

33-24-08-10. Performance standards for new underground storage

tank systems. In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the underground storage tank system is used to store regulated substances, all owners and operators of new underground storage tank systems must meet the following requirements:

1. **Tanks.** Each tank must be properly designed and constructed, and any portion underground that routinely contains product must be protected from corrosion, using one of the following methods, except that all tanks installed or replaced after January 1, 2009, and located within one thousand feet of any existing community water system or any existing potable drinking water well shall comply with subdivision f. The corrosion protection methods must be in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

a. The tank is constructed of fiberglass-reinforced plastic. (NOTE: The following industry codes may be used to comply with this subdivision: Underwriters Laboratory Standard 1316, "Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products"; Underwriters Laboratories of Canada CAN4-S615-M83, "Standard for Reinforced Plastic Underground Tanks for Petroleum Products"; or American Society of Testing and Materials Standard D4021-86, "Standard Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks.");

b. The tank is constructed of steel and cathodically protected in the following manner:

(1) The tank is coated with a suitable dielectric material;

(2) Field-installed cathodic protection systems are designed by a corrosion expert;

(3) Impressed current systems are designed to allow

determination of current operating status as required in subsection 3 of section 33-24-08-21; and

(4) Cathodic protection systems are operated and maintained in accordance with section 33-24-08-21 or according to guidelines established by the department. (NOTE: The following codes and standards may be used to comply with this subdivision: Steel Tank Institute "Specification for STI-P3 System of External Corrosion Protection of Underground Steel Storage Tanks"; Underwriters Laboratories Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks"; Underwriters Laboratories of Canada CAN4-S603-M85, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids", and CAN4-G03.1-M85, "Standard for Galvanic Corrosion Protection Systems for Underground Tanks for Flammable and Combustible Liquids", and CAN4-S631-M84, "Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems"; or National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems", and Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids".);

c. The tank is constructed of a steel-fiberglass-reinforced-plastic composite. (NOTE: The following industry codes may be used to comply with this subdivision: Underwriters Laboratories Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks", or the Association for Composite Tanks ACT-100, "Specification for the Fabrication of FRP Clad Underground Storage Tanks".);

d. The tank is constructed of metal without additional corrosion protection measures provided that:

(1) The tank is installed at a site that is determined by a corrosion expert not be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(2) Owners and operators maintain records that demonstrate compliance with the requirements of paragraph 1 of this subdivision for the remaining life of the tank;

e. The tank construction and corrosion protection are determined by the department to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than subdivisions a through d; or

f. The tank is secondarily contained. (NOTE: The following industry codes may be used to comply with this subdivision: Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids", Underwriters Laboratories Standard 1746, "Standard for Safety for External Corrosion Protection Systems for Steel Underground Storage Tanks", or the Steel Tank Institute RP012-02, "Recommended Practice for Interstitial Tightness Testing of Existing Underground Double Walled Steel Tanks", or the Steel Tank Institute STI F841, "Standard for Dual Wall Underground Steel Storage Tanks".).

(1) Secondary containment tanks shall use one of the following designs:

(a) The tank is of double-walled fiberglass reinforced plastic construction;

(b) The tank is of double-walled steel construction; or

(c) The tank is of single-walled steel construction, with a fiberglass-reinforced plastic jacket which is designed to

contain and detect a leak through the inner wall.

(2) All secondary containment tanks shall be capable of containing a release from the inner wall of the tank and shall be designed with release detection according to subsection 7 of section 33-24-08-33.

2. Piping. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, and protected from corrosion using one of the following methods, except that all piping installed or replaced after January 1, 2009, and located within one thousand feet of any existing community water system or any existing potable drinking water well shall comply with subdivision e.

The corrosion protection methods must be in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

a. The piping is constructed of fiberglass-reinforced plastic. (NOTE:

The following codes and standards may be used to comply with this subdivision: Underwriters Laboratories Subject 971, "UL Listed Non-Metal Pipe"; Underwriters Laboratories Standard 567, "Pipe Connectors for Flammable and Combustible and LP Gas"; Underwriters Laboratories of Canada Guide ULC-107, "Glass Fiber Reinforced Plastic Pipe and Fittings for Flammable Liquids"; and Underwriters Laboratories of Canada Standard CAN 4-S633-M81, "Flexible Underground Hose Connectors".);

b. The piping is constructed of steel and cathodically protected in the following manner:

(1) The piping is coated with a suitable dielectric material;

(2) Field-installed cathodic protection systems are designed by a corrosion expert;

(3) Impressed current systems are designed to allow determination of current operating status as required in

subsection 3 of section 33-24-08-21; and

(4) Cathodic protection systems are operated and maintained in accordance with section 33-24-08-21 or guidelines established by the department. (NOTE: The following codes and standards may be used to comply with this subdivision: National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code"; American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage Systems"; American Petroleum Institute Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; and National Association of Corrosion Engineers Standard RP-01-69, "Control of External Corrosion on Submerged Metallic Piping Systems".);

c. The piping is constructed of metal without additional corrosion protection measures provided that:

(1) The piping is installed at a site that is determined by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operating life; and
(2) Owners and operators maintain records that demonstrate compliance with the requirements of paragraph 1 for the remaining life of the piping. (NOTE: National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code"; and National Association of Corrosion Engineers Standard RP-01-69, "Control of External Corrosion on Submerged Metallic Piping Systems", may be used to comply with this subdivision.);

d. The piping construction and corrosion protection are determined by the department to be designed to prevent the release or threatened release of any stored regulated substance in a manner

that is no less protective of human health and the environment than the requirements in subdivisions a through c; or

e. The piping is secondarily contained. (NOTE: The following industry code may be used to comply with this subdivision: Underwriters Laboratories Standard 971, "Standard for Nonmetallic Underground Piping for Flammable Liquids").

(1) Secondary containment piping shall use one of the following designs:

(a) The piping is of double-walled fiberglass-reinforced plastic construction;

(b) The piping is of double-walled steel construction;

(c) The piping is of single-walled steel construction, with a fiberglass-reinforced plastic jacket which is designed to contain and detect a leak through the steel wall; or

(d) The piping is of double-walled nonmetallic flexible construction.

(2) All secondary containment piping shall be capable of containing a release from the inner wall of the piping and shall be designed with release detection according to subsection 4 of section 33-24-08-34. (NOTE: The secondary containment requirements do not apply to suction piping that meets the standards as listed in subdivision b of subsection 2 of section 33-24-08-31.).

3. Spill and overfill prevention equipment.

a. Except as provided in subdivision b, to prevent spilling and overfilling associated with product transfer to the underground storage tank system, owners and operators must use the following spill and overfill prevention equipment:

(1) Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from

the fill pipe (for example, a spill catchment basin); and

(2) Overfill prevention equipment that will:

(a) Automatically shut off flow into the tank when the tank is no more than ninety-five percent full;

(b) Alert the transfer operator when the tank is no more than ninety percent full by restricting the flow into the tank or triggering a high-level alarm; or

(c) Restrict flow thirty minutes prior to overfilling, alert the operator with a high-level alarm one minute before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

b. Owners and operators are not required to use the spill and overfill prevention equipment specified in subdivision a if:

(1) Alternative equipment is used that is determined by the department to be no less protective of human health and the environment than the equipment specified in paragraphs 1 and 2 of subdivision a; or

(2) The underground storage tank system is filled by transfers of no more than twenty-five gallons [94.63 liters] at one time.

4. **Dispensers.** After January 1, 2009, any new dispenser, and any replacement dispenser where work is performed beneath any shear valves or check valves, or on any flexible connectors or unburied risers, shall be provided with secondary containment (UDC) beneath the dispenser. Secondary containment shall be:

a. Designed to contain a release from the dispenser and any connectors, fittings, and valves beneath the dispenser until the release can be detected and removed;

b. Designed with liquid-tight sides, bottom, and points of piping penetration;

- c. Constructed of fiberglass-reinforced plastic or other synthetic material of comparable thickness and durability; and
- d. Compatible with the stored substance.

5. **Submersible pumps.** Where necessary for secondary containment of the piping near the underground tank, after January 1, 2009, submersible pumps shall be provided with secondary containment around and beneath the pump head. Secondary containment shall be:

- a. Designed to contain a release from the pump head and any connectors, fittings, and valves beneath the pump head until the release can be detected and removed;
- b. Designed with liquid-tight sides, bottom, and points of piping penetration;
- c. Constructed of fiberglass-reinforced plastic, or other synthetic material of comparable thickness and durability; and
- d. Compatible with the stored substance.

6. **Installation.** All tanks and piping must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions.

(NOTE: Tank and piping system installation practices and procedures described in the following codes may be used to comply with the requirements of this subsection: American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage System"; Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or American National Standards Institute Standard B31.3, "Petroleum Refinery Piping", and American National Standards Institute Standard B31.4, "Liquid Petroleum Transportation Piping System".)

7. **Certification of installation.** All owners and operators must ensure

that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with subsection 6 by providing a certification of compliance on the underground storage tank notification form in accordance with section 33-24-08-12:

- a. The installer has been certified by the tank and piping manufacturers;
- b. The installer has been certified or licensed by the department;
- c. The installation has been inspected and certified by a registered professional engineer with education and experience in underground storage tank system installation;
- d. The installation has been inspected and approved by the department;
- e. All work listed in the manufacturer's installation checklists has been completed; or
- f. The owner and operator have complied with another method for ensuring compliance with subsection 6 that is determined by the department to be no less protective of human health and the environment.

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