



**FIRE PREVENTION DIVISION
PUBLIC SAFETY BUREAU**

**FIRE SPRINKLER SYSTEM
PLANS SUBMITTAL CHECKLIST
NFPA 13 (2002 EDITION)**

The following Fire Sprinkler Plans Submittal Checklist is required information for fire sprinkler permit review. Use of the form does not guarantee that plans will be accepted on the first submittal, but will aid in reducing the number of re-submittals required due to the lack of information or conflicting information being provided. **This checklist should not be considered to be all inclusive. Additional information may be required. Use of this checklist will not eliminate the requirement for a good knowledge and understanding of NFPA 13.**

For issuance of the fire alarm permit and prior to any installation and request for fire alarm concealment inspections, the following information and/or forms shall be completed, submitted and approved.

- Completed & approved permit application.**
- Include payment for permit fees.**
- Three (3) sets of shop drawings/plans.**

Any material installed or work performed prior to the issuance of a permit will be subject to two times the permit fee and/or required to be removed. A hard copy of the permit and an approved set of plans are required to be maintained on the job site at all times and must be on site prior to any worked being performed unless a limited early start request has been granted. Limited early start requests are considered on a case by case basis, are required to be submitted in writing on letter head and are not automatically granted.

14.1.1 Working plans shall be submitted for approval to the authority having jurisdiction before any equipment is installed or remodeled.

14.1.2 Deviation from approved plans shall require permission of the authority having jurisdiction.

14.1.3 Working plans shall be drawn to an indicated scale, on sheets of uniform size, with a plan of each floor, and shall show those items from the following list that pertain to the design of the system:

- Name of owner and occupant.
- Location, including street address.
- Point of compass.
- Full height cross-section, or schematic diagram, including structural member information if required for clarity and including ceiling construction and method of protection for nonmetallic piping
- Location of partitions and firewalls.
- Occupancy class of each area or room.
- Location and size of concealed spaces, closets, attics, and bathrooms.
- Any small enclosures in which no sprinklers are to be installed.
- Size of main in street and whether dead end or circulating; if dead end, direction and distance to nearest circulating main; and main test results and system elevation relative to test hydrant. Other sources of water supply, with pressure or elevation.
- Make, type, model, and nominal K-factor of sprinklers including sprinkler identification number. Temperature rating and location of high-temperature sprinklers
- Total area protected by each system on each floor.
- Number of sprinklers on each riser per floor.
- Total number of sprinklers on each dry pipe system, preaction system, combined dry pipe-preaction system, or deluge system. Approximate capacity in gallons of each dry pipe system
- Pipe type and schedule of wall thickness Nominal pipe size and cutting lengths of pipe (or center-to-center dimensions). Where typical branch lines prevail, it shall be necessary to size only one typical line

Opposite side of this page and pages 3 and 4 are required to be completed.



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- Location and size of riser nipples.
- Type of fittings and joints and location of all welds and bends. The contractor shall specify on drawing any sections to be shop welded and the type of fittings or formations to be used.
- Type and locations of hangers, sleeves, braces, and methods of securing sprinklers when applicable.
- All control valves, check valves, drain pipes, and test connections.

- Make, type, model, and size of alarm, dry pipe, pre-action or deluge valve.
- Kind and location of alarm bells.
- Size and location of standpipe risers, hose outlets, hand hose, and related equipment.
- Private fire service main sizes, lengths, locations, materials, point of connection to city main; the sizes, types and locations of valves, valve indicators, regulators, meters, and valve pits; and the depth that the top of the pipe is laid below grade.
- Piping provisions for flushing.
- Where the equipment is to be installed as an addition to an existing system, enough of the existing system indicated on the plans to make all conditions clear.
- For hydraulically designed systems, the information on the hydraulic data nameplate.
- A graphic representation of the scale used on all plans.
- The minimum rate of water application (density), the design area of water application, in-rack sprinkler demand, and the water required for hose streams both inside and outside.
- The total quantity of water and the pressure required at a common reference point for each system, relative elevations of sprinklers, junction points, and supply noted or reference points.
- Information about backflow preventers (manufacturer, size, type).
- Information about antifreeze solution used (type and amount).
- Size and location of hydrants, showing size and number of outlets and if outlets are to be equipped with independent gate valves. Whether hose houses and equipment are to be provided, and by whom, shall be indicated. Static and residual hydrants that were used in flow tests shall be shown.
- Size, location, and piping arrangement of fire department connections.
- The working plan submittal shall include the manufacturer's installation instructions for any specially listed equipment, including descriptions, applications, and limitations for any sprinklers, devices, piping, or fittings.
- Special symbols shall be used and explained for auxiliary piping, pumps, heat exchangers, valves, strainers, and the like, clearly distinguishing these devices and piping runs from those of the sprinkler system. Model number, type, and manufacturer's name shall be identified for each piece of auxiliary equipment.

Water Supply Information.

The following information shall be included:

- Location and elevation of static and residual test gauge with relation to the riser reference point.
- Flow location.
- Static pressure, psi (bar).
- Residual pressure, psi (bar).
- Flow, gpm (L/min).
- Date.

Pages 3 and 4 are required to be completed



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- Time.
- Test conducted by or information supplied by.
- Other sources of water supply, with pressure or elevation.
- Hydraulic calculations shall be prepared on form sheets that include a summary sheet, detailed worksheets, and a graph sheet.

The summary sheet shall contain the following information, where applicable:

- Date.
- Location.
- Name of owner and occupant.
- Building number or other identification.
- Description of hazard.
- Name and address of contractor / designer.
- Name of approving agency.
- System design requirements.
- Design area of water application, ft² (m²).
- Minimum rate of water application (density), gpm/ft² (mm/min).
- Area per sprinkler, ft² (m²).
- Total water requirements as calculated, including allowance for inside hose, outside hydrants, and water curtain and exposure sprinklers.
- Allowance for in-rack sprinklers, gpm (L/min).
- Limitations (dimension, flow, and pressure) on extended coverage or other listed special sprinklers.
- Detailed worksheets or computer printout sheets shall contain the following information:
 - Sheet number.
 - Sprinkler description and discharge constant (*K*).
 - Hydraulic reference points.
 - Flow in gpm (L/min).
 - Pipe size.
 - Pipe lengths, center-to-center of fittings.
 - Equivalent pipe lengths for fittings and devices.
 - Friction loss in psi/ft (bar/m) of pipe.
 - Total friction loss between reference points.
 - In-rack sprinkler demand balanced to ceiling demand.
 - Elevation head in psi (bar) between reference points.
 - Required pressure in psi (bar) at each reference point.
 - Velocity pressure and normal pressure if included in calculations.
 - Notes to indicate starting points or reference 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.

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- Combined K-factor calculations for sprinklers on drops, armovers, or sprigs where calculations do not begin at the sprinkler.
- A graphic representation of the complete hydraulic calculation shall be plotted on semiexponential graph paper ($Q^{1.85}$) and shall include the following:
 - Water supply curve.
 - Sprinkler system demand.
 - Hose demand (where applicable).
 - In-rack sprinkler demand (where applicable).

I attest that the information noted above has been provided for review and approval and take full responsibility for its content.

Signature of Contractor or Contractor's Representative

Date