



EULESS FIRE DEPARTMENT FIRE MARSHAL'S OFFICE

EFD-FMO 6-2

INFORMATION LINE: *Installation And Operation Aboveground Fuel Storage Tanks Revised 8/08*

2003 Edition
International Fire
and Building Code
as Amended NFPA
Standards Adopted

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Fire Marshal Paul Smith

SCOPE: These provisions apply to any permanent above ground fuel storage tanks including generator or pump tanks containing diesel fuel in excess of four hundred ninety nine (499) gallons or gasoline in excess of thirty (30) gallons.

PERMIT: A permit is required to install, operate, repair or modify a protected aboveground tank used for storage and/or dispensing of flammable or combustible liquid motor fuels. The permit fee is based on the cost of the installation as established by the building code fee schedule. An annual fire permit fee is then assessed for the use, storage and operation of aboveground fuel storage tanks.

For permit fee or other information call: 817-685-1600.

TO OBTAIN A PERMIT: To obtain a permit three (3) sets of plans shall be submitted with a permit application to the Fire Marshal's Office. The plans shall include the design, details and specifications of the following:

- (a) Quantities and types of liquid to be stored;
- (b) Distances from tanks and dispensers to property lines and buildings (site plan);
- (c) Emergency equipment access easements;
- (d) Location of portable fire protection appliances;
- (e) Vehicle impact protection devices;
- (f) Protected aboveground tanks and their supports;
- (g) Method of storage and dispensing;
- (h) Overfill prevention, spill containment, vents, vapor recovery, dispensers and other equipment and accessories;
- (i) Seismic designs in accordance with the building code;
- (j) Secondary containment provisions;
- (k) Diking design and capacity;
- (l) Venting;
- (m) Piping;
- (n) Electrical systems;
- (o) Emergency controls; and,
- (p) Other information as required by the Fire Marshal.

TANK DESIGN

PROTECTION: Protected aboveground tanks shall meet the requirements of Underwriters Laboratories Standard 2085. Vaulted aboveground tanks in accordance with U.L. 2085 are any U.L. listed standard 142 steel aboveground tank for flammable or combustible liquid all portions of which shall be enclosed in a secondary containment and encased with approved material to obtain a two (2) hour fire resistance rating. All permanent tanks must be in compliance with the International Fire Code, UL 2085, NFPA #30 and be approved by the Fire Marshal.

PRIMARY TANKS: Primary tanks shall be designed in accordance with Article 22 of the International Fire Code as amended and UL 2085.

SIZE: Tanks containing Class I motor fuels shall not exceed ten thousand (10,000) gallons in individual and aggregate capacity. Tanks containing Class II or III-A liquid fuels shall not exceed twelve thousand (12,000) gallons in individual capacity or more than thirty six thousand (36,000) gallons in aggregate capacity. The total maximum

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aggregate capacity of all motor fuels in aboveground tanks on a site shall not exceed thirty six thousand (36,000) gallons.

VENTS

Approved flame arresters shall be installed in normal vents.

LOCATION OF TANKS

Aboveground fuel storage tanks are permitted in specific zoning districts only.

INSTALLATION OF TANKS:

❖ Aboveground storage tanks may **NOT** be used for retail sales.

Protected aboveground tanks shall be installed in accordance to the following provisions:

- (a) Separation Distances: A protected aboveground tank shall be separated from tanks, structures and property lines as defined in the distances established in Table 2206.2.3 of the 2003 International Fire Code.
- (b) Total Quantity: Protected aboveground tank installations shall not exceed the capacity limits referenced on page 1 of this document.
- (c) Secondary Containment: Protected aboveground tanks shall be provided with drainage or diking in accordance with a component of the listed protected tank system. Secondary containment systems shall be monitored either visually or automatically. Enclosed secondary containment systems shall be provided with emergency venting.
- (d) Diking Specifications: Aboveground tanks shall be placed on a concrete slab extending three (3) feet past all portions of the tank and designed to support the full weight of the tank. The pad shall have a minimum six (6) inch containment curb of reinforced concrete construction. Provisions shall be made to drain the dike through the use of valves. Drainage valves shall be accessible under fire conditions if required.
- (e) Vehicle Impact Protection: Guard post or other approved barrier protection shall be separately provided for each protected aboveground tank and for connected piping subject to vehicle impact. The design of guard posts shall be a minimum of four (4) inch diameter concrete filled steel piping as approved or equivalent placed at four (4) foot spacing around the pad perimeter. The height of the barrier must be a minimum of twenty-four (24) inches.
- (f) Overfill Prevention: Protected aboveground tanks shall not be filled in excess of 90% of their capacity. An overfill prevention system shall be provided for each tank. During tank filling operation, the system shall:
 1. Provide an independent means of notifying the person filling the tank that the fluid level has reached 85% of tank capacity. This may be accomplished by any one of the following:
 - A. An alarm providing an audible or visual signal or both.
 - B. A tank level indicator gauge marked at 85% of tank capacity.
 - C. Other approved means.
 2. Automatically shut off the flow of fuel to the tank when the quantity of the liquid in the tank reaches 90% of tank capacity. For rigid hose fuel-delivery systems, an approved means shall be provided to empty the fill hose into the tank after the automatic shut off device is activated.

