

# **CARROLLTON FIRE RESCUE**

***FIRE MARSHAL'S OFFICE***



## **CONSTRUCTION GUIDE FLAMABLE STORAGE TANKS**

**2022 Edition**

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*Fire Marshal's Office*

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*Fire Marshal's Office*

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## **GENERAL PERMIT REQUIREMENTS**

The goal of the Fire Prevention Division is to assist its customers in understanding our submittal, plan review and inspection process and policies, as they pertain to new construction and finish outs. Familiarity with and adherence to these guidelines can greatly assist you in compliance with local codes, ordinances and inspections.

This guide does not replace, nor supersede any adopted codes and/or ordinances adopted by the City of Carrollton, or determinations and positions of the Fire Chief or Fire Marshal.

To expedite the plan review and inspection processes, please refer to the information listed below:

1. All contractors must be registered with the City of Carrollton Building Inspections Dept.
2. All plans submitted must be stamped and/or signed by a TCEQ Licensed Contractor or Texas Professional Engineer.
3. **One signed digital copy of plans and spec sheets shall be uploaded through the CityServe Portal for review.**
4. The contractor is responsible for ensuring that the system(s) being installed or serviced are in compliance with all current locally adopted codes – including, but not limited to the **2021 International Fire Code (IFC)**, **2021 International Building Code (IBC)**, NFPA Standards, and City of Carrollton **Ordinance #4044**.
5. Plans approved by the Fire Marshal's Office give authorization for construction.
6. Final approvals are subject to field verification.
7. Any approval issued by the Fire Prevention Division does not release the contractor or property owner from the responsibility of full compliance with all applicable codes and ordinances relating to the construction project.
8. All installations must concur with the approved plans. Any deviation from the approved plans requires a re-submittal to the Fire Prevention Division.
9. All plan review and inspection process steps must be followed. Deviation from the requirements may result in delays and possible rejection of plans or inspection delays.
10. All inspections require a permit and a set of approved plans on the job site.
11. Failure to have the approved drawings and permit on-site may result in a failed inspection and re-inspection fees.
12. The Fire Inspector will provide written/e-mailed results after each inspection.

It is the goal of the Fire Prevention Division to complete your plan review within the shortest possible time. **We strive to complete your plan review within fifteen (15) business days from receipt of the plan submittal package.** Please be advised that revisions, changes, or an incomplete submittal package may delay your final plan approval.

# **ABOVEGROUND & UNDERGROUND STORAGE TANKS**

These guidelines are to be followed when an aboveground or underground storage tank is moved, installed, or otherwise added. All storage tank permit requirements shall conform to the **2021 IFC**, as adopted and amended by the City of Carrollton **Ordinance No. 4044**.

This guide does not replace, nor supersede any codes and/or ordinances adopted by the City of Carrollton, or determinations and positions of the Fire Marshal's Office.

## **General Storage Tank Permit Procedures**

- All Above/Below grade tank installations &/or removals require a \$100 permit per tank.
- Tanks must be installed by a TCEQ licensed underground storage tank (UST) installer.
- No Above/Underground storage tank(s) or associated equipment may be installed, located, or manipulated on site until the plan submittal is approved & a permit is issued.
- with all applicable codes and ordinances relating to the construction project.
- All FMO inspection forms & permits shall be kept on the job site until final Inspection.

## **Above/Underground Storage Tank Installation Requirements**

- Approved flame arrestors and venting devices shall be installed in the vent lines.
- Emergency venting shall meet the requirements of NFPA 30, IFC and API 2028.
- The tank(s) shall be provided with secondary containment meeting UL standards.
- All tank(s), 250 gallons or greater, must meet or exceed UL 2085.
- Storage tank systems shall be provided with an approved method of leak detection from any component of the system. The leak detection system shall be designed and installed in accordance with NFPA 30 and as specified by IFC.
- A spill container of not less than 5 gal shall be provided at each fill connection.
- Anti-siphon devices shall be installed in each pipe connected to the tank, where the piping extends below the level of the tank.
- Any additional requirements of NFPA 30 and **2021 IFC** Chapter 57 shall also be met.
- Installations subject to vehicular impact shall meet 2021 IFC – 312.2 or 312.3
- Appropriate labeling and signs in accordance with IFC must be provided:
  - A permanent sign shall be placed at the fill point for the tank, documenting the filling procedure and tank calibration chart.
  - “Smoking or Open Flames Prohibited”
  - An approved emergency procedures sign in accordance with IFC
  - Permanent sign indicating, “Parking in Fire Lane is prohibited while filling tank”.
  - A placard specifically identifying the material therein; (NFPA 704 compliant)
  - A permanent placard listing UL standards the tank is required to meet.

