7150.0205 DESIGN AND CONSTRUCTION.

Subpart 1. **Tanks.**

A. Tanks that do not meet the requirements of this subpart must be permanently closed according to part 7150.0410.

B. Owners and operators must ensure that any underground part of a tank that routinely contains product is properly designed, constructed, and protected from corrosion using one of the methods under this item. The tank must be:

(1) constructed of fiber-reinforced plastic, including:

(a) a costructural retrofit tank, with cathodic protection on corrodible structural supports; or

(b) a self-structural retrofit tank;

(2) constructed of steel and cathodically protected according to this subitem. All cathodic-protection systems under this subitem must be operated and maintained according to part 7150.0215. The tank must:

(a) be coated with a suitable dielectric material and a factory-installed sacrificial-anode system;

(b) have a field-installed cathodic-protection system designed and certified by a corrosion expert; or

(c) have an impressed-current system designed and certified by a corrosion expert that allows determination of current operating status as required under part 7150.0215, subpart 3;

(3) constructed of steel with a noncorrodible jacket of a design and thickness so that additional corrosion protection is not required;

(4) internally lined, provided that the tank is lined on or before December 22, 2007, according to part 7150.0215, subpart 4; or

(5) constructed and protected from corrosion using a method that prevents the release or threatened release of a stored, regulated substance and is no less protective of human health and the environment than the methods under subitems (1) to (4), as determined by the commissioner. The commissioner's determination under this subitem must be obtained in writing, and the owners and operators must keep the determination for the life of the tank.

C. Except for heating-oil tanks, owners and operators must:

(1) secondarily contain all hazardous-substance tanks;

(2) secondarily contain all tanks containing regulated substances, including retrofit tanks, installed or replaced after December 22, 2007; and

(3) ensure that:

(a) the secondary containment is capable of containing a release from the inner wall of a tank and designed with release detection according to part 7150.0330, subpart 6; and

(b) if a tank is replaced or retrofitted in accordance with this item, all piping appurtenant to the tank is secondarily contained and complies with subpart 3.

Subp. 2. **Codes of practice for tanks.** The codes of practice in this subpart must be used to comply with subpart 1, as applicable. The codes are incorporated by reference under part 7150.0500.

A. American Petroleum Institute, Interior Lining and Periodic Inspection of Underground Storage Tanks, API STD 1631.

B. NACE International, Corrosion Control of Underground Storage Tank Systems by Cathodic Protection, SP0285-2011.

C. Steel Tank Institute, Recommended Practice for Interstitial Tightness Testing of Existing Underground Double Wall Steel Tanks, R012.

D. Steel Tank Institute, ACT-100® Specification for External Corrosion Protection of FRP Composite Steel USTs, F894.

E. Steel Tank Institute, Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks, STI-P3®.

F. Steel Tank Institute, Standard for Dual Wall Underground Steel Storage Tanks, F841.

G. Steel Tank Institute, ACT-100-U® Specification for External Corrosion Protection of Composite Steel Underground Storage Tanks, F961.

H. Steel Tank Institute, Specification for Permatank®, F922.

I. Underwriters' Laboratories of Canada, External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids, CAN/ULC-S603.1-11.

J. Underwriters' Laboratories of Canada, Standard for Steel Underground Tanks for Flammable and Combustible Liquids, CAN/ULC-S603-14.

K. Underwriters' Laboratories of Canada, Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems, ULC-S631-05.

L. Underwriters' Laboratories of Canada, Standard for Fibre Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids, CAN/ULC-S615-14.

M. Underwriters Laboratories, Outline of Investigation for Underground Fuel Tank Internal Retrofit Systems, UL 1856.

N. Underwriters Laboratories, Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures, UL 1316.

O. Underwriters Laboratories, Standard for External Corrosion Protection Systems for Steel Underground Storage Tanks, UL 1746.

