City of Middletown
Bureau of Fire Prevention
Theron C. Adkins, Fire Inspector
16 James Street
Middletown, NY 10940
Office: (845)346-4111
Fax: (845)343-4014
Cell: (845)741-6116
E-Mail: tadkins@middletown-ny.com

Automatic Fire Sprinkler Installation Permit Application

In accordance with the New York State Fire Prevention and Building Code, an operational permit is required to install an automatic fire sprinkler system. Plan Submittals and Installation shall be in accordance with the requirements detailed and contained in the National Fire Protection Association (NFPA) Chapter 13 - 2007 Edition and current manufacturer specifications.

Applicant & Property Information

Business Name				
Address	Suite	City	State	Zip Code
Telephone	Work Telephone	Email Address		
Property Owner or Mailing Address if different from above				
Name or DBA				
Address	Suite	City	State	Zip Code
Telephone	Work Telephone			

Installation Company / Agent to Owner

Name			
Contact Name			
Address	City	State	Zip Code
Telephone	Mobile Telephone	Work Telephone	

System Information

NFPA 13		NFPA 13 R		NFPA 13D		NEW ALTERATION		REMODEL	
LIGHT HAZARD		ORDINARY HAZARD GROUP 1		ORDINARY HAZARD GROUP 2		EXTRA HAZARD GROUP 1		EXTRA HAZARD GROUP 2	
NO. OF HEADS INSTALLED OR TO BE WORKED ON			NO. OF STANDPIPES			NO. OF FIRE PUMPS			
PROPOSED STARTING DATE									
DESCRIPTION OF WORK TO BE DONE									

The undersigned represents that this application for a permit as described herein will be in accordance with all ordinances of the City of Middletown and the Fire and Building Code of New York State and that any plans or specifications submitted with this application are the plans or specifications relating to this permit and no other.

Applicant Signature	Applicant Name (Print)	Application Date

Automatic Fire Sprinkler Plan Review Checklist

Please review and familiarize yourself with all requirements listed in this document prior to your submittal. Your compliance with these requirements will enable us complete the review process faster and more efficiently with less rejections due to improper submittals.

General

Three (3) copies of stamped plans must be submitted for review.

Preferred Construction Documents Size - Sheet “D” 24” X 36” *(Fire Marshal may approve other sizes by request)*

Copies shall all be the same size, drawn in indelible ink.

Sheets that are cut and pasted, taped, or that have been altered by any means (pen, pencil, marking pen, etc.) will not be accepted for plan check.

Plans that are not legible may be rejected as unacceptable for plan review purposes.

All plans shall be **stamped** by a licensed Professional Engineer or a Registered Architect as required by the New York State Department of Education Law with current renewal dates and “wet” signatures.

If, due to the scope of the work proposed, the plans are not required to be stamped, the plans shall be drawn utilizing accepted engineering practices and procedures. All line work and lettering shall be clear and legible.

Owner’s Information Certificate. NFPA 13 Figure A.22.1 (b). (Light hazard occupancies may be exempt. Ex- office, assembly.)

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
- 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 devises, ect.

Site Plan Information (If Applicable)

(NFPA 13:22.1.3 - 2007 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. (See A.23.1.8)

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

Locations of all “Exterior Audible” appliances include Fire Sprinkler Bells or Horns as applicable.

Locations of all PIV’s, Sprinkler Risers, Detector Check Valves, Water Flow indicators, and other devices with supervisory capability.

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 - 2007 Edition)

Water flow data may not be more than 3 years old.

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) at 20 psi residual with graphed results

Date

Time

Test conducted by or information supplied by

Other sources of water supply, with pressure or elevation.

Flow test: show gauge and flow hydrants

System Area Limitations:

Light & Ordinary Hazard: (NFPA-13, 8.2): 52,000 sq. ft. Max

Warehouse: (General & Rack Storage over 12 ft.) (NFPA-13, 8.2): 40,000 sq. ft. Max

Extra Hazard: (calculated) (NFPA-13, 8.2): 40,000 sq. ft. Max

Extra Hazard: (non-calculated) (NFPA-13, 8.2): 25,000 sq. ft. Max

Title Block Information

An original signature (within the block or stamp), on each plan sheet submitted;

Applicable codes: Ensure the current codes and editions are listed on the plans.

Authority Having Jurisdiction (City of Middletown, Fire Inspector)

Include description of occupancy and BCNYS classification and proposed use of structure(s).

All wet piping and heads shall be kept above 40 degrees F

Project location, including street address

Owner's name, address, and telephone number.

Occupant's name, address and telephone number, if different from owner.

