

Above ground storage tank requirements

The following procedures should be followed in addition to all applicable Federal, State and Local laws.

Installation

- A permit is required to install, remove, operate, repair, or modify AST's used for storage and dispensing of flammable or combustible liquids. Applicants must obtain a permit for AST's from the Tucson Fire Department and the Development Services Department. The installation plans shall be submitted with a permit application.

A walk through permit process is available weekday mornings at Development Services, 201 N. Stone Avenue, (520) 791-5550.

The applicant must bring a site plan showing the location of the tank in respect to adjacent buildings and property lines. The plans shall include the design, details, and specifications. Include tank specifications with the site plan.

Tanks must meet a nationally recognized testing laboratory listing such as Underwriters Laboratory, ASME, or designed and built in accordance with recognized engineering standards.

- The placement of tank will depend on the size of the tank and the type of product stored. Zoning restrictions include size limitations on tanks, substantial setback distances from residential zoning, and tank screening requirements. Facility owners should review all pertinent regulations before making a decision on replacing UST's with AST's.
- Some means of secondary containment is required and must hold 100% of the capacity of the largest tank. The secondary containment may be a double-wall tank, or the tank placed in a diked area. If a diked area is used as the secondary containment, a means to remove water must be provided.
- Vent piping for Class I, II or IIIA liquids must be installed at not less than 12 feet above adjacent ground level and not less than 5 feet from a building opening. Emergency venting is also required.
- Dispensing shall be from a listed pump, drawing from the top of the tank. Gravity discharge tanks are prohibited unless located on a temporary construction site. The dispensing location may not be less than 10 feet from any building or property line, and at least 20 feet from all fixed sources of ignition. Tank openings, pipes, and valves shall be arranged to prevent siphoning.
- Guard posts or other means shall be provided to protect tanks from vehicular damage. Tanks must be labeled with the product name and no smoking signs. Tanks must be

grounded or bonded to prevent static electricity. A 2A20BC or larger fire extinguisher must remain available at all times.

Additional Requirements for Protected AST's for Motor Vehicle Fuel Dispensing Stations

- The maximum individual tank size is 12,000 gallons, with an aggregate capacity of 48,000 gallons. Additional restrictions may reduce capacity depending on the zoning requirements of the property.
- Approved flame arresters shall be installed in normal vents.
- When required by the Fire Marshal, projectile protection shall be installed.
- Protected aboveground tanks shall not be filled in excess of 95% of their capacity. An overfill prevention system shall be provided for each tank. During tank filling operations, the system shall:
 1. Provide an independent audible or visual alarm signal for notifying the person filling the tank that the fluid level has reached 90% capacity.
 2. Automatically shut off the flow of fuel to the tank when the quantity of liquid in the tank reaches 95% capacity. For a rigid-hose fuel delivery system, an approved means shall be provided to empty the fill hose into the tank after the automatic shutoff device is activated.
- A permanent sign shall be provided at the fill point for the tank that documents 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% capacity before commencing the fill operation.
- The delivery of fuel shall not be exposed to open air during the filling operation. The fill pipe shall be provided with a means for making a direct connection to the tank vehicle's fuel-delivery hose. When any portion of the fill pipe drops below the top of the tank, a check valve shall be installed in the fill pipe no more than 12 inches from the fill hose connection.
- A spill container having a capacity of not less than 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 remote fill connection, a portable spill container shall be provided.
- Except during filling operations, tank vehicles shall not be parked within 25 feet of a protected aboveground tank.

AST Installation Checklist

- ❑ Obtain permits from the Tucson Fire Department and the Development Services Department.
- ❑ Submit the installation plans with permit applications.
- ❑ List quantities and types of liquids to be stored.
- ❑ Provide distances from property lines and buildings to tanks and dispensers.
- ❑ Provide location of fire extinguisher.
- ❑ Provide vehicle impact protection.
- ❑ List overfill protection, spill containment, vents, vapor recovery, dispensers, and other equipment and accessories.
- ❑ Arrange tank openings, pumps, and valves to prevent siphoning.
- ❑ Ground and bond tank to prevent static electricity.
- ❑ Comply with seismic design in accordance with the Building Code.
- ❑ Provide secondary containment.
- ❑ Provide normal venting with flame arresters.
- ❑ Provide emergency venting IAW tank manufacturer specifications.
- ❑ Provide emergency shutoff controls.
- ❑ Ensure tank is labeled with product name and no smoking signs.

Above ground tanks out of service

- Temporary
All connecting lines must be isolated from the tank and be secured from tampering.
 1. **Exception:** In-place fire protection (foam) system lines.
- Out of Service for 90 Days
When a tank is out of service for 90 days or more:
 1. Flammable or combustible liquids shall be removed from the tank.
 2. All piping, including fill line, gauge opening, vapor return and pump connections shall be capped or plugged and secured from tampering.
 - Vent lines shall remain open and operable.
- Out of Service for One Year
 1. Tank shall be removed.

Above ground tank removal

- When removing a tank:
 1. Flammable and combustible liquids shall be removed from the tank and all piping.
 2. Piping at the tank openings shall be disconnected when no longer used.
 3. All underground piping shall be removed.
 - **Exception:** Piping is allowed to be abandoned in place where the Fire Marshal determines that removal is not practical. Abandoned piping shall be capped and safeguarded.
 4. Tank openings shall be capped or plugged, leaving a 0.125-inch to ¼-inch-diameter opening for pressure equalization.
 5. Tanks should be purged and must be inerted prior to removal.
 6. All exterior above-grade fill and vent piping shall be permanently removed.
 - **Exception:** Piping associated with bulk plants, terminal facilities and refineries.
- Disposal

Tanks shall be disposed of in accordance with federal, state and local regulations.