Final approvals are subject to field verification. Any approval issued by the Office of the Fire Marshal does not release the contractor or property owner from the responsibility of full compliance with all applicable codes and ordinances.
31. All fire department inspection forms and permits shall be kept on the job site until final inspection.
32. All installations shall comply with the approved plans. Any deviation from the approved plans requires a re-submittal to the Office of the Fire Marshal.

All aboveground storage tank requirements for the purposes of this guideline and any other guidelines or requirements of the Fire Department shall conform to the 2015 International Fire Code, as adopted and amended by City of Freeport, and NFPA 30, Flammable and Combustible Liquids Code.

This guide does not replace, nor supersede any codes and/or ordinances adopted by the City of Freeport, or determinations and positions of the Fire Chief or Fire Marshal.