Contractor/Professional contact name, address, telephone, fax numbers

Installation Company, address and telephone number

Fire Alarm / Automatic Fire Sprinkler signal monitoring company name, address and telephone number.
(Refer to FCNYS 903.4 and 903.4.2)

> In accordance with IFC 907.15, all fire alarm system shall be monitored by an approved supervising station. Brighton Fire Marshal considers all UL listed or FM approved central, remote or proprietary supervising stations as approved supervising stations.

A 3"x 4" space labeled for "Fire Inspector Use Only".
This will be used for the Fire Inspectors review comments, approval stamp, date, and signature

Building floor plan(s)

Plans must be clearly legible and where possible, drawn to 1'0" = 1/8" scale

A graphic representation of the scale used on all plans.

Symbol Legend & Abbreviation key

Point of compass.

Date of drawing

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.

Each sprinkler control room shall be clearly labeled with a sign reading “Fire Sprinkler Control Room”. Access to room to be provided to the Fire Chief in a method acceptable to the Fire Chief and the Fire Inspector.

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 areas where sprinklers have been intentionally omitted. Must also note with a code reference why sprinklers were omitted from these areas.

Location and size of concealed spaces, closets, attics, and bathrooms.

Any small enclosures in which no sprinklers are to be installed.

Maximum perpendicular distance to the walls is not greater than 1/2 of allowable distance between sprinklers, 8.6.3.2 and Tables 8.6.2.2.1(a through d), for sidewall sprinklers, 8.7.3.2 and Table 8.7.2.2.1. For irregular shaped or angled areas the sprinkler is horizontally within 75 percent of the permitted spacing between sprinklers, 8.6.3.2.3.

Sprinkler coverage is provided under obstructions greater than 4 ft. wide, 8.5.5.3.1.

Show all remote areas

Make, type, model, and nominal K-factor of sprinklers.

Area of coverage provided by each head

Light hazard occupancies shall have quick-response sprinklers unless residential sprinklers are required in accordance with 3.6.2.9 or if sprinklers are replacing existing standard sprinklers, 8.3.3.1, IFC 903.3.2.

Temperature rating and location of high-temperature sprinklers.

Total area protected by each system on each floor.

System design data plates and an 8 ½” x 11” laminated system map/building floor plan is required at each system riser.

Number of sprinklers on each riser per floor.

Any adjustments to the design area(s) or density(ies) based upon code provisions.

All indicating control valves and risers shall have permanent signs identifying the area of the building that is controlled by that valve or riser.

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 and/or preaction system.

Piping Legend to include: Pipe type and schedule of wall thickness, actual internal diameter.

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 water supply valves and flow switches are supervised, IFC 903.4 refer to exceptions

All control valves, check valves, drain pipes, and test connections.

> *Regardless of system piping capacity, dry pipe and double interlock preaction sprinkler systems shall be capable of delivering water to the Inspectors Test Connection within sixty (60) seconds of the inspector's Test valve being opened. Approved quick opening devices may be used to meet this requirement.*

Kind and location of alarm bells.

A weather proof exterior horn strobe shall be placed above the fire department connection in lieu of the exterior water motor gong. (Please refer to FCNYS 903.4.2)

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.

Fire Pump type (including manufacturer and model), capacity, speed, rated net pressure, diameter of impeller, inlet and outlet diameters, fuel or electrical requirements and location.

When a new system is an addition to an existing system, enough of the old system shall be indicated and included on the plans to show the total number of sprinklers to be supplied and to make all conditions clear.

Distinguish new from existing fire sprinkler equipment with "N "and "E" subscripts.

For hydraulically designed systems, the information on the hydraulic data nameplate attached to the riser.

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.

Piping provisions for flushing

Information about backflow preventers (manufacturer, size, type).

Information about antifreeze solution used (type and amount).

Sprinklers are provided in electrical equipment rooms, exception: the room is dedicated use, has dry type equipment, 2 hour equipment enclosures, and no combustible storage allowed, 8.15.10.

An alarm connection not less than 1 in., discharging to the exterior, located anywhere downstream of the water flow alarm is provided to test the waterflow alarm, 8.17.4.2.

Fire Department Connection(s)

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.

The FDC shall be arranged to face the street, driveway or fire apparatus access route as specified by the Fire Department.

FDCs shall be arranged so the lowest point on the inlet connection is between thirty (30) and forty-two (42) inches above finished grade at its location.

Fire department connection's shall be readily visible and accessible. FDC's shall not be obstructed by any landscaping, parking or storage, fences, etc. at any time.

