

**1301:7-9-06 DESIGN, CONSTRUCTION,  
INSTALLATION, AND UPGRADING FOR UST SYSTEMS.**

**(A) Purpose and scope.**

For the purpose of prescribing rules pursuant to section 3737.88 of the Revised Code, the fire marshal hereby adopts this rule to establish performance standards and upgrading requirements for underground storage tanks containing petroleum or other regulated substances. This rule is adopted by the fire marshal in accordance with Chapter 119. of the Revised Code and shall not be considered a part of the "Ohio Fire Code." The following UST systems are exempted from this rule:

- (1) Any UST system holding hazardous wastes listed or identified under Chapter 3745-51 of the Administrative Code, or a mixture of such hazardous waste and other regulated substances;
- (2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under section 402 or 307(B) of the Federal Water Pollution Control Act (33 U.S.C.A. 1251 and following);
- (3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
- (4) Any UST system whose capacity is one hundred ten gallons or less;
- (5) Any UST system that contains a *de minimis* concentration of regulated substances;
- (6) Any emergency spill or overflow containment UST system that is expeditiously emptied after use;
- (7) Wastewater treatment tank systems;
- (8) Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C.A. 2014 and following);
- (9) Any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the United States nuclear regulatory commission;
- (10) Airport hydrant fuel distribution systems; and
- (11) UST systems with field-constructed tanks.

**(B) Performance standards for new UST systems.**

In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, all owners and operators of new UST systems shall comply with paragraphs (D) to (D)(2) of rule 1301:7-9-08 of the Administrative Code and shall meet the following requirements:

- (1) Each tank shall be properly designed and constructed, and any portion underground that routinely contains regulated substances shall be protected from corrosion in one of the following manners:
  - (a) The tank is constructed of fiberglass-reinforced plastic in compliance with:
    - (i) "Underwriters Laboratories Standard 1316-83-87; Standard for Glass-Fiber-Reinforced Plastic

Underground Storage Tanks for Petroleum Products" or

- (ii) "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 metal and cathodically protected in the following manner:
- (i) The tank is coated with a suitable dielectric material;
  - (ii) Field-installed cathodic protection systems are designed by a corrosion expert;
  - (iii) Impressed current systems are designed to allow an inspection to determine current operating status every sixty days; and
  - (iv) The tank and cathodic protection system meet the requirements of one of the following:
    - (a) "Steel Tank Institute Specification for STI-P3-87 System of External Corrosion Protection of Underground Steel Storage Tanks";
    - (b) "Underwriters Laboratories Standard 1746-89; Corrosion Protection Systems for Underground Storage Tanks"; or
    - (c) "National Association of Corrosion Engineers Standard RP-0285-85; Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and "Underwriters Laboratories Standard 58-86; Standard for Steel Underground Tanks for Flammable and Combustible Liquids."
- (c) The tank is constructed of a steel-fiberglass-reinforced-plastic composite in compliance with "Underwriters Laboratories Standard 1746-89; Corrosion Protection Systems for Underground Storage Tanks", "The Association for Composite Tanks Act-100-89; Specification for the Fabrication of FRP Clad Underground Storage Tanks", or "Steel Tank Institute STI-F894-90; Specification for External Corrosion Protection of FRP Composite Steel Underground Storage Tanks."
- (d) The tank is constructed of metal in compliance with "Underwriters Laboratories Standard 58-86; Standard for Steel Underground Tanks for Flammable and Combustible Liquids" without additional corrosion protection measures provided that:
- (i) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and
  - (ii) Owners and operators maintain records that demonstrate compliance with the requirements of paragraph (B)(1)(d)(i) of this rule for the remaining life of the tank.

- (e) The tank construction and corrosion protection are determined by the bureau chief prior to installation 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 applicable paragraphs (B)(1) to (B)(1)(d) of this rule.
- (2) The piping that routinely contains regulated substances and is in contact with the ground shall be properly designed, constructed, and protected from corrosion in one of the following manners:
- (a) The piping is constructed of fiberglass-reinforced plastic in compliance with "Underwriters Laboratories Subject 971; UL Listed Non-Metal Pipe" and "Underwriters Laboratories Standard 567-89; Pipe Connectors for Flammable and Combustible and LP Gas".
  - (b) The piping is constructed of metal in compliance with "National Fire Protection Association Standard 30-96; Flammable and Combustible Liquids Code" and "American National Standards Institute B31; American National Standard Code for Pressure Piping" and cathodically protected in the following manner:
    - (i) The piping is coated with a suitable dielectric material;
    - (ii) Field-installed cathodic protection systems are designed by a corrosion expert;
    - (iii) Impressed current systems are designed to allow an inspection to determine current operating status every sixty days; and
    - (iv) The piping and cathodic protection systems meet the requirements of "American Petroleum Institute Publication 1632-96; Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", "National Association of Corrosion Engineers Standard RP-01-69-83; Control of External Corrosion on Submerged Metallic Piping Systems", or "Steel Tank Institute R892-89; Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems."
  - (c) The piping is constructed of metal in compliance with "American National Standards Institute B31; American National Standard Code for Pressure Piping" without additional corrosion protection measures provided that:
    - (i) The piping is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and
    - (ii) Owners and operators maintain records that demonstrate compliance with the requirements of paragraph (B)(2)(c)(i) of this rule for the remaining life of the piping.
  - (d) The piping construction and corrosion protection are determined by the bureau chief prior to installation 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 applicable paragraphs (B)(2) to (B)(2)(b)(iv) of this rule.

