

UNDERGROUND STORAGE TANK SYSTEM INSTALLATION/**UPGRADE** SUPPLEMENT

*For use by Unidocs Member Agencies or where approved by your Local Jurisdiction
Authority Cited: ~~1997~~ California Fire Code (CFC); Chapter 6.7, Health and Safety Code (HSC);
Title 23, Div. 3, Ch. 16 California Code of Regulations (CCR); ~~Hazardous Materials Storage Ordinance~~*

I. General Information

This document, accompanied by all required attachments, shall be completed and submitted along with the project plans and installation/upgrade permit application. It is intended to serve as a general overview of flammable and combustible liquid UST installation and upgrade requirements and is not all-inclusive. The Unidocs—~~accompanying~~ “Underground Storage Tank System Installation Guidelines” provide additional information on installation requirements.

II. Project Information

Provide the following information:

Facility Name (Tank _____) Bldg. No.: _____
 Site): _____
 Site Address: _____ City: _____ Zip: _____
 Project Contact Name: _____ Phone No.: (_____) _____ ext. _____
 Contractor Name (DBA): _____ Contractor License No.: _____
 Plan Check No.: _____ Date Plans Submitted: _____

This information is intended to expedite the plan review and approval process. Where appropriate, enter, on the line to the right of each item, the number of the page within your submitted plans on which the item asked for is described. Highlight the information in your plans. If an item is not applicable to this project, mark “N/A” on the “Submittal Page No.” line. Calculations, brochures and/or manufacturers’ cut sheets for all system components, and other required information shall be submitted as attachments to the plans.

A. Tanks:

Agency Use Only	Code Section		Submittal Page No.
<input type="checkbox"/>	HSC § 25290.1(c) CCR 2631(a) 2633(e)	Tanks are product tight and compatible with materials intended to be stored.	_____
<input type="checkbox"/>	CCR § 2631(b) 2633(e)	Design and construction of tank(s) and all other components used to construct primary containment is system(s) approved by an independent testing organization (e.g., UL).	_____
<input type="checkbox"/>	CCR § 2635(a)(6)	Tank systems will be installed in accordance with manufacturers’ written installation instructions.	_____
<input type="checkbox"/>	CFC § 3404.2.11.2#1	Tanks are located with respect to existing foundations and supports such that the loads carried by the latter cannot be transmitted to the tank.	_____
<input type="checkbox"/>	CFC § 3404.2.11.2#2 7902.6.3	Tanks are located not less than 3 feet from the nearest wall of a basement, pit, cellar, and/or property or lot line.	_____
<input type="checkbox"/>	CFC § 3404.2.11.2#3 7902.6.3	Tanks are separated by at least 1 foot the following minimum distances , measured shell-to-shell: 1 foot between multiple steel tanks; 1 ½ feet between multiple fiberglass tanks.	_____
<input type="checkbox"/>	HSC §§ 25290.1(f) 25290.2(e) 25291(c) CCR §§ 2635(b) 2665	A spill container having minimum 5 gallon capacity and drain valve allowing drainage of collected spills to the primary tank is provided at each tank fill location.	_____

Agency Use Only	Code Section		Submittal Page No.
<input type="checkbox"/>	HSC §§ 25290.1(f) 25290.2(e) 25291(c) CCR §§ 2635(b) 2665	An approved overfill prevention device is provided at each tank fill location. <i>[Note: The device must restrict flow at 90% of tank capacity or trigger an audible and visual alarm at 90% of tank capacity or positively shut off flow at 95% of tank capacity to alert the operator.]</i>	_____
<input type="checkbox"/>	CCR § 2631(c)	Striker plates are installed center-to-center below all accessible tank openings.	_____

