

**Proposed Amendments
to the
California Code of Regulations
Title 23. Waters
Division 3. State Water Resources Control Board
and Regional Water Quality Control Boards
Chapter 16. Underground Storage Tank
Regulations**

**DRAFT
REGULATIONS**

**April 2019
State Water Resources Control Board
Division of Water Quality**

The proposed changes: insertions shown as underline and deletions shown as ~~strikethrough~~.

TITLE 23. WATERS
DIVISION 3. STATE WATER RESOURCES CONTROL BOARD AND
REGIONAL WATER QUALITY CONTROL BOARDS
CHAPTER 16. UNDERGROUND TANK REGULATIONS

Article 3. New Underground Storage Tank Design, Construction, and Monitoring Requirements

§ 2631. Design and Construction Requirements for New Underground Storage Tanks.

- (a) All new underground storage tanks including associated piping used for the storage of hazardous substances shall have primary and secondary containment. Primary containment shall be product-tight. Secondary containment may be manufactured as an integral part of the primary containment or it may be constructed as a separate containment system. Secondary containment systems shall be designed and constructed such that the secondary containment system can be periodically tested in accordance with section 2637.
- (b) Except as provided in subdivision (j) below, the design and construction of all primary containment including any integral secondary containment system, shall be approved by an independent testing organization in accordance with industry codes, voluntary consensus standards, or engineering standards. Except as provided in subdivision (j) below, all other components used to construct the primary containment system, such as special accessories, fittings, coatings or linings, monitoring systems, and level controls shall also be approved by an independent testing organization. These requirements became effective on July 1, 1991 for underground storage tanks; January 1, 1992 for piping; and January 1, 1995 for all other components. The exterior surface of underground storage tanks shall bear a marking, code stamp, or label showing the following minimum information:
 - (1) Engineering standard used;
 - (2) Nominal diameter in feet;
 - (3) Nominal capacity in gallons;
 - (4) Degree of secondary containment;
 - (5) Useable capacity in gallons;
 - (6) Design pressure in pounds per square inch gauge;
 - (7) Maximum operating temperature in degrees Fahrenheit;
 - (8) Construction materials;
 - (9) Year manufactured; and
 - (10) Identity of manufacturer.

- (c) A primary containment system with or without an integral secondary containment system shall have wear plates (striker plates) installed, center to center, below all accessible openings. The plates shall be made of steel or other appropriate material if steel is not compatible with the hazardous substance stored. The width of the plate shall be at least eight inches on each side, or shall be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 1/8 inch and those made of other materials shall be of sufficient thickness to provide equivalent protection. The plate, if under 1/4 inch thick, shall be rolled to the contours of the underground storage tank and all plates shall be bonded or tack welded in place. A drop tube-mounted bottom protector may fulfill this requirement.
- (d) A secondary containment system which is not an integral part of primary containment shall be 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. The engineering specification shall include the construction procedures. Materials used to construct the secondary containment system shall have sufficient thickness, density, and corrosion resistance to prevent structural weakening or damage to the secondary containment system as a result of contact with any released hazardous substance. The following requirements apply to these secondary containment systems:
- (1) The secondary containment system shall be constructed to contain at least the following volumes:
 - (A) One hundred percent of the usable capacity of the primary containment system where only one primary container is within the secondary containment system.
 - (B) In the case of multiple primary containers within a single secondary containment system, the secondary containment system shall be large enough to contain 150 percent of the volume of the largest primary container within it, or 10 percent of the aggregate internal volume of all primary containers within the secondary containment system, whichever is greater. When all primary containers are completely enclosed within the secondary containment system, the restrictions of this subdivision do not apply.
 - (2) If the secondary containment system is open to rainfall, it shall be constructed to accommodate the volume of precipitation which could enter the secondary containment system during a 24-hour, 25-year storm in addition to the volume specified in subdivision (d)(1) above.
 - (3) If backfill material is placed in the secondary containment system, the volumetric requirements for the pore space shall be equal to the requirement in subdivision (d)(1) above. The available pore space in the secondary containment system backfill shall be determined using standard engineering methods and safety factors. The specific retention and specific yield of the backfill material, the location of any primary container within the secondary containment, and the proposed method of operation for the secondary containment system shall be considered in determining the available pore space.
 - (4) The secondary containment system shall be equipped with a collection system to accumulate, temporarily store, and permit removal of any liquid within the system.