(3) Spill and overfill prevention equipment.

- (a) Except as provided in paragraphs (B)(3)(b) to (B)(3)(b)(ii) of this rule, to prevent spilling and overfilling associated with regulated substance transfer to the UST system, owners and operators shall use the following spill and overfill prevention equipment:
  - (i) Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill pipe; and
  - (ii) Overfill prevention equipment that will:
    - (a) Automatically shut off flow into the Tank when the tank is no more than Ninety-five per cent full;
    - (b) Alert the transfer operator when the tank is no more than ninety per cent 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 paragraphs (B)(3)(a) to (B)(3)(a)(ii)(c) of this rule if one of the following applies:
  - (i) Alternative equipment is used that is determined by the bureau chief prior to installation to be no less protective of human health and the environment than the equipment specified in paragraphs (B)(3)(a) to (B)(3)(a)(ii)(c) of this rule; or
  - (ii) The UST system is filled by transfers of no more than twenty-five gallons at one time.

(4) Installation.

All tanks and piping shall be properly installed in accordance with the manufacturer's instructions and either "Petroleum Equipment Institute Publication RP100-97; Recommended Practices for Installation of Underground Liquid Storage Systems" or "American Petroleum Institute Publication 1615-96; Installation of Underground Petroleum Storage Systems."

- (5) All owners of newly installed UST systems shall obtain the signature of the installer, who shall be certified pursuant to rule 1301:7-9-11 of the Administrative Code, on either the new facility registration application or the modified registration application required by rule 1301:7-9-04 of the Administrative Code whereby the installer certifies that the installation of the UST system is in compliance with this rule and that all work listed in the manufacturer's installation checklist has been completed.

**(C) Upgrading of existing UST systems.**

(1) Owners and operators of all existing petroleum UST systems shall, on or before December 22, 1998, and owners and operators of all existing hazardous substance UST systems shall, on or before December 22, 1995, comply with one of the following requirements for all such UST systems:

- (a) New UST system performance standards in compliance with paragraphs (B) to (B)(5) of this rule;
- (b) The upgrading requirements in paragraphs (C)(2) to (C)(4) of this rule; or
- (c) Closure requirements in compliance with this chapter of the Administrative Code, including applicable requirements for corrective action under sections 3737.88 and 3737.882 of the Revised Code and this chapter of the Administrative Code.

(2) Tank upgrading requirements.

Metal tanks shall be upgraded to meet one of the following requirements:

- (a) A tank may be upgraded by internal lining if:
  - (i) The lining is installed in accordance with the requirements of paragraphs (E) to (E)(1) of rule 1301:7-9-08 of the Administrative Code, and
  - (ii) Within ten years after lining, and every five years thereafter, the lined tank is internally inspected and found to be structurally sound with the lining still performing in accordance with AAmerican Petroleum Institute Publication 1631-97; Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks@or ANational Leak Prevention Association Standard 631-98; Spill Prevention, Minimum Ten Year Life Extension of Existing Steel Underground Tanks by Lining without the Addition of Cathodic Protection.@
- (b) A tank may be upgraded by cathodic protection if the cathodic protection system meets the requirements of applicable paragraphs (B)(1)(b)(ii) to (B)(1)(b)(iv) of this rule and the integrity of the tank is ensured using one of the following methods:
  - (i) The tank is internally inspected and assessed to ensure that the tank is structurally sound and free of corrosion holes in accordance with "National Leak Prevention Association Standard 632-98; Internal Inspection of Steel Tanks for Upgrading with Cathodic Protection without Internal Lining" prior to installing the cathodic protection system;
  - (ii) The tank has been installed for less than ten years and is monitored monthly for releases using one of the methods listed in paragraphs (E)(4) to (E)(8) of rule 1301:7-9-07 of the Administrative Code and is in compliance with applicable paragraphs (E)(4) to (E)(8)(b) of rule 1301:7-9-07 of the Administrative Code;
  - (iii) The tank has been installed for less than ten years and is assessed for corrosion holes by

conducting two tightness tests in compliance with paragraph (E)(3) of rule 1301:7-9-07 of the Administrative Code. The first tightness test shall be conducted prior to installing the cathodic protection system. The second tightness test shall be conducted between three and six months following the first operation of the cathodic protection system; or

(iv) The tank is assessed for corrosion holes by a method that is determined by the bureau chief prior to the assessment to prevent releases in a manner that is no less protective of human health and the environment than Paragraphs (C)(2)(b) to (C)(2)(b)(ii) of this rule.

