



## Fire Sprinkler Submittal Checklist

**This checklist must be completed and submitted along with an Application for Fire Systems Plan Review and Permit (FP103)**

- The contractor doing the work must be the applicant taking out the permit.
- Drawings must be prints with no handwritten changes or corrections (after printing).
- A Designer of Record, a minimum of a NICET Level III or Factory trained and certified in sprinkler system design, must oversee the design and sign each sheet or page of a submittal, and the submittal checklist.

A sprinkler permit is required for all work involving installations, alterations or modifications of more than 10 sprinkler heads.

If installations, alterations or modifications of more than 10 sprinkler heads and is result of a tenant change within the mall, a letter certifying that all modifications and work completed is in full compliance with the National Fire Sprinkler Code and reference edition date.

All installations must occur with approved plans. Any deviation from the approved plans requires re-submittal to the Office of the Fire Marshal for re-approval. (NFPA 13: A.8.1.1 - 2016 Edition)

A completed permit application form submitted in person to the Office of the Fire Marshal - Town of Henrietta - 475 Calkins Road Henrietta, New York 14467 between the business hours of 9 a.m. and 5 p.m.

If plan has been approved, the Office of the Fire Marshal will notify by telephone, the supplied contact from the Application for Plan Review and Permit. Inspections may be arranged by calling (585) 359-7065 between 9:00 a.m. - 5:00 p.m. Monday - Friday.

- A minimum of (3) three set of drawings shall be presented for review. Plans shall be submitted as blue or black line drawings.

*\*NOTE: When documents are submitted and approved for permit one copy is retained on file and becomes part of the Office of the Fire Marshal's official records (the "Office Copy"). The second set is stamped and signed and returned to the contractor with the permit. This set is called the "Job Copy". The Office of the Fire Marshal requires that the "Job Copy" of the documents be at the site during each hydrostatic test, pump test, final, or other inspection of a fire sprinkler system. This is required so that the inspector in the field can verify that the system is being installed in conformance with the approved plans. Other sets of working plans, which have not been stamped and signed by our fire inspector, will not meet this requirement, as there are often multiple versions of construction documents.*

*Contractors often indicate that they do not wish to leave their only "approved" copy of the plans at the site, as they desire to retain these for their records. To resolve this issue Contractors may submit an additional third set of documents. We will be happy to stamp and sign an additional set, and return two sets to you for your use. Please attach a note to your submittal package requesting the return of the additional set after review.*

### **Submittal Package Requirements**

- Brief Scope of work description
- Hydraulic calculations
- Hardware specification and cut sheets – highlight or indicate hardware on cut sheet(s)
  - Sprinklers
  - Cross Connection Control Device
  - Dry Pipe Valve
  - Preaction Valve
  - Deluge Valve
  - Alarm Check Valve
  - Fire Pump
  - Fire Pump Controller

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- Pressure Tank
- Pressure Reducing Valve
- Foam Equipment
- Detection equipment for preaction & deluge system
- All materials and devices essential to successful system operation; e.g. piping, fittings, FDC, valves, supervisory devices, ect.

**Site Plan** (NFPA 13:22.1.3 - 2016 Edition)

- North Arrow
- Size of city main in street and whether dead end or circulating; if dead end, direction and distance to nearest circulating main; and city main test results and system elevation relative to test hydrant
- Private fire service main sizes, lengths, locations, weights, 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.  
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.
- Other sources of water supply, with pressure or elevation.
- Flow test: show gauge and flow hydrants

**Water Supply Information**

Shall be provided on either the layout drawings or as part of the hydraulic calculation sheets, and shall include the following information: (NFPA 13:22.2.1 - 2016 Edition)

- 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
  - Time
  - Test conducted by or information supplied by
  - Other sources of water supply, with pressure or elevation

**Riser Diagram**

- Sizes
- Make, type, model, and size of alarm or dry pipe valve.
- Make, type, model, and size of preaction or deluge valve.
- Air supervision for dry sprinkler systems
- Methods for monitoring supervisory and trouble signals

**Architectural Plans**

**The following notes shall be included on all drawings:**

- Authority Having Jurisdiction
- Designed in accordance-with code and edition date
- All wet piping and heads shall be kept above 40 degrees F

**Title Block including the following:**

- Name of owner and occupant.
- Project location, including street address.
- The heading "Designer of Record" [in 20-22 pt. bold, and easily readable font];  
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- The name and title of the Designer [in 14 — 16 pt., easily readable font];
- The name of the company for whom the Designer works (if applicable) [in 14 — 16 pt., easily readable font];
- The Designer's mailing address, contact telephone number, and fax number. [In 14 — 16 pt., easily readable font];
- An original signature (within the block or stamp), on each plan sheet submitted;
- A 3" x 4" space labeled for "Fire Marshal Use Only".
- Name and address of contractor & contact person.
- A graphic representation of the scale used on all plans.
- Symbol & Abbreviation key
- Point of compass.
- Date of drawing
- Minimum scale for floor plans is 1/8" per foot.

