



TCEQ REGULATORY GUIDANCE

Program Support and Environmental Assistance Division
RG-475b • Revised January 2024

Installing a New or Replacement Underground Storage Tank

This is *module b* of the PST Super Guide, a comprehensive guide to issues relating to petroleum storage tanks (PSTs). This super guide provides an overview of laws and regulations for PSTs and can be used as an aid in minimizing potential risks. The guide does not replace laws and regulations which take precedence over any information in this publication.

Who should use this guide?

Underground storage tank (UST) owners and operators should use *module b* to understand the rules and procedures for installing or replacing an UST. UST owners and operators should note the following:

- You, the owner or operator of a PST, are responsible for ensuring compliance with all applicable laws and regulations.
- If your PST system is in Medina, Bexar, Comal, Kinney, Uvalde, Hays, Travis, or Williamson County, additional requirements related to the protection of the Edwards or the Trinity Aquifer may apply ([Title 30, Texas Administrative Code \[30 TAC\]](#),¹ Chapters 213 and 214).
- In addition to the laws and TCEQ rules, local governments and other state and federal agencies may have rules that apply.

For more compliance information, contact Small Business and Local Government Assistance at 800-447-2827 or TexasEnviroHelp@tceq.texas.gov.

What are the installation requirements?

UST systems must meet specific installation standards for equipment found in [30 TAC Section 334.46](#)² and follow procedures set by nationally recognized associations. Be sure to use the most recent version of the recommended practice provided by the association.

All UST system installations must have a contractor licensed by TCEQ to conduct the installation according to applicable requirements. A registered contractor will know the details of how to follow TCEQ standards, however, compliance is ultimately your

1. www.tceq.texas.gov/goto/view-30tac
2. www.tceq.texas.gov/goto/view-30tac

responsibility. For more information on licensing requirements, please refer to our [Licensed Underground Storage Tank Contractors](#)³ (RG-475c) module.

Before installing new or replacement tanks or piping, you must:

- Submit a [construction notification form](#)⁴ (TCEQ-00495) to the TCEQ at least 30 days before starting construction.
- Notify the agency's regional office (by phone, fax, or email) between 24 and 72 hours before work on the installation begins.

Find the full construction notification requirements in [30 TAC Section 334.6](#).⁵

Coordinate with your contractor to decide who will make this notification.

The tank excavation zone and piping trenches need adequate vertical and horizontal space for the tanks, piping, and associated equipment for proper placement and compaction. They must also not interfere with other foundations and existing structures and must be at least three feet from the base of adjacent structures and any underground utility easements and property lines. A licensed professional engineer will need to approve of any distance less than three feet.

Use sand, crushed rock, or pea gravel that is clean, washed, suitably graded, and noncorrosive for your bedding and backfill. Select the appropriate material for your system according to the tank and piping manufacturer's specifications. If your facility is in an area with a high-water table or that tends to flood, you must also properly anchor your tanks to protect them from floating or moving, which could jeopardize the integrity of the UST system.

Prior to initial use, the installer must physically inspect and test the tanks and piping to ensure that there are no leaks in the system. These tests include air testing for tanks, piping, fittings, and valves, tightness testing for tanks and piping, and any applicable corrosion protection testing.

Register new tanks within 30 days of the initial delivery of any regulated substance using the [Registration and Self-Certification form](#)⁶ (TCEQ-0724). The responsible UST installer or on-site supervisor must also certify any tank installation or underground installation activities on the same form.

3. www.tceq.texas.gov/downloads/publications/rg/rg-475c.pdf

4. www.tceq.texas.gov/downloads/permitting/waste-registration/forms/pst/0495.pdf

5. www.tceq.texas.gov/goto/view-30tac

6. <https://www.tceq.texas.gov/goto/00724>

What are the design and construction requirements?

All UST systems must meet specific technical standards found in [30 TAC Section 334.45](#)⁷ for structural integrity and protection from corrosion to prevent releases. The components of the UST system must also be made of, or lined with, materials that are compatible with regulated substances.

Tanks and tank components

Tanks must be designed and constructed according to industry codes of practice.

Materials used for tanks may be:

- fiberglass-reinforced plastic,
- steel with a cathodic protection system,
- steel/fiberglass-reinforced plastic composite tank, or a steel tank with a bonded fiberglass-reinforced plastic external cladding,
- steel with a bonded polyurethane external coating, or
- steel completely contained within a nonmetallic jacket.

All metallic fittings must be protected from corrosion either by isolating them from water and backfill material or confirming they are coated in dielectric material and cathodically protected.

Striker plates must be located on the interior bottom surface of all fill and gauge openings on the tank.

Tanks must also be equipped with spill and overfill prevention equipment. See our [Preventing Petroleum Storage Tank Spill and Overfill Prevention and Control](#)⁸ (RG-475e) module for more information.