(c) A tank may be upgraded by both internal lining and cathodic protection if:

(i) The lining is installed in accordance with the requirements of paragraphs (E) to (E)(1) of rule 1301:7-9-08 of the Administrative Code; and

(ii) The cathodic protection system meets the requirements of applicable paragraphs (B)(1)(b)(ii) to (B)(1)(b)(iv) of this rule.

(3) Piping upgrading requirements.

Metal piping that routinely contains regulated substances and is in contact with the ground shall be properly designed and constructed in compliance with paragraph (B)(2)(a) or (B)(2)(b) of this rule, shall be cathodically protected, and shall meet the requirements of paragraphs (B)(2)(b)(ii) to (B)(2)(b)(iv) of this rule.

(4) Spill and overflow prevention equipment.

To prevent spilling and overflowing associated with regulated substance transfer to the UST system, all existing UST systems shall comply with new UST system spill and overflow prevention equipment requirements specified in paragraphs (B)(3)(a) to (B)(3)(b)(ii) of this rule.

**(D) Installation and upgrading permits.**

(1) Except where the owner or operator obtains an installation or upgrade permit from a certified fire safety inspector authorized by the fire marshal to conduct inspections of UST systems pursuant to section 3737.88 of the Revised Code and in compliance with this chapter of the Administrative Code, the owner and operator shall prior to beginning either an installation or upgrading of a tank or piping comprising an UST system, submit an installation or upgrading permit application to the fire marshal for each location where such installation or upgrading is to occur.

(2) The permit application shall be submitted on a form prescribed by the fire marshal and shall be accompanied by any drawings or additional information required on the prescribed application form and by the applicable permit fee described in either paragraph (D)(3) or (D)(4) of this rule.

(3) If a tank is being installed or upgraded, the permit fee shall be thirty-five dollars for each location described in the permit application. Installation or upgrade inspections conducted by a fire marshal employee shall be billed at a rate of sixty dollars per hour for each hour or fraction thereof spent at the

inspection location.

No owner or operator shall operate any UST system or portion thereof upon which there are past due permit fees or inspection fees. Inspection fees will be considered past due if they are not actually received by the fire marshal within thirty days of the date of the invoice. Nothing in this paragraph shall be construed to establish inspection fees charged by certified UST inspectors.

- (4) If only piping is being installed or upgraded, the permit fee shall be thirty-five dollars for each location described in the permit application. Installation or upgrade inspections conducted by a fire marshal employee shall be billed at a rate of sixty dollars per hour for each hour or fraction thereof spent at the inspection location.

No owner or operator shall operate any UST system or portion thereof upon which there are past due permit fees or inspection fees. Inspection fees will be considered past due if they are not actually received by the fire marshal within thirty days of the date of the invoice. Nothing in this paragraph shall be construed to establish inspection fees charged by certified UST inspectors.

- (5) The fire marshal may allow applications to be submitted less than thirty days prior to beginning the installation or upgrade in emergency situations.
- (6) The fire marshal shall review the permit application and, if the fire marshal determines that the proposed installation or upgrade is in compliance with this rule and that the appropriate fee has been paid, the fire marshal shall issue the permit. The fire marshal may place upon the permit such conditions as the fire marshal determines to be necessary to bring the proposed installation or upgrade into compliance with this rule. Any permit issued by the fire marshal under this paragraph shall not be construed as authority to violate any provision of this chapter. The fire marshal may revoke any permit issued pursuant to this paragraph if upon inspection any violation of this rule exists, if conditions of a permit have been violated, or if there has been any false statement or misrepresentation as to a material fact on the permit application or supporting documentation.
- (E) No owner or operator shall install or upgrade any UST system unless such installation or upgrading is supervised by an installer certified pursuant to rule 1301:7-9-11 of the Administrative Code. No owner or operator shall install or upgrade any UST system unless such installation or upgrading performed by an installer certified pursuant to rule 1301:7-9-11 of the Administrative Code is inspected by an employee of the fire marshal, a certified fire safety inspector whose local fire agency has been delegated authority to conduct such inspection pursuant to rule 1301:7-9-15 of the Administrative Code, or a certified UST inspector who has been certified by the fire marshal to conduct such inspection pursuant to paragraphs (O) to (W)(3)(I) of rule 1301:7-9-11 of the Administrative Code, as appropriate, for activities the permit or this chapter require be inspected.
- (F) Nothing in this rule shall exempt owners and operators of UST systems from complying with rule 1301:7-7-28 of the Administrative Code.

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