

Poudre Fire Authority
Community Safety and Service Division
Fire Prevention Bureau

102 Remington St

970-416-2891



Contractor's Handbook

A guide to permitting, inspections, and finals

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Introduction:

The purpose of this handbook is to provide a guide for the plan review, permitting, and inspection process for all commercial buildings, fire protection systems, and all residential sprinklers within Poudre Fire Authority's jurisdiction.

Each project will have unique requirements, conditions, and permit needs. This document is subject to change and is not a binding document.

Your Construction Support Team is here to offer guidance throughout the building process, starting at conceptual review and continuing through the final inspection.

The Requirements During Construction list criteria for the job site to ensure that emergency services can be provided. Included are access, water supply, and premise identification.

The General Requirements are categorized by system and job type. These are not intended to be considered as an all-inclusive list, but rather a generic guideline to provide basic understanding of what is required.

The Required Inspections detail when inspections should be requested. It is recommended that inspections be requested at least 24 hours in advance.

Knox Box Information includes ordering, box placement, key requirements, and lock up procedures.

Our goal is to provide you with the best service possible and to ensure your questions are answered so you can have a successful building experience in our jurisdiction. Our staff is glad to answer any questions you might have.

Please feel free to contact any of the staff members listed at the end of this document.

Requirements During Construction

Access: Road base capable of handling forty (40) ton emergency response vehicles. This roadway must be kept clear and usable in all weather conditions at all times. Emergency access signage must in place.

Address: The construction site must have a readily visible address at the entrance and on each building if applicable. Address numerals must be a minimum of ten (10) inches.

Water Supply Infrastructure: Must in place and functioning before construction comes out of the ground.

Required Inspections

pfafireprevention.org All inspections must be requested through the online form found on the website. No phone-in inspections will be accepted.

Sprinkler Rough-in Inspections: Rough-ins may be requested by the sprinkler fitter.

Finals: Final inspections must be requested by the general contractor.

Check off sheets for finals are located on our website. These are handy guides for final preparation.



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PLAN REVIEW GENERAL REQUIREMENTS

SPRINKLER SYSTEM

This plan review is for general compliance with the International Fire Code and Amendments, as adopted by the City of Fort Collins, Poudre Valley Fire Protection District, and the Town of Timnath. The applicant is responsible for meeting all requirements of this code before final approval is granted by Poudre Fire Authority. The Authority's approval of drawings, designs, plans, and specifications shall not in any way relieve the applicant of responsibility for the technical accuracy of the work.

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- **Rough-in and final inspections required**
- **Underground piping not inspected by PFA**
- **Schedule rough-in inspection before pipe is obstructed from view**
 - Location of FDC shall be verified during first rough-in
 - Pipe size and head spacing shall be verified.
 - Pipe hangers, hanger spacing and hanger support shall be verified.
 - The fire sprinkler riser stability shall be verified.
- **Sprinkler system shall be tested**
 - Main Drain Test - Static and Residual Pressures
 - Tamper switches shall be supervised by fire alarm.
 - Inspector's test valves shall activate fire alarm within 30-40 seconds.
 - Outside horn/strobes above FDC shall function independently from the fire alarm panel and shall start and stop exclusively by Fire Sprinkler System flow switches and/or alarm pressure switches.
 - Proper signals shall be received at Central Station.
- **System Signage and Identification**
 - Control valves, main drain, inspectors test valves and auxiliary drains, etc. shall be identified with proper signage. Any chains used to secure signs shall be rust proof.
- **System Signage and Identification (cont....)**

- A permanent, weatherproof *Fire Sprinkler Hydraulic Data Plate* shall be provided at each system control riser, anti-freeze loop and auxiliary system control valve.
- Pressure gauges shall be installed on the supply and system side of the backflow device and for each individual zone/control valve.
- The Fire Riser Room door shall be identified by a permanent sign with red letters on a white background. Inside doors shall have a minimum of 3 inch letters and outside doors shall have a minimum of 6 inch letters.
- **Additional Requirements**
 - All expansion tanks shall be UL listed for the purpose.
 - Spare Head Cabinet shall have appropriate # and types of sprinkler heads, sprinkler head wrench, and any tamper proof tools needed to service system.
 - The 200 Pound Test Documentation Form shall be provided at final inspection.
 - An *NFPA Certificate of Completion* Form shall be provided at the final inspection.