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3. A permanent sign shall be provided at the fill point for the tank documenting the filling procedure and the tank calibration chart. The filling procedure shall require the person filling the tank to determine the gallonage required to fill it to 90% of capacity before commencing the fill operation.
- (g) Fill Pipe Connection: The fill pipe shall be provided with a means for making a direct connection to the tank vehicle's fuel delivery hose so that the delivery of the fuel is not exposed to the open air during the filling operation, if the tank capacity exceeds one thousand (1,000) gallons.
 - (h) Spill Containers: A spill container having a capacity of not less than five (5) gallons shall be provided for each fill connection. For tanks with a top fill connection, spill containers shall be noncombustible and shall be fixed to the tank and equipped with a manual drain valve which drains into the primary tank. For tanks with a removable fill connection, a portable spill container shall be provided.
 - (i) Signs: Warning signs and identification signs shall be installed to clearly identify hazards. The design of such signs shall be in accordance with the IFC and NFPA 704. Conspicuous signs prohibiting simultaneous tank filling and fuel dispensing shall be posted.

INSTALLATION OF DISPENSING AND PIPING SYSTEMS

Dispensing and piping systems and electrical controls shall be installed in accordance with International Fire Code as amended:

- (a) Tank Openings: Tank openings in protected aboveground tanks shall be through the top only.
- (b) Dispensing Devices: Dispensing devices are allowed to be installed on top of or immediately adjacent to protected aboveground tanks.
- (c) Dispensing devices shall be located such that nozzles cannot reach within five (5) feet of building openings.
- (d) Dispensing devices shall be twenty (20) feet from fixed ignition sources.
- (e) Anti-siphon Devices: Approved anti-siphon devices shall be installed in each external pipe connected to the tank when the pipe extends below the level of the top of the tank.

PARKING OF TANK VEHICLES

Tank vehicles shall not be parked within twenty-five (25) feet of a protected aboveground tank.

EXCEPTION: When the tank is being filled from the tank vehicle.

MAINTENANCE

Protected aboveground tanks, piping and dispensing system shall be maintained in a safe operating condition. Protected aboveground tanks and components of dispensing system shall be maintained in accordance with their listings.

Damage to protected aboveground tanks shall be repaired using materials having equal or greater strength and fire resistance.

FIRE PROTECTION

- (a) Smoking is prohibited within fifty (50) feet of all storage and dispensing devices. Signs which prohibit smoking "No Smoking-Stop Engine By order of the Fire Marshal", shall be conspicuously posted. Signage prohibiting dispensing of gasoline into non approved containers shall also be posted.

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- (b) Portable fire extinguishers shall be provided in accordance with NFPA 10 for high hazard classification. (This is generally a minimum of a ten pound ABC type extinguisher.) Additional fire control equipment may be required where in the opinion of the Fire Marshal an unusual exposure hazard exists.
- (c) Labeling of all tanks shall be in accordance with NFPA 704. The tank must display the name of the product, the tank capacity in gallons, a DOT placard and an NFPA 704 placard.
- (d) Fire Department access shall be provided to within one hundred fifty (150) feet of the tank area and a fire hydrant must be located within five hundred (500) feet. Note that larger installations may require hydrants placed closer if required by the Fire Marshal.
- (e) Emergency shut offs may be required remote from the tank at the discretion of the fire marshal.