Piping and piping components

Piping must be designed and constructed according to industry codes of practice.

Materials used for piping may be:

- fiberglass-reinforced plastic,
- coated steel with cathodic protection, or
- flexible nonmetallic material.

7. www.tceq.texas.gov/goto/view-30tac

8. www.tceq.texas.gov/downloads/assistance/publications/rg-475e-petroleum-storage-tank-spill-and-overfill-prevention-and-control

For pressurized piping systems, shear or emergency shutoff valves must be properly installed and anchored at the base of the dispenser. Shutoff valves need to include a fusible link.

Flexible connectors must be installed at both ends of a pressurized piping system unless the piping is inherently flexible.

Other UST system components

Fill pipes and underground vent lines need to be designed according to the piping requirements and must be protected from corrosion. Fill pipes must also be equipped with spill and overfill prevention equipment and a drop tube that extends to within 12 inches of the tank bottom.

Tanks and piping must be monitored for releases, so release detection equipment must be designed according to the requirements for your system. For more information, see our [Release Detection and Inventory Control for Underground Storage Tanks](#)⁹ (RG-475g) guidance.

UST systems installed after Jan. 1, 2009

New and replacement tanks and new piping must be double walled to meet the secondary containment requirements.¹⁰ You must monitor the interstitial space (the space between the primary and secondary wall) of tanks and lines for a release of product. External liners do not meet secondary containment requirements for systems installed after Jan. 1, 2009.

You can replace up to 35% of the total original length of an existing single-wall line without needing secondary containment. If, however, you replace more than 35% of the original length or the replaced line segment connects the existing line to a new dispenser, the entire line must be secondarily contained.

You must install double-walled dispenser sumps with any new dispenser. All sumps and manways used for interstitial monitoring of piping, and all sumps which serve new dispensers installed on or after Jan. 1, 2009, must be:

- compatible with the stored substance,
- installed and maintained in a manner that assures that sides, bottoms, and penetration points are liquid tight,
- inspected for tightness annually,
- tightness-tested at installation and every three years thereafter, and
- equipped with a liquid-sensing probe that will alert you if more than 2 inches of liquid collects.

Any liquid or debris found in sumps or manways must be removed within 96 hours of discovery.

9. www.tceq.texas.gov/downloads/assistance/publications/rg-475g-release-detection-and-inventory-control-for-underground-storage-tanks

10. See 30 TAC Subsection 334.45(d)(1)(E).

What installation records do I need to keep?

You must keep installation documentation for the life of the system.¹¹ Installation documentation must include:

- general information relating to the installation activity (including certifications),
- as-built plans and specifications, and
- equipment information (instructions, warranty information, inspection and maintenance schedules, etc.) for all UST system components.

However, you should keep any other records that show your system is compliant with the technical and installation standards. You will also need to keep records of any system modifications, revisions, or registration amendments that take place after installation.

Maintain the results of all equipment tests, including the air tests and the tightness tests conducted on the tanks and piping at the time of installation, for at least five years.

Where do I find more information?

Find complete requirements in [30 TAC](#)¹² for:

- Technical and installation standards for new USTs (30 TAC Section 334.45 and 334.46)
- Construction notification requirements (30 TAC Section 334.6)
- Reporting and recordkeeping requirements (30 TAC Section 334.10)
- Tanks in the Edwards Aquifer (30 TAC Chapter 213)
- Tanks over other aquifers (30 TAC Chapter 214)

Other online resources include:

- [Guidance for tank owners and operators](#)¹³ developed by our Small Business and Local Government Assistance (SBLGA) program.
- Links to additional webpages about registering PSTs, technical requirements for regulated PSTs, and LPST cleanup are available on the [Petroleum Storage Tanks webpage](#).¹⁴
- [TCEQ form and publication search](#).¹⁵
- Instructions on how to [find contractors to install USTs](#).¹⁶

11. See recordkeeping requirements in 30 TAC Subsections 334.46(i) and 334.10.

12. www.tceq.texas.gov/goto/view-30tac

13. www.tceq.texas.gov/assistance/industry/pst/

14. www.tceq.texas.gov/permitting/pst_cert.html

15. www.tceq.texas.gov/publications

16. www.tceq.texas.gov/remediation/pst_rp/license_ust.html

Industry recommended practices:

- Petroleum Equipment Institute Publication RP-100, [Recommended Practices for Installation of Underground Liquid Storage Systems](#)¹⁷ is available for purchase.
- American Petroleum Institute Publication 1615, [Installation of Underground Petroleum Storage Systems](#)¹⁸ is available for purchase.

17. www.pei.org/rp100

18. www.techstreet.com/api/standards/api-rp-1615?product_id=1780646