



CITY OF
SANTA ROSA

Fire & Life Safety Plan Review Services
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FIRE DEPARTMENT INFORMATION BULLETIN

SUBJECT: AUTOMATIC SPRINKLER PLAN SUBMITTAL REQUIREMENTS

Bulletin Number: 042
Date of Issue: May 1, 1998

Code Reference:
1994 Uniform Fire Code (UFC) Section 1003.1.2
1994 Uniform Building Code (UBC) Section 904
Santa Rosa City Code Chapters 18-16, 18-44
NFPA Standard 13 (1994 Edition) Sections 6-1, 6-2

NOTE: This bulletin is a summary of Fire Department interpretations of City Codes and information contained herein applies to typical instances and may not address all circumstances.

Uniform Building Code Chapter 9 and UBC Standard 9-1 regulate the design and installation of automatic fire sprinkler systems. UBC 9-1 incorporates NFPA 13 (1994 Ed.) standards and specific amendments. Systems shall be designed and installed in accordance with this standard.

Working plans shall be submitted for approval to the Santa Rosa Fire Department before any equipment involving seven (7) or more sprinklers is installed. A completed Permit and Plan Review Application Form and fee shall be submitted along with not less than three (3) sets of plans and calculations as required. A Santa Rosa Tax Certificate, current appropriate contractor's license and proof of worker's compensation insurance shall be provided or shall be on file at the time of application.

Any deviation from plans as submitted during the installation requires Fire Department approval. Plans shall include the information specified below and failure to provide all of the required information may result in the plans being rejected. Rejected plans will be returned with a Plan Review Correction Form. Review the form and make the required additions/ changes which shall be clouded for identification. Provide a legend to describe

**INFORMATION BULLETIN
AUTOMATIC FIRE SPRINKLER PLAN SUBMITTAL REQUIREMENTS**

the addition or change. Allow ten (10) working days for review of submitted plans.

Please call (707) 543-4351 for additional information regarding plan review and plan submission and for required inspections after permit issuance, call (707) 543-3500 to arrange for all required field tests and inspections.

Working plans shall be drawn to an indicated scale, on sheets of uniform size, with a plan of each floor and shall show the following data:

- Name of owner and occupant
- Location, including street address
- North arrow
- Ceiling construction
- Full height cross section (s) for clarity as needed including ceiling and roof construction
- Location of fire walls
- Location of partitions
- Occupancy of each area or room
- Location and size of concealed spaces, attics, closets and bathrooms
- Any small enclosures in which no sprinklers are to be installed
- Size of city water main in street, pressure, and whether dead-end or circulating and, if dead-end, direction and distance to nearest circulating main, and city main test results, including elevation of test hydrant
- Make, manufacturer, type, temperature rating and nominal orifice size of sprinklers
- Temperature rating and location of high-temperature sprinklers
- Number of sprinklers on each riser, per floor
- Kind and location of alarm devices
- Type of pipe and fittings
- Type of protection for nonmetallic pipe
- Nominal pipe size with lengths shown to scale
- Location and size of riser nipples
- Type of fittings and joints and location of all welds and bends
- Types and locations of hangers, sleeves, sway braces and methods of securing where applicable
- Calculation of loads for sizing, and details of, sway bracing
- All control valves, check valves, drain pipes and drain valves, test connections
- Underground pipe size, length, location, weight, material, point of connection to city main; the type of valves, meters, and valve pits; the depth at which the top of the pipe is laid below grade.

**INFORMATION BULLETIN
AUTOMATIC FIRE SPRINKLER PLAN SUBMITTAL REQUIREMENTS**

For hydraulically designed systems the following data shall be provided:

- Hydraulic reference points corresponding with comparable reference points on the hydraulic calculation sheets
- The minimum rate of water application (density), the design area of water application, in-rack sprinkler demand if any, and the water required for hose streams both inside and outside
- Material to be included on the hydraulic data nameplate (See Sample)
- The total quantity of water and the pressure required noted at a common reference point for each system
- Relative elevations of sprinklers, junction points and supply or reference points
- If room design method is used, all unprotected wall openings throughout the floor being sprinklered
- The setting for pressure-reducing valves
- Information about backflow preventers (manufacturer, size, type)

Hydraulic calculation forms shall be provided for all calculations. These forms shall include a Summary Sheet with the following information:

- Date
- Location
- Name of owner and occupant
- Building number or other identification
- Name and address of contractor or designer
- Description of hazard protected
- System design requirements
 1. Design area of water application, square feet
 2. Minimum rate of water application (density), gpm/sq ft
 3. Area per sprinkler, square feet
- Total water requirements as calculated including allowance for inside hose, outside hydrants, and water curtain or exposure sprinklers
- Allowance for in-rack sprinklers, gpm
- Limitations (dimensions, flow, and pressure) on extended coverage or other listed special sprinklers

**INFORMATION BULLETIN
AUTOMATIC FIRE SPRINKLER PLAN SUBMITTAL REQUIREMENTS**

Detailed work sheets or computer printout sheets shall contain the following information:

- Sheet number
- Sprinkler description and discharge constant (K factor)
- Hydraulic reference points
- Flow in gpm
- Pipe size
- Pipe lengths, center-to-center of fittings
- Equivalent pipe lengths for fittings and devices
- Friction loss in psi per ft of pipe
- Total friction loss between reference points
- In-rack sprinkler demand balanced to ceiling demand where applicable
- Elevation head in psi at each reference point
- Required pressure in psi at each reference point
- Velocity pressure and normal pressure if included in calculations
- Notes to indicate starting points, references to other sheets, or to clarify data shown
- Diagram to accompany gridded system calculations to indicate flow quantities and directions for lines with sprinklers operating in the remote area
- Combined K-factor calculations for sprinklers on drops, armovers, or sprigs where calculations do not begin at sprinkler
- Graphic presentation of the complete hydraulically calculated water supply available and the system demand including hose streams and in-rack sprinklers where applicable.

**INFORMATION BULLETIN
AUTOMATIC FIRE SPRINKLER PLAN SUBMITTAL
REQUIREMENTS**

S A M P L E

This system as shown on(ABC Sprinkler).....Company
print No.....(123)dated.....for
(Big Warehouse Co. Design area No. 1)
at. (5555 West Avenue; Santa Rosa).Contract No. (98-001)...
is designed to discharge at a rate of ..0.20...gpm/sq ft
of floor area over a maximum area of..3000....sq ft when
supplied with water at a rate of 1115..gpm at ...57..psi
at the base of the riser. Hose stream allowance of
..500..gpm is included in the above.