**Plans** (NFPA 13:22.1.3 - 2016 Edition)

- Occupancy class of each area or room. If Hazard Classification is not obvious provide further information.
- Location of partitions.
- Location of fire walls.
- Rating of any fire walls, partitions and doors; in particular when using the room design method.
  - Room design method or irregular areas not meeting the 1.2 A requirement
  - If room design method is used, all unprotected wall openings throughout the floor protected.
- Location of all doors.
- Ceiling construction and height
- 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 and size of concealed spaces, closets, attics, and bathrooms.
- Any small enclosures in which no sprinklers are to be installed.
- Show all remote areas
- Make, type, model, and nominal K-factor of sprinklers.
- Area of coverage provided by each head
- 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.
- 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.
- Kind and location of alarm bells.
- Provide detail and location on riser's, inspector test, fire pump, and anti-freeze loop
- Size and location of standpipe risers, hose outlets, hand hose, monitor nozzles, and related equipment.

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- 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.
- Hydraulic reference points shown on the plan that correspond 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, and the water required for hose streams both inside and outside.
- 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.
- Calculation of loads for sizing and details of sway bracing.
- The setting for pressure-reducing valves.
- Information about backflow preventers (manufacturer, size, type).
- Information about antifreeze solution used (type and amount).
- Size, location, and piping arrangement of fire department connections.
  - Multiple Fire Department Connections on the same building must be interconnected.
  - Fire Department Connection shall be within (100) one hundred foot from a hydrant.

**Standpipe Systems (if provided)**

- Class 1 only
- Riser and hose valve locations
- Riser detail
- Meet all required hose reach and show all doors to verify
- Show gauges at the top of the riser
- Show the house valve height off the floor
- Show reducers, caps & chains

**Fire Pump Details (if provided)**

- Capacity (flow & pressure) make,model,listing
- Cross section
- Bypass
- Location of jockey pump and controllers
- Relief valve when required by NFPA 20. Pipe to drain or exterior
- Test header location and size

**High Rack & High Piled Storage (if provided)** (NFPA 13:16.2.1.3.2 - 2016 Edition)

- Storage height and arrangement including aisle widths.
- Commodity classification
- Multiple level storage with open grated flooring/walkways must be designed for the entire storage height.

**Hydraulic calculations forms shall include a summary sheet, detailed worksheets, and a graph sheet.**

**Hydraulic Calculations Checklist**

**Summary Sheet** (NFPA 13:22.3.5.2 - 2016 Edition)

- Date
- Location
- Name of owner and occupant
- Building number or other identification
- Description of hazard

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- Name and address of contractor or designer
- Name of approving agency
- System design requirements, as follows:
  - Design area of water application, ft<sup>2</sup> (m<sup>2</sup>)
  - Minimum rate of water application (density), gpm/ft<sup>2</sup> (mm/mm)
  - Area per sprinider, ft<sup>2</sup> (m<sup>2</sup>)
- 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:** (NFPSA 13:22.3.5.6 - 2016 Edition)

- 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/rn) 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
- Calculations for grid indicate system was peaked
- Combined K-factor calculations for sprinklers on drops, armovers, or sprigs where calculations do not begin at the sprinkler
- Equivalent K factors for drops, sprigs, etc.
- Calculations including all piping to the water source used
- Correct minimum operating pressure for all sprinklers

A graphic representation of the complete hydraulic calculation shall be plotted on semi exponential graph paper (Q1.85) and shall include the following: (NFPA 13:22.3.5.3 - 2016 Edition)

- Water supply curve
- Sprinkler system demand
- Hose demand (where applicable)
- In-rack sprinkler demand (where applicable)

*Incomplete submittals may be subject to delay in recording, or review; or to rejection.*

**I VERIFY THAT I DESIGNED OR DIRECTLY SUPERVISED THE DESIGN OF THIS ALARM SUBMITTAL AND I VERIFY THAT SUBMITTAL REQUIREMENTS ARE ACCURATE AND TRUE TO THE BEST OF MY KNOWLEDGE.**

Designer of Record Name: \_\_\_\_\_

Designer of Record Signature: \_\_\_\_\_