

City of Plano



Fire - Rescue

Flammable Liquids and Liquefied Petroleum Gas Guidelines

Development Guidelines are provided based on the 2012 International Fire Code, Local Amendments, and Planning Department Regulation as of January, 2015. For additional information see our web site at www.planofire.org

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Flammable Liquid Tanks and LPG Plan Submittal Guidelines For Plano Fire Rescue

The Fire Department desires to assist its customers in the understanding of our submittal policy, procedure, and application process to achieve first-submittal approvals.

These guidelines:

- Are intended to assist in the preparation and submittal of flammable liquid and liquid petroleum gas (LPG) plans for installation in the City of Plano.
- Contain pertinent information relating to the City of Plano adopted codes.
- Are not, however, to be interpreted as containing all data required for proper system design and/or approval.

The **Submitting Contractor** is responsible for complying with all locally adopted codes including the International Codes with local amendments.

These Guideline sections contain information related to:

- **General**
 - Fees (tank fees only)
 - Policies
 - Codes, and Local Amendments (Flammable Liquid and LPG Only)
- **Project Approval Process**
- **Requirements**
 - Plan submittal and specifications
 - Vehicle Impact Protection
 - Fuel tank removal

General

Flammable Liquid Tank and LPG Tank Fees

The general contractor normally pays for initial permit fees with the permit through the Building Inspections Department.

Fire Department Fee Schedule

Miscellaneous Fees

Flammable and Combustible Liquid Storage Tank and Piping =	\$250 each Tank
LP Gas Storage Tank (New Installation) =	\$250 each Tank
Expedited Plan Review (see Policy) =	\$125
After Hours Inspections	\$75.00 per hour (minimum \$150)
Same-day New Construction Inspection =	\$75.00 per hour (minimum \$150)

Polices

The Fire Department's goal is to provide a *complete and accurate review in the shortest possible time*. We will strive to accommodate plan review requests 5 working days.

Above Ground Fuel Tank Policy:

Above Ground Fuel Tanks in Light Industrial Zoning:

The City of Plano has adopted the 2012 International Codes including the 2012 International Fire Code.

We have the local amendments located at www.planofire.org or <http://www.plano.gov/1099/Code> . Our local amendments allow above ground fuel storage to be located in light industrial zoning in accordance with the 2012 IFC and local amendments.

Sec. 5704.2.9.6.1 is amended to read as follows:

Sec. 5704.2.9.6.1. Location Where Above-Ground Tanks are Prohibited. The storage of flammable or combustible liquids in outside above ground tanks is prohibited within each and every zoning district within the City of Plano with the exception of those districts which are zoned for light industrial zoning use. Installation of above ground tanks in other than light industrial zoning districts shall be permitted at the discretion of the Fire Chief following his review of the proposed installation location, and the fire protection for the storage area. Tanks shall not be located within one hundred feet (100') of the property line of any Group E, I or R occupancies.

Above Ground Fuel Tanks in Other than Light Industrial Zoning

To allow for above ground fuel tanks in other than light industrial Zoning, we have the following policy guidelines:

In zoning locations other than light industrial where above ground fuel tanks are allowed in accordance with this policy:

- CE (Commercial Employment)
- CC (Corridor Commercial)
- RE (Regional Employment)
- LC (Light Commercial)
- RC (Regional Commercial)

Location and Type of tank:

- Tanks less than or equal to 250 gallons shall be UL142 double wall.
- Tanks Greater than 250 gallons shall be UL2085 double wall.
- Tanks less than or equal to 2000 gallons shall be a minimum of 100 feet from property lines of E, I, and R Occupancies.
- Tanks greater than 2000 gallons shall be a minimum of 200 feet from property lines of E, I, and R Occupancies.

- Tanks exceeding 3000 gallons shall provide on-site fire protection as required by the Fire Chief.

All tanks shall meet the requirements of the International Codes and local amendments.