B. Piping:

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<input type="checkbox"/>	HSC §§ 25290.1(c)(1) 25290.2(c)(1) 25291(a)(1) CFC § 2703.2.2.1#1 8001.4.3.2 NFPA 30 § 5.2.1	Piping is product tight and compatible with the material(s) intended to be stored; is of adequate strength and durability to withstand the pressure, structural stress, and exposure to which it will be subject; and complies with ASME B31.	_____
<input type="checkbox"/>	CCR § 2631(b) CFC § 2206.6.3	Design and construction of piping is approved by an independent testing organization (e.g., UL).	_____
<input type="checkbox"/>	CCR § 2636(c)(2)	Piping systems will be installed in accordance with manufacturers' written installation instructions.	_____
<input type="checkbox"/>	CCR § 2636(c)(1) UBC 708.0	Double wall piping that is not equipped with continuous vacuum/pressure/hydrostatic monitoring is sloped so that all releases will flow to a monitored collection sump located at the low point of the underground piping run. Piping, including vent lines, sloped toward tank(s) with minimum 1/4 inch slope per 1 foot of run.	_____
<input type="checkbox"/>	23 CCR 2636(a)(2)	Vapor recovery piping secondarily contained unless system is designed and installed so piping can not contain liquid phase product [i.e., piping sloped toward tank(s) with minimum 1/4 inch slope per 1 foot of run, and mechanical overfill prevention device(s) installed at each tank fill opening]. (Note: Ball float valves should not be installed on vent lines or drop tubes.)	_____
<input type="checkbox"/>	CFC § 3403.6.9 7901.11.7.1	Underground liquid Metallic product , vent, and vapor return piping, where used , is provided with listed and approved flexible swing joints (as defined in CFC Article 2) or approved listed flexible connectors at the following points: <ul style="list-style-type: none"> ◦ Where piping connects to underground tanks; fittings. ◦ Where piping leaves ends at dispensing islands(s) and vent risers; or location(s). ◦ At points where differential movement in the piping can occur. On piping that is rigidly supported or connected between fixed points and which is subject to thermal expansion or differential movements. <p><i>[Exception: Not required for FRP piping in locations where piping diameter does not exceed 4 inches and the piping has a straight run of at least 4 feet on one side of the connection when connections result in a change of direction.]</i></p>	_____
<input type="checkbox"/>	23 CCR 2635(a)(6)	Annular vent piping in accordance with manufacturer's recommendations/guidelines.	_____
<input type="checkbox"/>	CFC 7902.1.13.7	Tank vent piping has minimum 1-1/4 inch internal diameter and is sized to prevent excessive back pressure on the tank(s). [Note: If vent piping is manifolded, refer to CFC §7902.1.10.6.]	_____

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<input type="checkbox"/>	CFC § 3404.2.7.3.3 7902.1.13.4	
	Tank vent piping discharges vertically , to a safe point outside of the exterior of structures buildings and away from adjacent walls, eaves, or other obstructions to assist in vapor dispersion, with the following minimum distances: <ul style="list-style-type: none"> ◦ 12 feet above adjacent ground level; grade. ◦ 5 feet to any property lot line of a property that can be built upon or opening into a building. ◦ 2 feet above roofs or structural elements when run near or through a structure. 	_____
<input type="checkbox"/>	CFC § 2206.7.4 5202.5.3.2	
	Liquid supply Dispenser piping is provided with an approved shear/fusible link emergency shutoff valves at the base of each dispenser supplied by a remote pump.	_____

C. Secondary Containment: *[Note: Laminated, coated, or clad primary containment is ~~containers and piping are~~ considered single-walled, and does not satisfy requirements for secondary containment.]*