- (5) The floor of the secondary containment system shall be constructed on a firm base and, if necessary for monitoring, shall be sloped to a collection sump. One or more access casings shall be installed in the sump and sized to allow removal of collected liquid. The access casing shall extend to the ground surface, be perforated in the region of the sump, and be covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A facility with locked gates will satisfy the requirements for protection against unauthorized access and vandalism. The casing shall have sufficient thickness to withstand all anticipated stresses with appropriate engineering safety factors and constructed of materials that will not be structurally weakened by the stored hazardous substance and will not donate, capture, or mask constituents for which analyses will be made.
- (6) Secondary containment systems using membrane liners shall be approved by an independent testing organization in accordance with industry codes, voluntary consensus standards, or engineering standards. A membrane liner shall contain no primary nutrients or food-like substances attractive to rodents and shall meet the requirements in Table 3.1 after a 30-day immersion in the stored hazardous substance.

Table 3.1
Standards for Membrane Liners
Some Acceptable Test Methods
(See Appendix I, Table A)

Property	Unsupported Liners	Supported Liners	Requirement
(A) Tensile strength	ASTM D638	ASTM D751	
Tensile strength at yield		Procedure B (Cut Strip Method)	>300 lbs./in/ of width
Tensile strength at break			>200lbs./in/ of width
(B) Permeability	ASTM E96	ASTM E96	<.0.65 gram/meter ² -hr
(C) Seam strength	ASTM D413	ASTM D751	=Parent material
(D) Solubility	ASTM D471	ASTM 471	<10% by weight
(E) Puncture	FTMS 101C Method 2065	FTMS 101C Method 2031	350 lbs. 80 lbs.
(F) Tear	ASTM D1004 DIEC	ASTM D751	125 lbs. 50 lbs.

- (7) A membrane liner, if used, shall be installed under the direct supervision of a representative of the membrane liner fabricator or a contractor certified by the fabricator.
- (8) The excavation base and walls for a membrane liner shall be prepared to the membrane liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects or protrusions.
- (9) The site shall be assessed to ensure that the secondary containment is always above the ground water and not in a 25-year flood plain, unless the containment and monitoring designs are for use under such conditions.

- (e) Laminated, coated, or clad materials shall be considered single-walled and do not fulfill the requirements of both primary and secondary containment.
- (f) Underground storage tanks with integral secondary containment systems, which satisfy the construction requirements of subdivision (b) above, fulfill the volumetric requirements for secondary containment specified in subdivision (d)(1) above.
- (g) Underground storage tanks with secondary containment systems shall be so designed and installed so that any loss of a hazardous substance from the primary containment will be detected by an interstitial monitoring device or method.
- (h) An underground storage tank which contains motor vehicle fuel and which is designed with an integral secondary containment system shall provide 100 percent secondary containment unless it is equipped with overfill prevention equipment in accordance with section 2635(c)(1)(C). In this case, the top portion of the tank, no greater than two feet wide along the length of the tank, may be single-walled.
- (i) Tanks designed and constructed pursuant to the provisions of this section shall be monitored according to the provisions of section 2632.
- (j) Effective June 1, 2012, if an independent testing organization approval for containment or components described in subdivision (b) above, does not include the compatibility of the hazardous substance stored or to be stored, an owner or operator may submit to the local agency a written, affirmative statement of compatibility for the specific hazardous substance from the manufacturer(s) of the containment or components. The written, affirmative statement of compatibility along with the independent testing approval specified in subdivision (b) above, shall satisfy the requirements in subdivision (b) above, that all primary containment including any integral secondary containment system and all other components used to construct the primary containment system be approved by an independent testing organization as compatible with the specific hazardous substance stored or to be stored. If an affirmative statement of compatibility made by a manufacturer conflicts with a later determination by an independent testing organization on the compatibility of the hazardous substance stored or to be stored, the written, affirmative statement of compatibility shall no longer satisfy the compatibility requirements of subdivision (b) above.
- (k) Subdivision (j) above, applies only to underground storage tanks that meet the construction requirements contained in Health and Safety Code sections 25291, excluding subdivision (a)(7), 25290.1, or 25290.2, as applicable.
- (l) On and after October 1, 2018, owners or operators shall demonstrate compatibility, 30 days before beginning to store or changing the hazardous substance, for all components used to construct the underground storage tank system which may come into contact with the hazardous substance to be stored and are not subject to subdivisions (b) or (d) above, such as spill containers, overfill prevention equipment, and ancillary equipment, by submitting to the local agency one of the following:
 - (1) A written approval from an independent testing organization, in accordance with industry codes, voluntary consensus standards, or engineering standards, for use with the hazardous substance to be stored;