EXPIDITED PLAN REVIEW AND SAME DAY INSPECTION SERVICES

Scope of Program:

Effective the week of February 1, 2015, the City of Plano Fire Department will begin a same day plan review and inspection program for construction projects. The plan review and inspections will be completed and a fee assessed as the schedule allows. Same day requests will be processed on a first come first served basis until the schedule is full.

Days and Hours of Operation:

Same day plan review service

Available from 8:00 am until 11:00 am Monday thru Friday.

Same day inspection service

Will be scheduled from 1:30 pm to 5:00 pm with one hour meeting times.

Must be requested by 11:00 am by walk-in or by calling our inspection line at 972-941-7161.

Submittal Requirements:

The plans submittal requirements are the same as called out in our plan submittal guidebook and must include all information and scope for the entire permit as pulled through the Building Inspections Department. At a minimum the following information is needed:

- A completed Fire Department Submittal form.
- Three sets of rolled plans (24 – inch x 36 – inch) and one submittal/specification book.
- Fire alarm or sprinkler calculations as needed. Fire alarm plans must include battery calculations and voltage drop calculations for the effected circuit.

The plans will be processed in the order they are received on a first come – first served basis.

If, at any point in the review, the plan reviewer determines that the project requires information / approval from another department, the project will be kept for review within our typical plan review turn around times without assessing the same day review fee.

Types of Plans allowed for review:

- Underground fire sprinkler supply piping.

- Automatic fire sprinkler and fire alarm plans for remodel and interior finish permits for 50 sprinkler heads or 40 fire alarm devices maximum or 10,000 square feet maximum with no change in use.
- Fire sprinkler monitoring plans.
- Above ground fuel tanks 1,000 gallons or less
- Above ground propane tanks.

Types of Inspections allowed for Same Day Inspections:

- Fire Sprinkler Hydrostatic Test
- Fire Sprinkler Component Review
- Fire Sprinkler Visual Inspection
- Fire Sprinkler Insulation Inspection
- Fire Sprinkler Dry System Trip
- Fire Sprinkler Pre-action System Trip
- Fire Sprinkler FD Backflow Addition
- Fire Pump
- Underground Embedment
- Underground Flush
- Underground Hydrostatic Test
- Alternate Agent System
- Fixed Extinguishing System / Hood
- Knox Box Keys
- Fire Alarm Final, Fire Alarm Central Station Monitoring
- Fire Alarm Elevator Recall
- Underground Storage Tank Final, Pressure Test, Product Line Pressure, Strapping, Vapor Recovery Pressure, 2nd Line Pressure
- Flammable Liquid Tank
- High Piled Storage
- LPG Tank
- Materials Storage
- Smoke Control System / Stair Pressurization
- Gated Fire Lane Access
- In-home Day Care
- Fire Department Final Inspection

Fee's:

An expedited plan review fee of \$125 will be added to the construction permit for this requested service. This additional fee will be due regardless if submittals are approved or not approved.

A same day inspection fee of \$75 per hour (minimum \$150) will be added to the construction permit for this requested service. The additional fee will be due regardless if inspection is approved or disapproved.

Codes

Fire-Sprinkler Systems are to be installed in accordance with the 2012 International Codes and Local Amendments.

**SUMMARY OF
2012 INTERNATIONAL FIRE CODE AMMENDMENTS
FOR FIRE PROTECTION SYSTEMS
(see www.planofire.org for full copy of amendments)**

Section 603. Fuel-Fired Appliances

Sec. 603.1 is amended to read as follows:

Sec 603.1. Installations. The installation of nonportable fuel gas appliances and systems shall comply with the International Fuel Gas Code. The installation of all other fuel-fired appliances, oil lamps and portable devices such as blow torches, melting pots and weed burners, shall comply with this section and the International Mechanical Code.

Section 5703.6. General Requirements

Sec. 5703.6 is amended to add the following sentence:

An approved method of secondary containment shall be provided for underground tank and piping systems.

