



ROANOKE COUNTY COMMUNITY DEVELOPMENT
Office of Building Safety
COMMERCIAL FIRE SPRINKLER SYSTEM
SUBMITTAL CHECKLIST



Project Name: _____ Date: _____

Occupancy
Address: _____

Owner: _____ Telephone: _____

Occupant/Tenant: _____ Telephone: _____

Owner's Address: _____

Designer: (print) _____ Signature _____

Address: _____

Telephone: _____ Fax: _____ Email: _____

This checklist is to accompany all plan submittals. Three complete sets of drawings, scaled to 1/8" or 1/4" per foot.² Included with the submittal must be a graph sheet, plotted on semi-logarithmic graph paper, showing water supply curves and system requirements. Design, layout, and installation is to be done in accordance with the current edition of the Uniform Statewide Building Code and all adopted standards.* Information on shop drawings should include all of the following applicable items:

Y N/A

- Dimensioned site plan showing entire building and indicating area served by system.
- Point of compass (i.e. direction of north)
- Ceiling construction
- Full height cross section
- Location of all fire walls and partitions
- Complete floor plan indicating occupancy of each room or area
- Any questionable spaces, e.g. concealed spaces, etc., where no sprinklers are installed
- Size of water main in street³
- Alternate/Additional water supply showing pressure and elevation³
- Make, type, and nominal orifice size of all sprinklers
- Temperature rating and location of any high-temperature sprinklers
- Number of sprinklers on each riser and on each system by floors and total area by each system on each floor
- Type and location of alarm bell and supervisory method
- Pipe material and schedule to be used
- Type and location of hangers, sleeves, braces and methods of securing sprinklers¹



Underground pipe size, length, location, weight, material, point of connection to main, type of valves, meters, valve pits, and depth to top of pipe
When the equipment is installed as an addition to an existing system, enough of existing system shall be indicated on plans to make all corrections clear and indicate the effect, if any, on existing remote areas
Name, address, and phone number of contractor
Hydraulic reference points are to be shown by a number and/or letter designation
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
FDC location(s) in accordance with approved civil drawings; please verify with the Roanoke County Fire Marshal's Office prior to submittal

Information on calculations should include all of the following applicable items:

Y N/A

Location, name of owner/occupant, name of designer and address, and building identification
Description of hazard^Δ
Hazard/Commodity classification^Δ
Design area of water application
Minimum rate of water application i.e., density
Area of sprinkler coverage
Building height
Storage height
Storage method
Total water requirements, as calculated, including allowance for hose demand water supply information
Location and elevation of static and residual test gauge with relation to the riser reference point
Water supply data including date, size, and location of main and recent supply test flow data indicating flow, static, residual pressure, and whom test was conducted by
If design is a gridded system, sketch must be attached to indicate flow quantities and directions for lines with sprinklers operated in the remote area
Sprinkler description and discharge constant (K value)
Hydraulic reference points
Flow, gpm
Pipe diameter (actual) and length
Equivalent pipe length for fittings and components
Friction loss in psi per foot of pipe and 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

^ΔPiping hanging supports in areas with a seismic design category of other than A or B must be reviewed and approved by the registered design professional in accordance with IBC section 1613 and ASCE 7, section 9.6.



²Fire protection system design is considered engineering work and must be done under the supervision of the design professional of record, where applicable with State Law. Sprinkler shop drawings must first be submitted to the design professional, where applicable and stamped "approved" prior to submittal to our office.

³The design of an adequate water supply, i.e., fire pump, storage tank, etc., must be conducted by a registered design professional with an adequate knowledge and understanding of fluid mechanics, hydraulics, and the appropriate codes and standards.

Δ If the occupancy is other than light or ordinary hazard (group 1), the applicable attached letters indicating the owner's intended use must be included with submittal. Due to the complexity of some hazards, an engineering analysis of hazards and storage methods, conducted by a registered design professional, may be required at the discretion of this office.

*Currently adopted edition of applicable standards for general design/installation:

- *International Building Code 2012; International Fire Code 2012*
- *NFPA 2013 Installation of Sprinkler Systems*
- *NFPA 2013 Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height*
- *NFPA 2013 Installation of Sprinkler Systems in One-and Two-family Dwellings and Manufactured Homes*
- *NFPA 2013 Installation of Standpipe and Hose Systems*
- *NFPA 2013 Installation of Stationary Pumps for Fire Protection*

