



# South Adams County Fire Department

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6050 Syracuse Street, Commerce City, CO 80022  
Phone: 303-288-0835 | [www.sacfd.org](http://www.sacfd.org)

## Automatic Fire Sprinklers

**Submittal Process:** The Following items are required for a Fire Sprinkler Plan Review submittal. Failure to provide the following may require a Review Denial or Resubmittal. All submittals shall have a South Adams County Fire Department Plan Review Application attached.

### Scope of Work Letter Requirements:

- Additions or relocations that require 10 or less heads, and does not affect the hydraulic calculations of the system.
- South Adams County Fire Department Plan Review Application
- Scope of Work Letter detailing the work to be completed and all components are compatible with the system
- Data specification sheets on the equipment.

### Drawings Requirements:

- **Electronic plans in .pdf format. Please submit files in an unlocked and unsecured state for plan review.**
- Stamped by a NICET III or PE
- Colorado Division of Fire Prevention and Control Licenses for Contractors and Fitters
- Name of Owner and Occupant
- Location, including Street Addresses
- Indicate the approximate scale, northern direction and date the drawing was completed.
- Ceiling Construction
- Full-Height Cross Section
- Location of Fire Walls
- Location of Partitions
- Occupancy of each area or room
- Location and sizes of blind spaces and closets
- Any questionable small enclosures in which no sprinklers are to be installed
- Size of city main in street, pressure and whether dead end or circulation and if dead end direction and distance to nearest circulation main,
- City main Test Results
- Other Source of water supply with pressure or elevation

- Make, type and orifice size of sprinkler
- Temperature rating and location of high-temperature sprinklers
- Number of Sprinklers on each riser and on each system by floors and total area by each system on each floor
- Make, type, model and size of alarm or dry pipe valve
- Make, type, model and size of preaction or deluge valve
- Type and location of alarm bells
- Total number of sprinklers on each dry pipe system or preaction deluge system
- Approximate capacity in gallons or each dry pipe system
- Cutting Lengths of pipe ( or center-to-center dimensions)
- Type of fittings rise nipples and size, and all welds and bends
- Type and location of hangers inserts and sleeves
- All control valves, checks and drain pipes and test pipes
- Small hand-hose equipment
- Underground pipe size, length, location, weight, material, point of connection to city main; the type of valves, meters and valve pits; and the depth that top of the pipe is laid below grade
- When the equipment is to be installed as an addition to an old group of sprinklers without additional feed from the yard system, enough of the old system shall be indicated on the plans to show the total number of sprinklers to be supplied and to make all connections clear
- Name, address and phone number of contractor and sprinkler designer
- Hydraulic reference points shall be shown by a number and/or letter designation and shall correspond with comparable reference points shown on the hydraulic calculation sheets
- System design criteria showing the minimum rate of water application (density), the design area of water application and the water required for hose streams both inside and outside
- Actual calculated requirements showing the total quantity of water and the pressure required at a common reference point for each system
- Elevation data showing elevations of sprinklers, junction points and supply or reference points

### **Information Required on Calculations:**

- Location
- Name of Owner and Occupant
- Building Identification
- Description of Hazard
- Name and Address of Contractor and Designer
- Name of Approving Agency
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### **System Design Requirements:**

- Design area of water application
- Minimum rate of water application (density)
- Area of sprinkler coverage

- Hazard or commodity classification
- Building height
- Storage height
- Storage method
- Total water requirements, as calculated, including allowance for hose demand water supply information
- Location and elevation static and residual test gauge with relation to the riser reference point
- Flow location
- Static pressure, psi
- Residual pressure, psi
- Flow, gpm
- Date
- Time
- Test conducted by whom
- Sketch to accompany gridded system calculations to indicate flow quantities and directions for lines with sprinklers operated in the remote area

#### **Additional Information Required:**

- Sprinkler description and discharge constant (K-value)
- Hydraulic reference points
- Flow, gpm
- Pipe diameter (actual internal diameter)
- Pipe length
- Equivalent pipe length for fittings and components
- Friction loss in psi per foot of pipe
- Total friction loss between reference points
- Elevation difference between reference points
- Required pressure in psi at each reference point
- Velocity pressures and normal pressure if included in calculations
- Notes to indicate starting points, reference to other sheets or classification of date
- Manufacturers' data sheets indicating model numbers and listing information for equipment, devices and materials

#### **Included with the submittal must be a graph sheet showing water supply curves and system requirements including:**

- Hose demand plotted on semi logarithmic graph paper so as to present a graphic summary of the complete hydraulic calculations.