Section 5704. Storage

Sec. 5704.2.7 is amended by the addition of the following:

Secondary containment shall be provided for all Above and Underground Storage Tanks (UST) and product lines in the form of double wall tanks and piping. Alternate methods of secondary containment may be used if approved by the Chief.

Sec. 5704.2.9.6.1 is amended to read as follows:

Sec. 5704.2.9.6.1. Location Where Above-Ground Tanks are Prohibited. The storage of flammable or combustible liquids in outside above ground tanks is prohibited within each and every zoning district within the City of Plano with the exception of those districts which are zoned for light industrial zoning use. Installation of above ground tanks in other than light industrial zoning districts shall be permitted at the discretion of the Fire Chief following his review of the proposed installation location, and the fire protection for the storage area. Tanks shall not be located within one hundred feet (100') of the property line of any Group E, I or R occupancies.

5704.2.11.5 is amended to read as follows:

Sec 5704.2.11.5 Leak prevention. Leak prevention for underground tanks shall comply with Sections 5704.2.11.5.1 through 5704.2.11.5.3. An approved method of secondary containment shall be provided for underground tank and piping systems.

Sec. 5704.2.11.5.2 is amended to read as follows:

Sec. 5704.2.11.5.2. Leak detection. Underground storage tank systems shall be provided with an approved method of leak detection from any component of the system that is designed and installed in accordance with NFPA 30 and as specified in Section 5704.2.11.5.3.

Add Sec. 5704.2.11.5.3 is amended to read as follows:

Sec. 5704.2.11.5.3. Observation Wells. Approved sampling tubes of a minimum 6 inches 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 inches below the average grade of the excavation to ground level and shall be provided with suitable surface access caps. Each tank site shall provide a sampling sump at the corners of the excavation with a minimum of 4 sumps. Sampling tubes shall be placed in the product line excavation within 10 feet of the tank excavation and one every 50 feet routed along product lines towards the dispensers. A minimum of two are required.

Section 5706. Special Operations

Sec. 5706.5.4.5 and 5706.5.4.5.1 through 5706.5.4.5.3 are amended to read as follows:

Sec. 3406.5.4.5. Commercial, industrial, governmental or manufacturing. Dispensing of Class II and III motor vehicle fuel from tank vehicles into the fuel tanks of motor vehicles located at commercial, industrial, governmental, or manufacturing establishments is allowed where permitted, provided such dispensing operations are conducted in accordance with Sections 5706.5.4.5.1 through 5706.5.4.5.3.

Section 5706.5.4.5.1. Site requirements.

1. Dispensing may occur at sites that have been permitted to conduct mobile fueling.
2. A detailed site plan shall be submitted with each application for a permit. The site plan must indicate:
 - a) All buildings, structures, and appurtenances on site and their use or function;
 - b) All uses adjacent to the property lines of the site;
 - c) The locations of all storm drain openings, adjacent waterways or wetlands;

- d) Information regarding slope, natural drainage, curbing, impounding and how a spill will be retained upon the site property; and,
 - e) The scale of the site plan.
3. The Code Official is authorized to impose limits upon the times and/or days during which mobile fueling operations are allowed to take place, and specific locations on a site where fueling is permitted.
 4. Mobile fueling operations shall be conducted in areas not generally accessible to the public. Mobile fueling shall not take place with 15 feet (4.572 m) of buildings, property lines, or combustible storage.

Sec. 5706.5.4.5.2. Refueling Operator Requirements.