- (2) A written approval from a state registered professional engineer for use with the hazardous substance to be stored. The approval shall contain an affirmative statement of compatibility with the substance and a specified acceptable range of blends or concentrations of the substance. The component shall be designed and constructed according to an engineering specification. The engineering specification shall include the construction procedures. Materials used to construct the component shall have sufficient corrosion resistance to prevent damage to the component as a result of contact with the hazardous substance; or
- (3) A written affirmative statement of compatibility from the manufacturer(s) of the components for use with the hazardous substance to be stored. The statement shall contain an affirmative statement of compatibility with the hazardous substance and a specified acceptable range of blends or concentrations of the hazardous substance.

(m) (1) On and after the effective date of this subdivision, and except as provided in paragraph (2) below, diesel containing up to 20 percent biodiesel meeting the American Society of Testing and Materials International standard D7467 shall be recognized as equivalent to diesel for purposes of satisfying subdivisions (b), (d), and (l) above, and section 2630(d) for all underground storage tank systems meeting the construction requirements contained in Health and Safety Code sections 25290.1, 25290.2, or 25291, excluding subdivision (a)(7).

(2) (A) Paragraph (1) may not be used for any material or component of the underground storage tank system for which the applicable approver required in subdivisions (b), (d), or (l) above, or section 2630(d) has determined is not compatible with diesel containing up to 20 percent biodiesel meeting the American Society of Testing and Materials International standard D7467.

(B) Within 30 days from the date of a determination from the applicable approver required in subdivisions (b), (d), or (l) above, or section 2630(d) that any material or component of the underground storage tank system is not compatible with diesel containing up to 20 percent biodiesel meeting the American Society of Testing and Materials International standard D7467, the owner or operator shall repair the underground storage tank system in accordance with section 2631.1(a).

Authority cited: Sections 25299.3 and 25299.7, Health and Safety Code.

Reference: Sections 25281, 25284.1 and 25291, Health and Safety Code; and 40 CFR §§ 280.20 and 280.32.

~~§ 2631.2. Biodiesel Blends - Variance from Material Compatibility Certification Requirements.~~

~~(a) This section provides for a temporary variance from certain provisions of sections 2631, 2631.1 and 2643, which will allow owners to store biodiesel blends up to 20 percent biodiesel (B20) by volume in underground storage tanks before testing by an independent testing organization has been completed.~~

~~(b) Biodiesel means a fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100, that meets the requirements of the American Society for Testing and Materials Standard Specification D-6751, and the registration~~

~~requirements of the United States Environmental Protection Agency as a fuel and as a fuel additive under the Clean Air Act (42 U.S.C. Sec. 7401).~~