Agency Use Only	Code Section	Submittal Page No.
<input type="checkbox"/>	HSC § 25290.1(c) 23-CCR 2631(a)	
	Secondary containment is provided for tanks.	_____
<input type="checkbox"/>	HSC §§ 25290.1(c) 25290.2(c) 25291(a) CCR § 2636	
	Secondary containment is provided for piping as follows: <ul style="list-style-type: none"> ◦ USTs installed on or after 7/1/2003 — Secondary containment is required for all product and remote fill lines; and all underground vent lines, vapor recovery lines, and riser piping connected to tank primary containment; ◦ USTs installed after 7/1/1987 but prior to 7/1/2003 — Secondary containment is required for all replacement product and remote fill lines and any vapor recovery lines having sags or traps [and any vent or riser piping not exempted pursuant to 23 CCR §2636(a)(1)]; 	_____
<input type="checkbox"/>	CCR §§ 2631(b) 2631(d)	
	The design and construction of each integral secondary containment system is approved by an independent testing organization (e.g., UL). Each secondary containment system which is not an integral part of primary containment is designed and constructed according to an engineering specification approved by a state-registered Professional Engineer or according to a nationally recognized industry code or engineering standard which includes the construction procedures.	_____
<input type="checkbox"/>	HSC §§ 25290.1(c)(2) 25290.2(c)(2) 25291(a)(2)	
	Secondary containment is product tight and constructed to prevent structural weakening as a result of contact with any hazardous substance released from primary containment.	_____
<input type="checkbox"/>	HSC §§ 25290.1(c)(3) 25290.2(c)(3)	
	All secondary containment systems will be constructed to prevent any water intrusion into the system by precipitation, infiltration, or surface runoff. <i>[Note: Required for tank systems installed on or after 7/1/2003.]</i>	_____
<input type="checkbox"/>	HSC §§ 25290.1(c) 25290.2(c) 25291(a) CCR § 2636(g)	
	An under-dispenser containment (UDC) sump or pan is provided for each dispenser.	_____
<input type="checkbox"/>	23-CCR 2636	
	Secondary containment provided for primary product piping.	_____
<input type="checkbox"/>	23-CCR 2636	
	Secondary containment provided for remote fill piping.	_____
<input type="checkbox"/>	23-CCR 2636	
	Secondary containment provided for dispenser(s) (e.g. Pan or sump at base of each dispenser).	_____
<input type="checkbox"/>	CCR 2631(b) 2631(d)	
	Secondary containment systems compatible with materials stored.	_____
<input type="checkbox"/>	CCR 2635(b) 2665	
	Overspill containment having minimum 5 gallon capacity provided at each tank fill location.	_____

<input type="checkbox"/>	23-CCR 2632(d)(2) 2634(e)	Provision made for safe removal of contained spilled materials and contaminated materials.	_____
<input type="checkbox"/>	CCR 2635(b) 2665 CFC 7902.6.5.3	Approved overfill prevention device provided at each tank fill location. (Note: Device shall restrict flow at 90% of tank capacity or trigger an alarm at 90% of tank capacity or positively shut off flow at 95% of tank capacity to alert the operator.)	_____

D. Corrosion Protection:

Agency Use Only	Code Section		Submittal Page No.
<input type="checkbox"/>	CCR § 2635(a)(2)	Tanks are protected from corrosion.	_____
<input type="checkbox"/>	CCR § 2636(b)	Corrodable underground piping, if in direct contact with backfill, is protected against corrosion. Piping protected from corrosion.	_____
<input type="checkbox"/>	STI Standard	Tie downs, required for steel or fiberglass coated steel tank(s), are separated from tank(s) via dielectric material that is wider than the strapping.	_____
<input type="checkbox"/>	API Standard	Tie downs, when used, are constructed of non-corrosive material or coated steel.	_____

E. Burial and Cover:

Agency Use Only	Code Section		Submittal Page No.
<input type="checkbox"/>	CFC § 3404.2.11.3 7902.6.4	Tanks are set on a firm foundation and surrounded by a minimum 6 inches of noncorrosive inert material, such as clean sand or pea gravel.	_____
<input type="checkbox"/>	CFC 7902.6.4	Tank(s) covered by minimum two feet of earth or not less than one foot of earth plus not less than 4 four inches of reinforced concrete. When subjected to traffic, tanks shall be protected by: 1.) at least 3 three feet of earth; or 2.) 18 inches of earth plus 6 inches of reinforced concrete. The concrete shall extend at least 1 one foot horizontally beyond the outline of the tank in all directions.	_____
<input type="checkbox"/>	CFC 7902.6.4	A certification, stamped by a registered engineer, that flooding will not occur and that groundwater conditions do not warrant additional engineering to counteract tank buoyancy, is included with this application. [Alternative: Attach buoyancy calculations, stamped by a registered engineer and based upon the assumption that each tank lies completely submerged.]	_____
<input type="checkbox"/>	PEI Standard	Piping is surrounded by minimum 6 inches sand or pea gravel and buried at least 18 inches below grade. Separation between adjacent lines is at least 2 times the diameter of the largest line.	_____

F. Dispensers:

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<input type="checkbox"/>	CFC § 2206.7.3 5201.5.1	Concrete islands at least 6 inches high are provided (or other approved method of vehicle impact protection).	_____
<input type="checkbox"/>	CFC § 2203.1 5201.4.1.2	Dispensers are sited with the following minimum distances: 1.) 10 feet to any property-lot line; 2.) 20 feet to any fixed source of ignition; 3.) 10 ten feet to buildings having combustible exterior wall surfaces or buildings having noncombustible exterior wall surfaces that are not 1-hour rated or buildings having combustible overhangs; 4) such that all portions of vehicles being fueled will be on the premises of the facility.	_____
<input type="checkbox"/>	CFC § 2203.1#4 5201.4.1.2	Dispenser hoses, when fully extended, reach no closer than 5 feet from any building opening.	_____