1. The owner of a mobile fueling operation shall provide to the jurisdiction a written response plan which demonstrates readiness to respond to a fuel spill, carry out appropriate mitigation measures, and to indicate its process to properly dispose of contaminated materials when circumstances require.
2. The tank vehicle shall comply with the requirements of NFPA 385 and Local, State and Federal requirements. The tank vehicle's specific functions shall include that of supplying fuel to motor vehicle fuel tanks. The vehicle and all its equipment shall be maintained in good repair.
3. Signs prohibiting smoking or open flames within 25 feet (7.62 m) of the tank vehicle or the point of fueling shall be prominently posted on 3 sides of the vehicle including the back and both sides.
4. A fire extinguisher with a minimum rating of 40:BC shall be provided on the vehicle with signage clearly indicating its location.
5. The dispensing nozzles and hoses shall be of an approved and listed type.
6. The dispensing hose shall not be extended from the reel more than 100 feet (30.48 m) in length.
7. Absorbent materials, non-water absorbent pads, a 10 foot (3.048 m) long containment boom, and approved container with lid, and a non-metallic shovel shall be provided to mitigate a minimum 5-gallon fuel spill.
8. Tanker vehicles shall be equipped with a fuel limit switch such as a count-back switch, limiting the amount of a single fueling operation to a maximum of 500 gallons (1,893 L) between resettings of the limit switch.

Exception: Tankers utilizing remote emergency shut-off device capability where the operator constantly carries the shut-off device which, when activated, immediately causes flow of fuel from the tanker to cease.

9. Persons responsible for dispensing operations shall be trained in the appropriate mitigating actions in the event of fire, leak, or spill. Training records shall be maintained

by the dispensing company and shall be made available to the Code Official upon request.

10. Operators of tank vehicles used for mobile fueling operations shall have in their possession at all times an emergency communications device to notify the proper authorities in the event of an emergency.

Sec. 5706.5.4.5.3. Operational Requirements.

1. The tank vehicle dispensing equipment shall be constantly attended and operated only by designated personnel who are trained to handle and dispense motor fuels.

2. Prior to beginning dispensing operations, precautions shall be taken to assure ignition sources are not present.

3. The engines of vehicles being fueled shall be shut off during dispensing operations.

4. Night time fueling operations shall only take place in adequately lighted areas.

5. The tank vehicle shall be positioned with respect to vehicles being fueled so as to preclude traffic from driving over the delivery hose and between the tank vehicle and the motor vehicle being fueled.

6. During fueling operations, tank vehicle brakes shall be set, chock blocks shall be in place, and warning lights shall be in operation.

7. Motor vehicle fuel tanks shall not be topped off.

8. The dispensing hose shall be properly placed on an approved reel or in an approved compartment prior to moving the tank vehicle.

9. The Code Official and other appropriate authorities shall be notified when a reportable spill or unauthorized discharge occurs.

Section 5804. Storage

Flammable Gas.

Sec. 5804.2 is amended by the addition of the following:

Sec. 5804.2. Maximum capacity within established limits. Tanks shall not be located within one hundred feet (100') of the property line of any Group A, E, I, or R occupancies.

Section 6103. Installation of Equipment LP Gas

Sec. 6103.2.1 is amended by the addition of the following sections:

Sec. 6103.2.1.8. Jewelry Repair, Dental Labs, and Similar Occupancies. Where natural gas service is not available, portable LP-Gas containers are allowed to be used to supply approved torch assemblies or similar appliances. Such containers shall not

exceed 20 pounds (9.0 kg) water capacity. Aggregate capacity shall not exceed 60 pounds (27.2 kg) water capacity. Each device shall be separated from other containers by not less than 20 feet.

Section 6104. Location of LP-Gas Containers

Sec. 6104.2 is amended to read as follows:

Sec. 6104.2. Maximum capacity within established limits. The manufacturing of LP-Gas shall be prohibited in each and every zoning district of the City of Plano. The storage and use of LP Gas shall be allowed only in industrial zoned districts of the City of Plano and as allowed in specific uses outlined in Section 6103 and 6104. Storage shall not be located within one hundred feet (100') of the property line of E, A, I, or R occupancies, except those permitted in single family districts in accordance with 6104.3.