## **Above/Underground Storage Tank Fill System Requirements**

- An overfill prevention system shall be provided for each tank to prevent being filled in excess of 95% capacity. The system must meet the requirements of IFC.
- During fill operation, the system shall:
  - Provide an independent means of notifying the person filling that the fluid level has reached 90 percent of tank capacity by providing a tank level gauge marked at 90 percent of tank capacity, or other approved means.
  - Automatically shut off fuel flow when the quantity reaches 95% of tank capacity.
  - Reduce flow rate to max 15 gpm so that at the reduced flow rate, the tank will not overflow for 30 minutes, and automatically shut off flow into the tank so that none of the fittings on the top of the tank are exposed to product because of overfilling.
- Emergency shutoffs shall be provided during filling and dispensing operations.
- The tank fill connection shall provide a means of connecting directly to the vehicle fuel delivery hose so that no fuel is exposed to the open air during the filling operation.
- Relief valves, both emergency & normal, shall be provided.
- Pump dispensing devices shall be equipped with vapor-recovery connections.
- Dispensing locations shall limit fuel delivery to 25 gallons and require a manual action to resume, in accordance with IFC

## **Underground Storage Tank Specific Requirements**

- Safety straps & Deadman's must be installed for each underground storage tank.
- Thrust blocks must be installed at each change in direction of the pipe.
- Dry Sumps. Approved sampling tubes of min. 6" in diameter shall be installed in the backfill material of each underground flammable or combustible liquid storage tank.
  - The tubes shall extend from a point 12" below avg grade of excavation to ground level and shall be provided with suitable surface access caps.
  - Sampling tubes shall be placed in the product line excavation within 10 feet of the tank excavation and one every 50 feet routed along the product lines towards the dispensers, a minimum of two are required.
- Each tank site shall provide a sampling sump at the corners of the excavation with a minimum of 4 sumps.
- A permanent sign shall be placed at the fill point for the tank, documenting the filling procedure and tank calibration chart.

## **Above/Underground Storage Tank Plan Submittal Requirements**

One set of digitally signed plans and a set of data/spec sheets shall be uploaded through the CityServe Portal for review.

**Each submittal packet shall contain the following:**

- Copy of Contractors Texas Commission on Environmental Quality (TCEQ) License
- All requirements listed above shall be identified and listed in the package
- A full equipment listing of all tanks, piping, valves and other equipment.
- Data specifications sheets for all equipment shall be provided
  - Specific materials on data sheets shall be identified by arrow or highlighter
  - Data Sheets for Document Box are required (*See example below*)
- A written description of the operation of the tank.
- Documentation of tank testing and ability to hold a vacuum.



**Approved Document Box**

**Plans submission Package Requirements:**

- Site plan drawings shall include:
  - a. Primary and emergency power hookups (if provided)
  - b. All buildings and structures
  - c. Fire lanes and fire hydrants
  - d. Location(s) of all tanks and dispensing locations.
  - e. Location(s) vent lines, underground product lines, leak detection, dry sumps
- Plan drawings shall show plan view, section view and any other pertinent info.
- Plan drawings shall be generated by the installing company and shall not be copied and marked according to installation.

## **INSPECTION REQUEST PROCESS**

The following guidelines shall be followed when requesting an inspection:

- All inspection requests shall be coordinated by contacting the inspector on your permit.
- All requests shall be submitted via e-mail
- Contact your inspector at least 72 hours in advance of the requested inspection.

**\*\*\* Note: Due to limited staffing, your requested inspection may need to be scheduled more than 72 hours out. \*\*\***

### **Flammable Storage Tank Inspection Request Format:**

**Subject Line of e-mail shall contain:**

- Type of inspection - Address of installation - Permit #
- (i.e., Underground Tank Visual Request – 1234 Any St. – Permit #202201120)

**Body of e-mail shall contain:**

- Name, complete address, phone number and e-mail of installing company
- Name, cell number and e-mail of lead technician at the acceptance test
- Preferred Date and Time & Alternated Date and Time requested



## **ACCEPTANCE TESTING PROCESS**

- An approved set of “AS BUILT” plans shall be posted at an approved location within the business in an approved labeled document bin.
- A representative of the requesting company must be present at time of inspection who can effectively communicate and answer questions from the Fire Inspector.
- Permit must be kept on the jobsite and presented to the inspector upon request.
- City of Carrollton Fire Marshal’s Office approved (stamped) plans must be kept on the job site and presented to the inspector prior to beginning the inspection.
  - ***Contractor shop drawings are not considered approved plans.***

### **Underground Storage Tank Acceptance Test:**

1. ***Foundation:*** Verify tanks are on a stable and level surface
2. ***Anchors In Place:*** Anchors shall be in place to prevent tank movement.
3. ***Dry Sumps:*** Must be exposed to verify installation and proper location.
4. ***Diking / Secondary Containment:*** Spill containment must be provided and will be evaluated for adequacy
5. ***Line Test:*** An air pressure soap test shall be conducted to inspect for leaks at all connection points.
6. ***Leak Detection:*** Leak detection devices shall be inspected and tested to verify operability
7. ***Final:*** Ensure that all tanks, lines etc. match the approved plans.

### **Aboveground Storage Tank Acceptance Test:**

1. ***Tank Label:*** Verify that the tank label is accurate and visible
2. ***Foundation:*** Verify tanks are on a stable and level surface
3. ***Anchors In Place:*** Anchors shall be in place to hold tank in place.
4. ***Diking / Secondary Containment:*** Spill containment must be provided and will be evaluated for adequacy
5. ***Line Test:*** An air pressure soap test shall be conducted to inspect for leaks.
6. ***Leak Detection:*** Leak detection devices shall be inspected and tested to verify operability
7. ***Traffic Protection:*** Verify bollard placement if applicable
8. ***Final:*** Ensure that all tanks, lines etc. match the approved plans.