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PLAN REVIEW GENERAL REQUIREMENTS

FIRE ALARM SYSTEM

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- ◆ **Final inspection required. No rough-in inspection required. Prior to final inspection, system shall be 100% tested and monitored on-line for 12 continuous hours. If applicable, final inspection shall be coordinated with the General Contractor.**
- **Initiating Devices shall be tested.**
 - Ex: Pull Stations, Smoke and Heat detectors, Water Flow switches, etc.
- **Supervised Devices shall be tested.**
 - Ex: Duct Detectors, Fire Sprinkler Tamper Switches, Fire Pumps, etc.
- **Notification Appliances shall be tested.**
 - Ex: Horns/Strobes, Voice Evacuation, etc.
 - Outside Horn/Strobe above the Fire Department Connection for the Fire Sprinkler System shall function independently from the fire alarm panel.

These particular appliances shall start and stop exclusively by Fire Sprinkler System flow switches and/or alarm pressure switches.

- **Additional Fire Protection Systems/Components shall be properly interfaced to the Fire Alarm System.**
 - Ex: Magnetic Door Closers, Fire Dampers, Smoke Removal Systems, Foam systems, Pre-action Systems, Hood and Duct Systems, etc.
- ◆ **Central Station Response shall be tested.**
 - Confirm reception of *alarm, trouble and reset* signals by central station.
 - Confirm that PFA Dispatch receives alarm notification from central station.
- ◆ **Basic Fire Alarm Panel functions shall be tested.**
 - Loss of AC power indication
 - Loss of battery power indication
 - Loss of communication source indication (phone lines, radio signal, etc)
 - Open circuit indication
 - Ground fault indication
 - Remote annunciators (if required) shall be fully functional.
- ◆ **Additional Requirements.**
 - The Central Station *name, phone number, and system account number* shall be posted on or inside the Fire Alarm panel.
 - Electrical panel identification/location and circuit breaker # shall be posted on or inside the Fire Alarm panel.
 - All circuit breakers for the fire alarm panel and any remote power supplies shall have a red marking to identify them as "Fire Alarm" and shall have a lock-out device to prevent accidental shut off.
 - All fire alarm wire and cables shall be protected from physical damage. (generally, wiring below 7 feet AFF shall be protected by conduit)
 - As built drawings shall be provided to owner.
 - Instruction/operating manual shall be provided to the owner.
- ◆ **An *NFPA Certificate of Completion* form shall be provided by the installer at the final inspection.**



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PLAN REVIEW GENERAL REQUIREMENTS

COMMERCIAL HOOD & DUCT

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- Wet Chemical System Tanks shall be the correct size per the submittal.
- Verify appropriate nozzle and appliance arrangement.
- The appliance locations shall be marked on the floor, or the appliances shall be secured to prevent accidental relocation.
- Verify number and placement of Plenum Nozzles.
- Fusible Link(s) shall be in place and have proper temperature rating.
- If applicable, verify Fire Alarm System activation with correct annunciation.
- If applicable, verify that Dialer sends correct indication to Central Station.
- Type K Fire Extinguisher shall be installed no farther than 30 feet from the Hood.
- The Hood System Manual Pull Station shall be properly located.
 - At least 20 feet from Hood
 - 4-5 feet off floor
 - Maximum movement of 14 inches
 - Maximum force of 40 lbs
- The Make-up Air Supply Fan shall shut down upon System activation.
- Both Gas and Electricity shall shut down upon System activation.
- If Hood Exhaust Fan is running, it shall continue running after System Activation.
- If Hood Exhaust Fan is not running, it shall start automatically after System Activation.

- An NFPA Certificate of Completion form shall be provided by the installer at the final inspection.



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PLAN REVIEW GENERAL REQUIREMENTS

NEW CONSTRUCTION / TENANT FINISH

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- ◆ **Final inspections are required. The General Contractor is responsible for coordinating a final inspection that will include the new building/tenant finish permit in addition to any system permits.**
- ◆ **New and existing buildings shall have approved street address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property.**
 - Individual suites/units identification shall be posted on or above the front door and shall be no less than four (4) inches in size unless approved by PFA.
 - Buildings with fire lanes on multiple sides shall have the address on each side with a fire lane. A side requiring the address that does not face the address street shall include the street name with the address numbers.
 - Buildings with multiple stairwells shall have signage to identify suites/units that are served exclusively by that stairwell.
- ◆ **Required fire lanes shall be properly painted and signed.**