Sec. 6104.3 is amended by the addition of the following:

Sec. 6104.3.3. Spas, Pool Heaters, and other listed devices. LP-Gas containers are allowed to be used to supply spa and pool heaters or other listed devices. Such container shall not exceed 500 gallon water capacity per lot for above ground containers or 1,000 gallon water capacity per lot for underground containers and shall be off loaded wholly on the property where the tank is located. See Table 6104.3 for location of containers.

Project Approval Process

Step One - Planning Department Review:

Planning Department approval is required for flammable liquid storage tank installations. They can be contacted at 972-941-7151 for submittal and approval requirements.

Step Two – Building Inspections Department Review and Permits:

Permits are required for Motor Vehicle Fuel-Dispensing Stations, Flammable and Combustible Liquid Storage Tanks, Liquefied Petroleum Gas Storage Tanks, Product Delivery Systems Installation and any additions, modifications, closures, and fuel tank removals.

A permit is not required for dispenser change-outs or repairs that do not modify the existing installation. Building Inspection approval is required for new installations, generators, and electrical work. The permit may not be issued for generators or fuel tanks prior to Fire Department approval.

Fire Department Review and Approval:

A submittal to the Fire Department for the tank designs is required. This is separate from the Building Inspections Department and Planning Department plan submittal and review process.

Submit three sets of installation plans and one data book for the proposed installation. Include a Plan Review Submittal Form (Figure 1) including the permit as issued by the Building Inspection Department.

Step Three - Construction:

Construction is the contractor responsibility to be completed in accordance with applicable laws, standards, and approvals.

Step Four - Inspection:

Once your plans are approved, you will be able to call our Fire Department inspection line at 972-941-7161 to schedule a Fire Inspector to come and witness the testing and installation of your project.

Both the Building Inspection Department and the Fire Department may require in-process and final inspections on the installation. The Building Inspections Department will issue the certificate of occupancy (where applicable) upon final inspection of the scope of the project.

Project Plan Submittal and Specifications

Submittal requirements:

Specifications and Plans for Fuel Dispensing Stations, Liquid Storage Tanks, Liquid Petroleum Gas Tanks shall include, as applicable but not limited to, the following information. This is intended as a guide only to assist with commonly overlooked information.

Submit one Fire Department Plan Review Submittal Form (Figure 1) including the permit number as given the project by the Building Inspections Department.

Submit one set of Manufactures product information sheets and calculations: Indicate the specific product being used on this project.

Submit three Site Plan type drawings of the entire property. The site plan shall show the following information:

- Plan shall be drawn to a common engineer scales such as 1" = 10', 20', 30', 40', or 50'.
- The title block shall contain: plan type; project name; city, county and state name.
- Label company name, contact name, address, and phone number of current property owner in the vicinity of the title block.
- Provide a vicinity map in the same orientation of plan showing subject property, north arrow, scale (or labeled "not to scale"), and adjacent thoroughfares within a one mile radius of site.
- Show current and proposed property boundaries/lot lines.
- Show and label floodplains, drainage ways, and creeks.
- Show and label existing and proposed buildings. Provide general building dimensions and distances between buildings.
- Show and label vehicle circulation lanes, private drives, fire lanes, and driveways. Dimension pavement widths, R.O.W., and/or easement widths, driveway throat widths, radii, and distances between driveways and intersecting streets.
- Show parking areas. Label as existing or proposed.
- Show, label, and dimension fuel loading zone for fuel trucks to park while refueling. This shall not be in a Fire Department access roadway or fire lane.
- Show existing and proposed water utilities and associated easements.
- Show any other applicable data for the installation

Submit three sets of Design Drawings for the installation. The design documents shall show the following information as applicable:

- Clearance from existing structures.
- Fuel Tank specifications and UL Listing
- Capacity of the proposed fuel tanks.
- Type of fuel/liqued storage proposed.
- Type of piping being provided.
- Embedment material / pea gravel locations.
- Shear and check valves.
- Sample tube locations and Size (see our amendments for requirements)
- Depth of cover and concrete thickness
- Vapor recovery piping.
- Overfill protection and leak detection being provided.
- Signs provided.
- Vehicle impact protection being provided
- Maximum excavation slope.
- Depth of cover for traffic and non-traffic areas.
- Backfill/bedding materials and separation from unstable soil methodology.
- Spill containment and overfill protection.
- Secondary containment.
- Release detection.
- Piping, valves, and fittings.
- Piping layout and trench dimensions.
- Corrosion protection system.
- Cathodic protection systems.
- Fire-protection equipment.
- Emergency shut-off devices and locations.
- User-attendance intercom system.
- Calculations as needed for float-out anchors, venting rates, cathodic protection.

Vehicle Impact Protection

Vehicle impact protection shall be provided for tanks in accordance with the 2012 International Fire Code. The requirements are shown below:

SECTION 312 VEHICLE IMPACT PROTECTION

312.1 General. Vehicle impact protection required by this code shall be provided by posts that comply with Section 312.2 or by other *approved* physical barriers that comply with Section 312.3.

312.2 Posts. Guard posts shall comply with all of the following requirements:

1. Constructed of steel not less than 4 inches (102 mm) in diameter and concrete filled.
2. Spaced not more than 4 feet (1219 mm) between posts on center.
3. Set not less than 3 feet (914 mm) deep in a concrete footing of not less than a 15-inch (381 mm) diameter.
4. Set with the top of the posts not less than 3 feet (914 mm) above ground.
5. Located not less than 3 feet (914 mm) from the protected object.

312.3 Other barriers. Physical barriers shall be a minimum of 36 inches (914 mm) in height and shall resist a force of 12,000 pounds (53 375 N) applied 36 inches (914 mm) above the adjacent ground surface.

Fuel Tank Removal

Building Inspections Department:

The Building Inspections Department will issue a no fee fuel tank removal permit.

Fire Department:

The Fire Department does not need to witness the removal of fuel tanks from sites in Plano.

Once you remove the fuel tank, documentation must be submitted to Plano Fire Rescue showing the tank size, location, identification numbers and other information from the tank, and disposal information. The documentation can be dropped off at 1901 Ave. K Plano TX 75086 or faxed to 972-941-7291 Attn: Fire Marshal's Office.

Be sure to include the permit number with your documentation that was issued by the Building Inspections Department. With this number, we will pass the Fire Department Final inspection that will close the fuel tank removal permit.

FIRE DEPARTMENT PLAN REVIEW SUBMITTAL FORM

Permit Number _____

1st Submittal Date _____ Resubmittal Date _____

Project Name _____

Project Address _____

Place “X” by Plan Type

- | | |
|--|----------------------------------|
| _____ Automatic Sprinklers (40+ heads) | _____ Central Station Monitoring |
| _____ Underground <i>Only</i> | |
| _____ Less than 20 Heads | _____ Liquid Storage Tanks |
| _____ 20-40 Heads | |
| | _____ Smoke Removal |
| _____ Fire Alarm System | |
| _____ Less than 10 initiating or
5 indicating devices | _____ As-Built / Revisions |
| | _____ Other _____ |

Submitting Contractor

Company Name _____

Contact _____ Phone Number _____

- **Three (3)** sets of plans and **one (1)** submittal/specification book and fire alarm or hydro calculations will be required.
- Contact person will be notified upon **completion** of plan review.
- **Maximum** size of blue prints “E”. **For underground sprinklers only: 24-inch X 36-inch.**
- Submit all blue lines rolled. All calculations/submittals must be flat.
- Fire alarm plans must include complete battery calculations and voltage drop calculations for the effected circuit.

FIRE DEPARTMENT RECORDS <u>ONLY</u>		
A _____	R _____ Working Days _____	Reviewed By _____ Date _____

FIGURE 1: Fire Department Plan Review Submittal Form