



Fire Sprinkler Plan Submittal Guide

This guide outlines the minimum requirements that must be met for Fire Sprinkler installation plans to be submitted for review by Gresham Fire & Emergency Services (GFES).

Utilizing information in this guide will avoid incomplete plan review submittals that cause delays and effect permit approvals that may interfere with installation timelines. Installation, alterations, or modifications to fire sprinkler systems may only be done under benefit of permit from the local building permit services. Stamped APPROVED drawings must be on site at all times work is being performed and available during inspections by GFES.

The 2019 Oregon Fire Code (OFC) and the 2016 National Fire Protection Association (NFPA) 13 Standard for the Installation of Sprinkler Systems have been adopted by GFES as the authority having jurisdiction.

Plan Review Submittal Requirements:

Plans submitted for review must comply with the applicable requirements in this guide.

General Plan Requirements:

- Permits are required for any changes, additions or deletions to an existing fire sprinkler system.
- Permits are required for the installation of all new fire sprinkler systems in commercial and residential occupancies.
- All plans shall be drawn to 1/8" or 1/4" scale on sheets of uniform size with a plan for each floor and include items identified in NFPA 13 Chapter 23.
- In the City of Gresham, electronic plan submittal and review is currently required. Please refer to the following link: GreshamOregon.gov/eplan/
- In Troutdale, Wood Village and Fairview, contact the individual building departments for the number of plans required and specific permit requirements (OFC 901.2).
- All plans must be stamped by a (State of Oregon) Registered Professional Engineer or Architect as required by Oregon Revised Statutes 671.020. (**Exceptions:** New, additions or alterations to systems in buildings 4000 Square feet or less and up to 20 feet in height when the alteration is done within the design parameters of the original system; listed, pre-engineered fixed fire suppression and clean agent systems as specified by a design professional and installed in accordance with the listing.)

- Plans must include:
 1. Name of building or business owner/occupant, address and contact information.
 2. Name, address and contact information for system designer AND system installer.
 3. Type of building construction and occupancy.
 4. Floor plan including identification or description of use of each room.
 5. Full height cross-section, or schematic diagram including structural member information if required for clarity.
 6. Include location of partition walls, concealed and unprotected spaces/enclosures and fire walls if present.
 7. Floor, ceiling and wall elevations particularly if architectural features are present as they are likely to affect coverage areas.
 8. Site plan indicating compliance with **GFES Private Underground Fire Supply Guide**.
 9. Manufacturer's specification sheets for system components. Must include make, type model and nominal K-factor of sprinklers to be used.
 10. System Legend/Key (include all types of sprinkler heads to be used).
 11. Type of sprinkler system, applicable codes, standards and other design criteria to which the system is required to comply. Temperature rating and location of high-temperature sprinklers if used.
 12. Type and amount of antifreeze solution if used.
 13. The minimum rate of water application (density or flow or discharge pressure), the design area of water application, in-rack sprinkler demand and water required for hose streams (both inside and outside).
 14. The total amount of water and the pressure required noted at a common reference point for each system.
 15. Hydraulic calculations are required if over (3) flex connectors are used to install sprinkler heads.

Specific Plan Requirements:

- Fire alarm plans must be submitted in accordance with **GFES Fire Alarm Plan Submittal Guide**.
- Tamper switches must be installed on all control valves (including those in the underground fire supply vault) and on the post indicating (PIV). Tamper switches must be tied to the fire alarm system.
- Fire Department Connection (FDC) shall be located within 50' of a fire hydrant.
- FDC and PIV shall be installed no closer than 40' to any building.
- Indicate the edition year of NFPA 13 that the system is designed to.
- For residential systems with CPVC piping installation, provide details about freeze protection in accordance with NFPA 13. **GFES Freeze Protection for CPVC Fire Sprinkler Piping**.