

**Permit Requirements
Aboveground Storage Tank
Motor Fuel Dispensing**

Kern County Fire Department



Office of the Fire Marshal ~ Fire Prevention
2820 M St. ~ Bakersfield, CA 93301
Telephone (661) 391-3310 ~ Fax (661) 636-0466/67
Website: kerncountyfire.org
Email: fireprevention@kerncountyfire.org



Please include completed Application for Permit (KCFD 200) with submittal

Fee Amount: \$290.00

Fee Code: 1.4.1

Note: Plus \$35 fee for each additional tank over 2

This document is to aid in the construction permitting process including Change of Use/Occupancy for an aboveground storage permit within commercial buildings or tenant spaces regarding what should be submitted for the Fire Marshal's Office review. Because every building differs, this guideline is not intended to identify each code requirement applicable, therefore the applicant must follow all appropriate codes adopted by Kern County for the process or construction under review. Other Fire Department operational permits may be required.

1. Permits for Aboveground Storage Tanks shall be applied for at 2820 M St., Bakersfield, CA 93301.
2. Fee shall be submitted at the time of application submittal. Make check payable to Kern County Fire Department. **Visa and MasterCard accepted.**
3. An Aboveground Storage Tank is a listed tank system consisting of a primary tank provided with protection from physical damage and fire-resistive protection from a high-intensity liquid pool fire exposure. The tank system shall provide these protection elements as a unit or is allowed to be an assembly of components, or a combination thereof. (UL 2085)
4. The design, fabrication, and construction of tanks for Class I and II flammable or combustible (gasoline and diesel) liquids shall comply with UL2085 standards, a tank used for Class III flammable or combustible liquids (motor oil, gear oil) shall comply with UL142 or UL2085 standards. Each tank shall bear a permanent nameplate or marking indicating the standard used as the basis of design.
5. Aboveground tanks must be installed to the manufacturer's specifications. Seismic and flood protection must be utilized.
6. Storage and dispensing of motor fuels into the fuel tanks of motor vehicles from aboveground tanks which are located outside of buildings at premises not normally accessible to the public shall be in accordance with CFC Chapter 23.
7. A building permit is required for all electrical work. (KC Ordinance 17.24.090)
8. A building permit is required for all foundations. (KC Ordinance 17.24.090)
9. File or update Hazardous Materials Business Plans with Kern County Environmental Health Department through CERS. SPCC may be required dependent on the capacity of the aboveground tank(s). Please go to <http://www.co.kern.ca.us/eh/> for more information, or call (661) 862-8740
10. Vapor recovery permits are required by Kern County Air Pollution Control District.
11. Aboveground fuel tanks, with limitations, are only allowed on properties zoned A, A-1, M-1, M-2, M-3, or NR. (KC Ordinance 17.32.003)
12. Application for Permit and scaled site plans shall be submitted to Kern County Fire Prevention at 2820 M St., Bakersfield, CA 93301.

Submit two (2) copies of the site plan, and mechanical drawings only. The plans should specify or illustrate the following:

- a. Quantities and types of liquids to be stored.
 - b. Distances from tanks and dispensers to property lines and buildings, vehicle access/emergency vehicle access, fire appliances, and vehicle impact protection.
 - c. Protected Aboveground Tanks and their supports; UL 2085 Protected Tank: an aboveground atmospheric tank with secondary containment and an insulation system intended to reduce the heat transferred to the primary tank when the tank is exposed to a hydrocarbon pool fire, and provide with protection from physical damage.
 - d. Method of storage and dispensing.
 - e. Overfill prevention, spill containment, vents, vapor recovery, dispensers.
 - f. Seismic design in accordance with the Building Code.
 - g. Secondary containment for UL142 tanks.
 - h. Venting and piping.
 - i. Electrical systems in accordance with the Electrical Code.
 - j. Emergency controls (emergency shutoff, breakaway devices, etc.), and required water supply for fire protection.
 - k. Guard posts for physical protection, 6" ID and concrete-filled.
 - l. Other information as required.
13. The maximum capacity of a single tank is 12,000 gallons, and the maximum aggregate capacity at any facility is 48,000 gallons. Installations with the maximum allowable capacity shall be separated from other such installations by not less than 100 feet.
14. Warning signs and identification signs shall be installed to clearly identify hazards. Conspicuous signs prohibiting simultaneous tank filling and fuel dispensing shall be posted. See CFC Section 5003.5 for the design of signs. Signs prohibiting smoking, dispensing, into unapproved containers, to stop vehicle motor while refueling (CFC Section 2305.6), and the location of the EMERGENCY PUMP SHUTOFF.
15. Tanks shall be separated from property lines, important buildings, public ways, and other tanks in accordance with Table 2306.2.3
16. Aboveground tanks shall be provided with drainage control with secondary containment that is 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. (CFC 2306.6.2.5)
17. Guard posts or other approved barrier protection shall be separately provided for each protected aboveground tank, including connected piping subject to vehicle impact. The design of guard posts shall be in accordance with CFC Section 2303.1.1 Crash posts shall be:
- a. Constructed of steel not less than 6 inches ID in diameter and concrete-filled.
 - b. Spaced not more than 4 feet between posts on center.
 - c. Set not less than 3 feet deep in concrete footing of not less than a 15 inch diameter.
 - d. Set with the top of the posts not less than 3 feet aboveground.
 - e. Located not less than 4 feet and no more than 5 feet from the tank.
18. Aboveground Tanks shall not be filled in excess of 95 percent of capacity. An overfill prevention system shall be provided for each tank. Fill pipe connections shall be provided for each tank; Mani folding fill connections shall not be permitted.
- a. Provide an independent means of notifying the person filling the tank that the fluid level has reached 90 percent of tank capacity by providing an audible or visual alarm signal, 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 of liquid in the tank reaches 95 percent 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 shutoff device is activated. Permanent signs shall be provided at the fill point for the tank documenting the filling procedure and the tank calibration chart.
19. Fill pipes 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 filling operation.
20. A spill container having a capacity of not less than 5 gallons shall be provided for each fill connection.
21. Provisions shall be made so that any spilled fuel will be prevented from flowing into the interior of adjacent structures. Such provisions may be grading the driveway, raising doorsills, or other means. (CFC Section 2305.3)
22. Dispensing and piping systems and electrical controls shall be installed in accordance with CFC Chapter 57 except for the following:
- Tank openings in protected aboveground tanks shall be through the top only. Dispensing devices are allowed to be installed on top of or immediately adjacent to Protected Aboveground Tanks.
 - 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.
23. Normal vents shall terminate 12 feet above grade. Approved flame arresters shall be installed in normal vents. (CFC Section 5704.2.7.3.3)
24. An emergency pump shutoff switch shall be located between 20 and 100 feet from the dispenser. It shall be distinctly labeled in an approved location. (CFC Section 2303.2)
25. Owners/operators of facilities with 1320 gallons or greater of a petroleum-based liquid product (does not include liquid petroleum gas but includes gasoline, diesel fuel, waste oil) are required to develop a Spill Prevention Control and Counter Measure Plan. The plan must be prepared in accordance with the oil pollution prevention guidelines in the Federal Code of Regulations (40 CFR, 112).
26. Delivery vehicle location. Where liquid delivery to aboveground storage tanks is accomplished by positive-pressure operation, tank vehicles shall be positioned no less than 25 feet (7620 mm) from tanks receiving Class I liquids and 15 feet (4572 mm) from tanks receiving Class II and IIIA liquids.
27. Tank capacity calculation. The driver, operator, or attendant of a tank vehicle shall, before making a delivery to a tank, determine the unfilled, available capacity of such tank by an approved gauging device.
28. Tank fill connections. Delivery of flammable liquids to tanks more than 1,000 gallons (3785 L) in capacity shall be made by means of approved liquid and vapor-tight connections between the delivery hose and tank fill pipe. Where tanks are equipped with any type of vapor recovery system, all connections required to be made for the safe and proper functioning of the particular vapor recovery process shall be made. Such connections shall be made liquid and vapor tight and remain connected throughout the unloading process. Vapors shall not be discharged at grade level during delivery.

**Table 2306.2.3
MINIMUM SEPARATION REQUIREMENTS
FOR ABOVEGROUND TANKS**

| Class of Liquid & Tank Type | Individual Tank Capacity (gallons) | Min. Distance from Nearest Important Buildings on Same Property (feet) | Min. 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) | Min. Distance from Nearest Side of Any Public Way (feet) | Min. Distance Between Tanks (feet) |
|--|---|---|---|---|---|---|
| Class I protected aboveground tanks | Less than or equal to 6,000 | 5 | 25 ^a | 15 | 5 | 3 |
| | Greater than 6,000 | 15 | 25 ^a | 25 | 15 | 3 |
| Class II and III protected aboveground tanks | Same as Class I | Same as Class I | Same as Class I | 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 |
| Other tanks | All | 50 | 50 | 100 | 50 | 3 |

- 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.

Aboveground tanks located outside, above grade. (Kern County Ordinance 17.32.074)

Aboveground tanks shall not be used for the storage of Class I, II, or III liquid motor fuels except as provided by this section.