Elevator Machine Rooms and Hoist way Pit

Ref.: ASME A17.1 (2000 edition)

Sprinklers installed in pits shall be arranged in such a way that the spray pattern shall not spray higher than two (2) feet above the pit floor with the spray pattern directed level and not down.

The sprinkler system shall be arranged to disconnect electrical service to the elevator main line prior to the application of water by the following method:

a. A fixed temperature 135 degree Fahrenheit thermal detector shall be provided within the elevator equipment room to disconnect the main line power.

b. Such thermal detectors shall be ceiling mounted and located within eighteen (18) inches of each sprinkler head.

c. Thermal detectors shall be an auxiliary function of the elevator equipment only, and shall be identified with signs reading:

"Elevator Control Only-- DO NOT TEST". The signs shall have letters at least one-half (±) inch high on a contrasting background.

d. Power for the automatic disconnect control circuit shall be derived from the load side of the elevator power main disconnecting means. The disconnect control device shall be located in the elevator equipment room, and shall be provided with a sign reading "ELEVATOR AUTOMATIC DISCONNECT." The sign shall have letters at least one-half (±) inch high on a contrasting background.

e. Automatic sprinkler heads installed in elevator pits do not require a power disconnect device. A shut-off valve shall be provided in an accessible location with the handle not more than six feet above the floor. The elevator machine room and the pit require separate control valves.

Hydraulic Calculations

(NFPA 13:22.3 - 2007 Edition) Hydraulic calculations forms shall include a summary sheet, detailed worksheets, and a graph sheet.

Summary Sheet

Date

Location

Name of owner and occupant

Building number or other identification

Description of hazard

Name and address of contractor or designer

Name of approving agency

System design requirements, as follows:

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)

Design area of water application, ft2 (m2)

Minimum rate of water application (density), gpm/ft2 (mm/mm)

Area per sprinkler, ft2 (m2)

Limitations (dimension, flow, and pressure) on extended coverage or other listed special sprinklers

Sloped ceiling may require a 30 percent increase of design area, 11.2.3.2.4.

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 - 2007 Edition)

Water supply curve

Sprinkler system demand

Hose demand (where applicable)

In-rack sprinkler demand (where applicable)

Additional pressures supplied by a fire pump or other source

The pressure (psi) loss assigned to the backflow device when included on a system.

Detailed worksheets or Computer Printout Sheets shall contain:

(NFPA 13:22.3.5.6 - 2007 Edition)

Sheet number

Hydraulic reference points used in each step

Elevation in feet (m) at each hydraulic reference point

Sprinkler description and discharge constant (K) for the flowing reference point

Flow in gpm (L/min) for the flowing reference point

Total flow in gpm (L/min) through each step

Nominal Pipe size in inches. (mm)

Actual internal diameter of pipe in inches. (mm)

Quantity and length in feet (m) of each type of fittings and devices for the step

Pipe lengths in foot (m) , center-to-center of fittings

Equivalent pipe lengths in foot (m) for fittings and devices for the step

Total Equivalent pipe lengths in foot (m) for fittings and devices for the step

C factor used in each step

Friction loss in psi/ft (bar/rn) of pipe

Sum of the pressures from the previous step Elevation

head in psi (bar) between reference points Total friction

loss in psi (bar) between reference points Notes and

other information shall include the following:

- Velocity pressure and normal pressure if included in calculations
- In-rack sprinkler demand balanced to ceiling demand
- 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
- Combined K-factor calculations for sprinklers on drops, armovers, or sprigs where calculations do not begin at the sprinkler

Please read the information below and sign before submitting your application

Your application shall be deemed complete only if this checklist is completed and submitted along with the submittal package. Submittals not accompanied by a checklist will not be accepted. Accuracy of the submittal package, including this checklist, is the responsibility of the applicant. Failure to submit an accurate submittal package will be considered an incomplete application by the Plan Reviewer.

An incomplete submittal will result in a **HOLD**.

If work is found to have commenced without approved plans and/or a proper permit, this office reserves the right to shut down any/all portions of the entire project deemed necessary to inspect, investigate and confirm that work has been done.

If any portion of the work performed is not clearly visible or readily accessible, you will be ordered to demolish, disassemble or remove any and all obstructions regardless of the cost incurred. Failure to comply will result in the suspension/revocation of any Building or other permits related to the site.

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

In addition, it is understood that the installation of systems shall be made only by persons properly trained and qualified to install the specific system being provided. The installer certifies to this authority that the installation is in complete agreement with the terms of the listing and manufacturer's instructions and/or approved design plan.

_____

Print Name

_____ _____

Signature Date