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<input type="checkbox"/>	CFC § 2206.7.5 5202.4.3.1	Dispenser hoses are listed and approved, and are no more than 18 feet in length. When not in use, hoses will be reeled, racked, or otherwise protected from damage.	
<input type="checkbox"/>	CFC § 2206.7.5.1 5202.4.3.2	Each dispenser hose is provided with an approved emergency break-away connector designed to retain liquid on both sides of the breakaway point.	
<input type="checkbox"/>	BAAQMD CFC § 2206.7.6 5202.4.4.2	Each dispenser hose is provided with a listed automatic-closing-type nozzle valve with integral latch-open device.	
<input type="checkbox"/>	CFC § 2204.3 5201.6.3 5202.45	<p>If dispensing is unsupervised, the following are provided required:</p> <ul style="list-style-type: none"> ◦ A telephone that does not require a coin to operate (or other approved, clearly identified means to notify the Fire Department); ◦ Daily site visits by owner/operator; ◦ Fire alarm transmitting device. ◦ Dispensing devices are programmed to limit uninterrupted fuel delivery to 25 gallons or limit delivery by use of a to a pre-programmed card. 	

G. Emergency Shut-Off:

Agency Use Only	Code Section		Submittal Page No.
<input type="checkbox"/>	CFC § 2203.2 5201.5.3	Switch(es) to shut off electrical power used in dispensing operations are distinctly labeled "EMERGENCY FUEL SHUTOFF." SHUTDOWN DEVICE .	
<input type="checkbox"/>	CFC § 2203.2 5201.5.3	Switch(es) are installed at approved location(s) no less than 20 feet and no more than 100 feet from any dispenser.	
<input type="checkbox"/>	CFC § 2203.2 5201.5.3	Switch or sign is visible from every all dispensing locations.	

H. Monitoring:

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<input type="checkbox"/>	HSC §§ 25290.1(d) 25290.2(d) 25291(b) 25291(e) CCR 2632	All secondary containment systems (i.e.g., tank annular spaces, secondary piping, sumps, UDC) are continuously monitored by approved electronic leak detection systems that can detect the entry of hazardous substance and water. [Note: Secondary containment for tank systems installed on or after 7/1/2004 must be equipped with continuous vacuum/pressure/hydrostatic monitoring equipment.]	
<input type="checkbox"/>	CCR §§ 2632 2636	<p>Electronic monitoring sensors are located at the following points in secondarily-contained tank systems installed prior to 7/1/2004:</p> <ul style="list-style-type: none"> ◦ At the bottom of the interstitial space of each secondarily-contained tank, positioned as near as possible to the bottom of the tank; ◦ In collection sumps at end of each secondarily-contained pipe run, positioned as near as possible to the bottom of the collection sump; ◦ In UDC dispenser pans or sumps other than those provided with mechanical leak detection equipment that shuts off the flow of product to the dispenser when a leak is detected; which do not drain directly into secondary containment piping. ◦ Along secondarily-contained pipe runs, portions of which do not slope towards monitored locations which do not meet the 1/4 inch per foot slope requirement, positioned at the low point of each in the depressed or low-lying areas. 	

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<input type="checkbox"/>	HSC §§ 25290.1(h) 25290.2(g) 25291(f) 25292(e) CCR § 2636(f) (2)	Automatic line leak detectors are installed to monitor underground pressurized piping. OR automatic shut down of pumps upon leak detection or failure/disconnection of monitoring system. [Exception: Not required for Emergency Generator Tank Systems (EGTS) meeting the requirements of 23 CCR §2636(f)(6).]	_____
<input type="checkbox"/>	CCR 2632	All monitoring locations provided with accessible caps for inspection and testing.	_____
<input type="checkbox"/>	CCR §§ 2632(c)(2)(B) 2634(b)	The alarm panel provides both audible and visual alarms. It is located in a protected area and within sight and hearing distance of on-site personnel and hard-wired to a dedicated circuit.	_____