

# Central Arizona Fire and Medical Authority

## Above Ground Fuel Tank Checklist

### International Fire Code, 2012 Edition

1. Quantity and type of liquid to be stored: \_\_\_\_\_

Primary tanks not to exceed 12,000 gal. individual or 48,000 gal. aggregate capacity.

2. Distance from tank and dispenser to property lines: \_\_\_\_\_

buildings: \_\_\_\_\_

public ways: \_\_\_\_\_

between tanks: \_\_\_\_\_

ignition sources: \_\_\_\_\_

LP gas or CNG tank: \_\_\_\_\_

**Table 2306.2.3 Minimum Separation Requirements for Above-Ground Tanks**

Class of Liquid and Tank Type	Individual Tank Capacity (Gallons)	Minimum Distance From Nearest Important Building on Same Property (feet)	Minimum Distance From Nearest Fuel Dispenser (feet)	Min. Distance From Lot Line That is or Can Be Built Upon, Including the Opposite Side of a Public Way (feet)	Minimum Distance From Nearest Side of Any Public Way (feet)	Minimum Distance Between Tanks (feet)
Class 1 protected above-ground tanks	Less than or equal to 6,000	5	25a	15	5	3
	Greater than 6,000	15	25a	25	15	3
Class II and III protected above-ground tanks	Same as Class I	Same as Class I	Same as Class I c	Same as Class I	Same as Class I	Same as Class I
Tanks in Vaults	0-20,000	0 b	0	0 b	0	Separate compartment required for each tank
Other Tanks	All	50	50	100	50	3

For SI: 1 foot=304.8mm, 1 gallon=3.785 L.

a. At fleet vehicle motor fuel-dispensing facilities, no minimum separation distance is required.

b. Underground vaults shall be located such that they will not be subject to loading from nearby structures, or they shall be designed to accommodate applied loads from existing or future structures that can be built nearby.

c. For Class IIIB liquids in protected above-ground tanks, no minimum separation distance is required.

3. Secondary containment provided (describe): \_\_\_\_\_

Protected aboveground tanks shall be provided with drainage control or diking or with a secondary containment that is a component of the listed protected aboveground tank. Enclose secondary containment shall be provided with emergency venting.

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- A. Liquid tight sloped or recessed floors,
- B. Liquid tight raised or recessed sills or dikes,
- C. Sumps and collection systems, or
- D. Drainage systems leading to an approved location.

Incompatible materials shall be separated from each other.

Secondary containment for outdoor storage areas shall be designed to contain a spill from the largest individual vessel. If the area is open to rainfall, secondary containment shall be designed to include the volume of a 24-hour rainfall as determined by a 25-year storm and provisions shall be made to drain accumulations of groundwater and rainwater.

Drainage systems shall be in accordance with the Plumbing Code and the following:

- A. Drains from outdoor storage areas shall be sized to carry the volume of the fire flow and the volume of a 24-hour rainfall as determined by a 25-year storm.
- B. Materials of construction for drainage systems shall be compatible with materials stored.
- C. Incompatible materials shall be separated from each other in the drainage system, and
- D. Drains shall terminate in an approved location away from buildings, valves, means of egress, fire access roadways, adjoining property and storm drains.

4. Vehicle impact protection?                      Yes        \_\_\_\_\_                      No        \_\_\_\_\_

When guard post are installed, posts shall be:

- A. Constructed of steel not less than 4 inches in diameter and concrete filled,
  - B. Spaced not more than 4 feet between post on center,
  - C. Set not less than 3 feet deep in a concrete footing of not less than a 15-inch diameter,
  - D. Set with the top of the posts not less than 3 feet above ground, and
- If other physical barriers are used they shall be a minimum of 36 inches (914 mm) in height and shall resist a force of 12,000 pounds (53 375 N) applied 36 inches (914 mm) above the adjacent ground surface.