P. Underwriters Laboratories, Standard for Steel Underground Tanks for Flammable and Combustible Liquids, UL 58.

Subp. 3. **Piping.**

A. Piping that does not meet the requirements of this subpart must be permanently closed according to part 7150.0410.

B. Owners and operators must ensure that piping that routinely contains product is properly designed, constructed, and protected from corrosion using one of the methods under this item. The piping must be:

(1) constructed of a noncorrodible material;

(2) constructed of steel and cathodically protected according to this subitem. All cathodic-protection systems under this subitem must be operated and maintained according to part 7150.0215. The piping must:

(a) be coated with a suitable dielectric material and a sacrificial-anode system designed and installed according to industry standards or under the control of a corrosion expert;

(b) have a field-installed cathodic-protection system designed and certified by a corrosion expert; or

(c) have an impressed-current system designed by a corrosion expert that allows determination of current operating status as required under part 7150.0215, subpart 3; or

(3) constructed and protected from corrosion using a method that prevents release or threatened release of a stored, regulated substance and is no less protective of human health and the environment than the methods under subitems (1) and (2), as determined by the commissioner. The commissioner's determination under this subitem must be obtained in writing, and the owners and operators must keep the determination for the life of the tank.

C. Except for heating-oil piping and piping that conveys product under suction and meets the design requirements of part 7150.0300, subpart 6, item B, subitem (2), owners and operators must:

(1) secondarily contain hazardous substance piping;

(2) secondarily contain all piping containing regulated substances installed or replaced after December 22, 2007; and

(3) ensure that:

(a) the secondary containment is capable of containing a release from the inner wall of the piping and is designed with release detection according to part 7150.0340, subpart 4; and

(b) all secondarily contained piping installed after December 22, 2007, has secondary containment meeting the requirements of subparts 6 and 7 at each end of the piping segment, except for:

i. secondarily contained piping entering a building, provided that the building will contain a release until it can be detected and remedied; or

ii. transition joints approved for direct burial by the manufacturer when connecting secondarily contained piping to a single-wall pipe.

Subp. 4. **Codes of practice for piping.** The codes of practice under this subpart must be used to comply with subpart 3, as applicable. The codes are incorporated by reference under part 7150.0500.

A. American Petroleum Institute, Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems, API RP 1632.

B. NACE International, Control of External Corrosion on Underground or Submerged Metallic Piping Systems, SP0169-2013.

C. NACE International, Corrosion Control of Underground Storage Tank Systems by Cathodic Protection, SP0285-2011.

D. Steel Tank Institute, Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems, R892.

E. Underwriters' Laboratories of Canada, Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids, CAN/ULC S660-08.

F. Underwriters Laboratories, Standard for Nonmetallic Underground Piping for Flammable Liquids, UL 971.

G. Underwriters Laboratories, Outline of Investigation for Metallic Underground Fuel Pipe, UL 971A.

Subp. 5. **Spill-prevention and overfill-prevention equipment.**

A. Except as provided in item B, to prevent spilling and overfilling associated with product transfer to the UST system, owners and operators must use:

(1) spill-prevention equipment that prevents release of product to the environment when the transfer hose is detached from the fill pipe; for example, a spill bucket; and

(2) one of the following types of overfill-prevention equipment:

(a) equipment that automatically shuts off flow into the tank when the tank is no more than 95 percent full. Any flow-restricting overfill device in a vent line must be entirely removed when an automatic shutoff device is used to prevent releases from the tank;

(b) equipment that alerts the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank or triggering a high-level alarm audible to the transfer operator, provided that:

i. all tank openings are liquid tight when used in conjunction with flow-restricting devices in vent lines and high-level alarms;

ii. flow-restricting devices used in vent lines are not installed on UST systems after the effective date of this part;

iii. flow-restricting devices in vent lines are not allowed on suction systems with air eliminators;

iv. flow-restricting devices used in vent lines are not used in conjunction with overfill devices installed in the drop tube; and

v. flow-restricting devices in vent lines are not used in conjunction with coaxial stage 1 vapor-recovery systems; and

(c) vent-restriction devices in vent lines or auto-shutoff devices must not be used on tanks equipped with remote fill pipes or on UST systems where product is delivered under pressure.