- ~~(c) Biodiesel blend means a fuel that contains one percent to 99.99 percent biodiesel blended with diesel fuel.~~
- ~~(d) For purposes of this section, where a biodiesel blend is designated BX, X represents the percentage of the fuel, by volume, that is biodiesel. For example, B20 means a biodiesel blend that contains 20 percent, by volume, of biodiesel.~~
- ~~(e) For an underground storage tank storing biodiesel blends greater than B5 and up to and including B20, a variance from the approval requirements contained in section 2631, subdivision (b) and section 2631.1, subdivision (b) shall be provided by the local agency if all of the following requirements are satisfied:
 - ~~(1) The underground storage tank meets the construction requirements contained in Health and Safety Code section 25291, subdivision (a), paragraphs (1)-(6), inclusive and subdivisions (b)-(i), inclusive, section 25290.1 or section 25290.2, as applicable.~~
 - ~~(2) The underground storage tank and components are approved for the storage of petroleum diesel pursuant to section 2631, subdivision (b).~~
 - ~~(3) The underground storage tank satisfies and the owner or operator complies with all other applicable requirements contained in Chapter 6.7 of the Health and Safety Code, the regulations adopted to implement that chapter, and operational requirements contained in a permit issued pursuant to Section 25284 of the Health and Safety Code.~~
 - ~~(4) The owner provides both of the following to the local agency:
 - ~~(A) A Notice of Intent, signed by the owner, to store a biodiesel blend greater than B5 and up to and including B20 in the underground storage tank pursuant to the variance established in this section.~~
 - ~~(B) An "Operating Permit Application - Tank Information" form contained in Title 27, Division 3, Subdivision 1, Chapter 6 that identifies the biodiesel blend accompanied by a written statement from the owner that the underground storage tank and components are compatible with the biodiesel blend stored or to be stored. The biodiesel blend shall be identified by using the "Other Petroleum" selection under "Tank Use and Contents" on the form and specifying the biodiesel blend in accordance with subdivision (d). This statement shall be supported by documentation from the underground storage tank manufacturer or a nationally recognized research organization with applicable expertise.~~~~
 - ~~(5) The owner maintains documentation verifying that each delivery of biodiesel blend meets the applicable ASTM specification.~~~~
- ~~(f) For an underground storage tank system storing biodiesel blends up to and including B20, a variance from the certification requirements of section 2643, subdivision (f) shall be provided by the local agency if all of the following requirements are satisfied:~~

~~(1) The release detection method otherwise meets the requirements contained in section 2643 for the biodiesel blend stored.~~

~~(2) The owner provides both of the following to the local agency:~~

~~(A) A Notice of Intent, signed by the owner, to utilize release detection method or equipment pursuant to the variance established in this section.~~

~~(B) A written statement by the owner that the release detection method or equipment functions with the biodiesel blend stored or to be stored. This statement shall be supported by documentation from the manufacturer of the release detection method or equipment.~~

~~(3) The underground storage tank meets the requirements contained in paragraphs (1) to (3), inclusive, of subdivision (e).~~

~~(g) The variance established in subdivision (e) shall become inoperative on the following date, whichever date is sooner:~~

~~(1) Ninety days after the date of any decision by the applicable certification organization that determines that the certification for underground storage tanks that contain the biodiesel blend stored are included in the standard petroleum diesel approval or that determines that materials or components of the underground storage tank for which the variance was obtained are not compatible with the biodiesel blend stored.~~

~~(2) Thirty-six (36) months from the effective date of this section.~~

~~(h) The variance contained in subdivision (f) shall become inoperative thirty-six (36) months from the effective date of this section.~~

~~(i) If the variance established under subdivision (e) becomes inoperative pursuant to paragraph (2) of subdivision (g) or because the applicable certification organization determines that materials or components of the underground storage tank for which the variance was obtained are not compatible with the biodiesel blend stored, the owner shall empty the underground storage tank and the local agency shall inspect the underground storage tank pursuant to Health and Safety Code section 25288 before any other substance is stored.~~

~~Authority cited: Section 25299.3, Health and Safety Code. Reference: Sections 25281, 25286, 25290.1, 25290.2, 25291 and 25404.1, Health and Safety Code.~~