5. Overfill protection provided?                      Yes        \_\_\_\_\_                      No        \_\_\_\_\_

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 comply with one of the following:

- A. Provide an independent means of notifying the person filling the tank that the level has reached 90% of the capacity by providing an audible or visual alarm signal, providing a tank level gauge marked at 90%, or other approved means, and
- B. Automatically shut off the flow of fuel to the tank when the capacity reaches 95% of tank capacity. For rigid hose fuel-delivery systems, an approved means shall be provided to empty the fuel hose into the tank after the automatic shutoff device is activated.
- C. The system shall reduce the flow rate to not more than 15 gallons per minute (0.95 L/sec) so that at the reduced flow rate, the tank will not overfill 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

A permanent sign shall be provided at the fill point for the tank, in an office window, or at another accessible area, documenting the filling procedure and the tank calibration chart. The filling procedure shall require that the person filling the tank determine the gallonage required to reach 95% capacity prior to commencing the filling operation.

6. Fill pipe connections provided?                      Yes        \_\_\_\_\_                      No        \_\_\_\_\_

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 fuel is not exposed to the open air during the tank filling operation. When any portion of the fill pipe exterior to the tank extends below the level of the top of the tank, a check valve shall be installed in the fill pipe not more than 12 inches from the fill hose connection.

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7. Spill container provided?                      Yes        \_\_\_\_\_                      No        \_\_\_\_\_

A spill container having a capacity of not less than 5 gallons (19 L) 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 that drains into the primary tank. For tanks with a remote fill connection, a portable spill container shall be allowed.

8. Signs provided?                                      Yes        \_\_\_\_\_                      No        \_\_\_\_\_

Hazard signs prohibiting smoking, prohibiting dispensing into unapproved containers and requiring vehicle engines to be stopped during fueling shall be conspicuously posted in sight of each dispenser.

Identification of contents	Yes	_____	No	_____
Warning re: smoking and open flame	Yes	_____	No	_____
NFPA 704 Diamond	Yes	_____	No	_____

Warning signs identifying the product and identifying the hazards of the product, example:

DANGER-FLAMMABLE LIQUID

9. Tank openings through the top?              Yes        \_\_\_\_\_                      No        \_\_\_\_\_

Tank openings in above-ground tanks shall be in the top only.

10. Dispensing devices:      Number of devices      \_\_\_\_\_

Are all devices on top of or immediately adjacent to the tank?	Yes	_____	No	_____
Is vehicle impact protection provided for dispensing devices?	Yes	_____	No	_____

11. Antisiphon devices provided?              Yes        \_\_\_\_\_                      No        \_\_\_\_\_

Approved antisiphon 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.

12. 2A 20 BC fire extinguisher provided?              Yes        \_\_\_\_\_                      No        \_\_\_\_\_

13. Emergency shutdown device provided for each dispenser?              Yes        \_\_\_\_\_                      No        \_\_\_\_\_

The emergency shutdown device shall be located not more than 100 feet but no less 20 feet from the fuel dispensers and shall be distinctly labeled as "EMERGENCY FUEL SHUTDOWN DEVICE."

14. Communications provided?                      Yes        \_\_\_\_\_                      No        \_\_\_\_\_

If unattended self-service motor fuel dispensing is allowed, the owner/operator shall provide a phone, not requiring a coin to operate, to contact the fire department in case of emergency

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The installation plans shall be submitted with the permit application. The plans shall include the design, details, and specifications of the following:

1. Quantities and types of liquids to be stored.
2. A site plan that includes distances to;
  - A. Property lines,
  - B. Buildings,
  - C. public ways,
  - D. Ignition sources
  - E. LP-gas or CNG storage tanks
  - F. Other fuel tanks
3. Vehicle Access,
4. Fire Appliances,
5. Vehicle impact protection,
6. Protected aboveground tanks and their supports,
7. Method of storage and dispensing,
8. Overfill protection, spill containment, vents, vapor recovery, dispensers, and other equipment and accessories,
9. Secondary containment,
10. Venting,
11. Piping,
12. Electrical systems, and
13. Emergency controls and
14. Signage to be provided, including but not limited to, placarding, "No Smoking" signs, emergency instructions
15. Hours of dispensing and, if unsupervised dispensing of fuel is available, the location of a telephone.
16. Previously used tanks will be required to be tested

**Flammable & Combustible Liquids Sec. 5701.4 Permits** is as follows:

A permit fee shall be paid, with any permit as required in 5701.4 according to the adopted fee schedule.