- 1. *In areas not accessible to the public, aboveground tanks used for outside, above-grade storage of Class I, II, or III liquid fuels shall be listed and labeled as protected aboveground tanks and be in accordance with Chapter 57. See Table 2306.2.3.*
- 2. *In areas accessible to the public, aboveground tanks used for above-grade storage of Class II or III liquid fuels shall be protected aboveground tanks provided the separation requirements to buildings, property lines, dispensing areas, and parking areas in Table 2306.2.3 are increased to 50 feet (152.4mm).*

Storage vessels for LP-gas and CNG shall be located 20 feet or more from aboveground tanks containing flammable or combustible liquids CFC Section 5704.2.9.6.3 & NFPA 58 Section 6.4.5

Aboveground tanks for Use in Special Operations;

Farms, gravel pits & construction projects

ALLOWABLE CAPACITIES: Permanent tanks, 1,100 gallon maximum
CFC (5706.2.4) Temporary tanks, 10,000 gallon maximum

- 1. The use of aboveground tanks in conjunction with the dispensing of Class I, II, or III-A liquids into the fuel tanks of motor vehicles or other motorized equipment on the premises not normally accessible to the public is permitted in Zone Districts M-1, M-2, M-3, A or A-1 as defined in the Land Use Ordinance of Kern County. (KC Ordinance 17.32.003)

2. The design, fabrication, and construction of tanks shall be in accordance with UL2085 (CFC Section 2306.2.3), shall provide engineered drawings from the tank manufacturer, and each tank shall bear a permanent nameplate or marking indicating the standard used as the basis of design.
3. Storage areas shall be kept free of weeds and extraneous combustible material. Open flames and smoking shall not be permitted in flammable or combustible liquid storage areas. (CFC Section 5704.2.4 & 5704.2.6)
4. Tanks and containers for the storage of liquids aboveground shall be conspicuously marked with the name of the product which they contain and **FLAMMABLE-KEEP FIRE AND FLAME AWAY**. Tanks shall bear marking **KEEP 50 FEET FROM BUILDING**.
 Note: Additional distance shall be provided when necessary to ensure that vehicles, equipment, or containers being filled directly from such tank shall be not less than 50 feet from any structure, haystack, or other combustible storage.
5. Fill opening shall be equipped with a locking closure device. The fill opening shall be separate from the vent opening. (CFC Section 5706.2.4.1)
6. Each tank shall be provided with a free-opening vent to relieve vacuum or pressure which could develop in normal operation or from fire exposure.
7. The area surrounding a tank or group of tanks shall be provided with drainage to an approved basin or shall be diked to prevent accidental discharge of liquid from endangering adjacent tanks, adjoining property, or reaching waterways. All dikes shall be in accordance with CFC Section 5706.2.6
8. Portable fire extinguishers with a minimum classification of 2-A:20-BC are required between 15-75 feet from the dispenser. (CFC Section 2305.5 & 906)

Fire-Protected Tanks (UL-2085)

Fire-Protected Tanks designed for the safe storage and dispensing of petroleum products (gasoline, diesel, fuel-oil, heating-oil, kerosene, and alcohol), chemicals, and other flammable or combustible products. **Fire-Protected Tanks are designed to withstand prolonged exposure to extreme temperatures while maintaining the temperature of the primary tank and its contents below thresholds that may ignite or rapidly combust the liquids/vapors within. Fire-Protected steel exterior tanks utilize a lightweight concrete thermal insulation material to achieve thermal protection.** Fire-Protected concrete aggregate exterior tanks utilize dense industrial-grade concrete to achieve thermal protection. Both Fire-Protected aboveground tank designs have merits that are usually dependent upon specific end-user site and performance requirements. **Underwriters Laboratories (UL) has issued performance standard UL-2085, Protected Secondary Containment Aboveground Tanks for Flammable and Combustible Liquids, a performance standard which requires that tank designs be third-party tested and certified as having successfully passed the following tests:**

UL-2085 Test Summary

| | |
|-------------------------------|--|
| Prolonged Fire-Test | 2-Hours at 2000 degrees F Maximum Avg. Temp.= 280 degrees F |
| Hose-Stream Test | 5-minutes, 45 psig water stream after fire test |
| Bullet Resistance Test | 5-rounds, 150 grain, Caliber .30, M2 Ball Ammunition 2700 feet/second impact velocity |
| Vehicle Impact | 12,000 pounds applied over 1sq. ft. @ 10mph |
| Leakage Test | After successful completion of above, leakage test performed using 5.0 psig air; tank to hold air for 1 hour without leaking |

CFC – California Fire Code 2019, KC Ordinance – Kern County Ordinance (#8866)