

COMMERCIAL FIRE PROTECTION REQUIREMENTS

COMMERCIAL PLAN REVIEW PROCESS

All plans shall be submitted directly to Sunnyvale Fire Rescue via email at fire1@townofsunnyvale.org and those determined to require a third-party review will be notified via email on the email address provided on the Plan Review Permit Application.

When required for third-party, the submitting contractor shall be responsible for any and all fees and costs to review the plans. The contractor shall contact the third-party plan review company directly with regard to their fee schedule. There will be a permit fee once the Building Permit Application and submittals are received by the Town, see Fee Schedule.

Once reviewed and approved by the third-party, Sunnyvale Fire Rescue will permit the plans through Town Hall and a separate permit fee shall be paid at the time the permit is picked up.

The following types of plans are subject to be reviewed by a third-party plan review service.

- Fire Sprinkler Systems for facilities with a fire pump, standpipes, high-piled storage, hazardous materials, or complex and unique fire protection systems.
- Fire Alarm Systems for facilities with a fire pump, standpipes, high-piled storage, hazardous materials, or complex and unique fire protection systems.
- Smoke Exhaust/Smoke Control.

Additional types of plan review submittals may be selected for review by a third-party based upon the uniqueness or the project or complexity of the submittal. Sunnyvale Fire Rescue may still review plans approved by the third-party and additional revisions may be required.

APPROVED THIRD-PARTY PLAN REVIEW COMPANIES

Traditions Fire Consulting
P.O. Box 5587
Frisco, Texas 75035
(972) 979-0631
traditionsfire@gmail.com

PLAN SUBMITTAL and INSPECTION REQUIREMENTS

Sunnyvale Fire Rescue's goal is to provide a *complete and accurate review in the shortest possible time*. We will strive to accommodate plan review requests within 10 working days for the first submittals, and five working days for interior finishes (less than 20 affected sprinklers) and resubmittals.

- Complete sets of plans that comply with the design and plan requirements of the 2021 International Fire Code.
- Hydraulic calculations.
- Manufacturers' material information sheets for the sprinkler heads, piping, and backflow preventers.
- All plans shall be signed and sealed.
- Plans shall be submitted via email to fire1@townofsunnyvale.org.

All fire protection systems shall be designed and installed by a contractor registered with the Town of Sunnyvale and who is licensed and insured for fire protection. For contractor registration, contact the Permit Division in the Building Department at Town Hall.

All fire related inspections shall be scheduled via email at fire1@townofsunnyvale.org or by phone – (972) 203-4194.

Inspection shall be scheduled with Sunnyvale Fire Rescue by phone or email at a minimum of 48 hours prior to the day of inspection.

Stamped approved plan shall be on site for inspection.

All systems shall be pretested, and installer is required to be onsite during inspections.

TYPES OF PLAN REVIEW

- Reviews site plan for fire lanes and fire hydrant locations.
- Reviews site plan for location of building(s) on property.
- Reviews construction plans for fire-extinguishing system and Fire Alarm System, if applicable; Smoke Control System, if applicable; Standpipe System, if applicable; Automatic Smoke and Heat Vents, if applicable. Remote 5" Storz FDC and exterior access to Riser/Pump Rooms.
- Other related requirements, based on occupancy type and use, as applicable.
- Automatic fire sprinkler and fire alarm plans for remodel and interior finish permits for 20 sprinkler heads or any changes to fire alarm devices.
- Above ground fuel tanks.
- Plans shall not be submitted until the contractor has a confirmed contract to install a system.

Inspections above ceilings:

- All inspections shall be completed before the ceiling is closed.
- Hydrostatic test can be conducted as a partial inspection for commercial.
- All systems are required to be pretested prior to scheduling inspections.
- Installer is required on site for commercial sprinkler and alarm inspections.
- The Fire Department will issue a release to close the ceiling when all above ceiling inspections are complete. The completion of a hydro or visual does not automatically give approval to cover the ceiling.

High pile storage under 12,000 square feet:

- Show commodity, storage height, etc. used to design the system.
- Rack storage plan required prior to sprinkler plan approval.

High pile storage over 12,000 square feet:

- Show commodity, storage height etc. used to design the system.
- Rack storage plan required prior to sprinkler plan approval.
- Smoke and heat vents shall be shown as an overlay to the sprinkler plans. This ensures that sprinklers are not located in the vent cavity.

COMMERCIAL FREEZE PROTECTION

Piping installed in unheated areas shall be protected by use of one of the following methods.

1. Antifreeze system;
2. Dry pipe system;
3. Pre-action system;
4. Listed standard dry pendant, dry upright, or dry sidewall sprinklers extended from heated areas.

Antifreeze systems require a maximum concentration for glycerin for new systems of 48% by volume or a maximum concentration of propylene glycol of 38% by volume.

Existing systems shall not have concentrations exceeding 50% glycerin or 40% propylene glycol.

Antifreeze systems shall be tested annually prior to the onset of freezing weather.

FIRE DEPARTMENT KNOX FDC CAPS

In accordance with the International Fire Code, locking fire department connection caps will be required on all new commercial fire sprinkler and standpipe installations as required.

New Construction:

- All plans submitted must have the Knox 2 ½" FDC locking caps and Knox 5" Storz cap as required for the design of the system.
- Contractor can order the FDC plugs and caps through the Knox-Box Company by going to <http://www.knoxbox.com/store/> or by calling (800) 552-5669 or request a Knox Order form through the Sunnyvale Fire Marshal's Office.

Existing Systems:

- The fire department connections shall be inspected in accordance with NFPA 25. If caps are missing from the system, all items listed in NFPA 25 shall be verified. New caps meeting the requirements of the International Fire Code shall be installed. Sunnyvale Fire Rescue is using the Knox locking FDC cap system. The caps may be purchased from Knox using one of the above listed methods.
- The installing contractor shall back flush the FDC and it shall be witnessed by fire inspector.

Automatic Sprinkler System Requirements

- The FDC shall be remote, no closer than 1.5 times the height of the building as measured from the base. If possible, within 50-feet and no more than 100-feet of a fire hydrant.
- The FDC shall be clear and unobstructed with a minimum three (3) foot clearance. A single point for the Fire Department Connection (FDC) shall be provided for buildings with multiple risers.
- All inspectors' test, ball-drips, and main-drains shall be piped directly to the outside of the building.
- At least one inspection test valve shall be located at the remote system area.
- Reduced Pressure Zone valves shall be used on antifreeze systems.
- Risers shall be located in heated areas. Riser-room electrical heaters shall be hard wired.
- The riser-room shall be large enough to facilitate maintenance and testing of the sprinkler system.
- The riser room shall have an access door accessible from the outside. The door shall be marked "Riser Room".
- Elevator shaft tops and machine rooms shall **not** be sprinklered.
- Drip drums shall be in heated areas.
- Dry-system air compressors shall be hard wired.
- A high- and low-air-pressure alarm is required for all dry systems.
- Pre-action systems shall be designed in accordance with NFPA requirements for battery backup. They are not required to be in fail safe.
- Commercial FDC shall be equipped with 30 degree 5" Storz with locking cap.
- Water flow alarm either electrical or mechanical.