B. Owners and operators are not required to use the spill-prevention and overfill-prevention equipment specified in item A if:

(1) alternative equipment is used that is determined by the commissioner to be no less protective of human health and the environment than the equipment specified in item A; or

(2) the UST system is filled by transfers of no more than 25 gallons at one time.

The commissioner's determination under subitem (1) must be obtained in writing, and the tank owners and operators must keep the determination for the life of the tank.

C. Before placing a UST system into service, the owners and operators must:

(1) test spill buckets for liquid tightness according to part 7150.0216, subparts 1 and 4; and

(2) test overfill devices for proper function according to part 7150.0216, subparts 1 and 5.

Subp. 6. **Submersible pump sumps.**

A. After December 22, 2007, owners and operators must provide any new or replacement submersible pump with secondary containment around and beneath the pump head. Secondary containment must be:

(1) designed to contain a leak from the pump head and any appurtenance or leak-detection device until the release can be detected and removed;

(2) designed with liquid-tight sides, bottom, and points of penetration;

(3) constructed of fiberglass-reinforced plastic or other synthetic material of comparable thickness and durability;

(4) compatible with the stored substance; and

(5) tested liquid tight before backfilling the secondary containment and placing the UST system into service according to part 7150.0216, subparts 1 and 4.

B. The following codes of practice are incorporated by reference under part 7150.0500 and must be used to meet the requirements of this subpart, as applicable:

(1) Underwriters' Laboratories of Canada, Under-Dispenser Sumps, ULC/ORD-C107.21; and

(2) Underwriters Laboratories, Outline of Investigation for Containment Sumps, Fittings and Accessories for Fuels, UL 2447.

Subp. 7. **Dispenser sumps.**

A. Owners and operators must install secondary containment under a dispenser if:

(1) the dispenser is part of a new UST system;

(2) new or replacement piping is connected to the dispenser;

(3) a dispenser is replaced with work performed below the shear valves; or

(4) the concrete or base material under the dispenser is replaced.

B. Secondary containment must be:

(1) designed to contain a leak from the dispenser and any components of a UST system in or under the dispenser until the leak can be detected and remedied;

(2) designed with liquid-tight sides, bottom, and points of penetration;

(3) constructed of fiberglass-reinforced plastic or other synthetic material of comparable thickness and durability;

(4) compatible with the stored substance; and

(5) tested liquid tight before backfilling the secondary containment and placing the dispenser into service according to part 7150.0216, subparts 1 and 4.

C. Owners and operators must ensure that underdispenser containment installed after April 29, 2019, allows for visual inspection and access to the components in the containment system.

D. Owners and operators performing dispenser repair are not required to install secondary containment.

E. The following codes of practice are incorporated by reference under part 7150.0500 and must be used to meet the requirements of this subpart, as applicable:

(1) Underwriters' Laboratories of Canada, Under-Dispenser Sumps, ULC/ORD-C107.21; and

(2) Underwriters Laboratories, Outline of Investigation for Containment Sumps, Fittings and Accessories for Fuels, UL 2447.

Subp. 8. **Emergency stops.** Owners and operators must have an emergency disconnect switch that complies with the Minnesota State Fire Code and is readily available to persons dispensing a regulated substance so as to disconnect electric power to pumps and dispensers in the event of an emergency. For purposes of this subpart, "readily available" means that an emergency disconnect switch is located within 100 feet of, but not less than 20 feet from, an exterior dispenser, and, for interior dispensers, the emergency disconnect switch is installed at a location approved by the local fire chief or the chief's designee.

Statutory Authority: *MS s 116.49*

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