- ◆ **Utility equipment (gas meters, transformers, etc) shall be protected from damage.**
- ◆ **A Knox Box is required on buildings with Fire Sprinkler and/or Fire Alarm Systems. Additional Knox Boxes may be required depending on size and/or the building footprint.**
- ◆ **Exit Signs and Egress Lighting will have the emergency power source tested.**
- ◆ **Fire Extinguishers shall be installed to meet the requirements in the currently adopted International Fire Code and NFPA 10.**
 - Most occupancies require one 5# ABC extinguisher for every 3000 square feet or 75 feet of travel distance.
- ◆ **The Hardware on required Exit Doors shall meet all the requirements of Chapter 10 in the IFC. This requirement is retroactive to existing buildings.**
- ◆ **Emergency Responder Radio Coverage**
 - Both new and existing buildings may require an analysis by a qualified contractor to determine whether fire department communications are adequate (BDA Test).
- ◆ **Required Occupant Load Signs will be provided by PFA at Final Inspection.**
 - Rooms with more than 49 occupants.
 - Dimensioned floor plans with seating chart required to determine Occupant Load.
- ◆ **Fire Safety during construction.**
 - Fire Department vehicle access shall be provided by permanent or temporary roads capable of supporting vehicle loading (40 Tons) under all weather conditions.
 - An approved water supply for fire protection shall be available when combustible materials arrive on the site.
 - A temporary address sign shall be maintained during construction for emergency responders.



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SPRAY BOOTHS

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- ◆ **Final inspection required. If applicable, final inspection shall be coordinated with the General Contractor.**

- ◆ **Design Parameters: Shall meet the requirements of the PFA's currently adopted International Fire Code.**
 - 18 Gauge Metal
 - 36" Clearance on all sides
 - Booth does not exceed 10 % of floor area
 - Floors non-combustible
 - Smooth interior, fire resistant caulk
 - 100 Linear feet of air flow
 - Non-sparking fan, motor and belts covered
 - Nozzle(s) in vent stack
 - Pull Station with no more than 14 inch pull
 - Panel for luminaires shall be glass hammer-wired, heat treated

- ◆ **"No Smoking" and "No Welding" signs shall be posted**

- ◆ **A 20A-40BC Fire Extinguisher shall be installed within 30 feet of booth.**

- ◆ **Ventilation Interlocks shall function correctly.**
 - Spraying equipment shall not operate unless the ventilation system is in operation, or if applicable, the chemical system has discharged.



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PLAN REVIEW GENERAL REQUIREMENTS

KNOX BOX

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- ◆ **The number and size of Knox Boxes will be indicated on the PFA Permit.**
- ◆ **Knox Boxes can be ordered at www.knoxbox.com. Allow approximately one week for delivery. Select Poudre Fire Authority in order to get the box keyed for the correct jurisdiction.**
- ◆ **The Knox Box will be open when delivered to enable installation. PFA personnel will load the required keys and information card and lock the box at Final Inspection.**
- ◆ **Installation Location:**
 - Between three (3) and seven (7) feet above finished grade. (five (5) – six (6) feet is ideal)
 - Within ten (10) feet of the entrance door. (some Knox Boxes are on site access gates – PFA will approve location)
 - Must be readily visible. Not obscured by vegetation – Not on the back side of a column.

- ◆ **Key Tags:** Color coded key tags will be provided by PFA at Final Inspection.
- ◆ **Required Keys:**
 - Exterior Master
 - Riser Room
 - Fire Alarm Panel (and other keys such as pull stations, remote annunciators, or duct detector test/reset modules)
 - Elevator Recall Key (if equipped with an elevator)
 - Additional keys should be provided to access interior stairwells, hallways and common areas.
 - An optional owner key box can be utilized somewhere in the structure, which will allow the owner to have additional keys such as tenant spaces or uniquely keyed rooms. The owner must provide a key in the Knox Box to allow PFA to access the owner key box.
- ◆ **Number of Key Sets**
 - Single story buildings shall have one (1) set of keys per Knox Box
 - Two (2) – three (3) story buildings shall have two (2) sets of keys per Knox Box.
 - Buildings exceeding three (3) stories shall have three (3) sets of keys per Knox Box.
- ◆ **Knox Box Inventory Cards:**
 - A PFA Knox Box inventory card will be filled out at final inspection.
 - Provide the names and after-hours phone numbers of responsible parties that will be contacted in the event of an emergency. Please note the preferred order of contact.

Your Construction Support Team



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