



# TOWN OF MILFORD

## FIRE DEPARTMENT

39 SCHOOL STREET

MILFORD, NEW HAMPSHIRE 03055



### Bureau of Fire Prevention & Investigation

(603) 249-0680

## Fire Protection Systems Submittal and Installation Requirements

This policy details the requirements for documents that must be submitted to the Milford Fire Department for approval of new fire protection systems within new construction, renovation or alteration projects. The purpose of these requirements is to ensure that the Milford Fire Department receives sufficient information to provide a thorough and adequate code review in a timely manner.

### Application and Fees

Plans submittals for fire protection systems shall be accompanied by the corresponding Milford Fire Department application for the system type to be installed.

- Modifications to existing fire alarm systems that result in the addition or deletion of not more than 5 devices do not require a permit or submittal.
- Modifications to existing sprinkler systems that result in the addition or deletion of not more than 20 sprinklers **AND** do not require a change in hydraulic calculations do not require a permit or submittal.

Permit and plans review fees are assessed at a rate of \$50 per system application plus \$0.50 per device. Devices are defined as follows:

Fire Alarm Device: Any product used to detect, alert, and transmit an alarm condition. These include initiating devices, modules, relays, isolators and interfaces, controls and switches, panels, power supplies, separate digital alarm communicators, and notification appliances.

Sprinkler System Device: Any product or component used to ensure the proper operation of a sprinkler system. These shall include sprinkler heads, valves, risers, flow switches, tamper switches, fire department connections, fire pumps and storage tanks.

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Alternative Fire Suppression System Device: Includes agent storage tanks, control and releasing panels, shutdown interface devices and relays, manual pull stations, detectors, notification devices and panels.

### **Current Applicable Codes and Standards**

All projects submitted to the Milford Fire Department must comply with the current NH State Fire Code and these applicable standards:

<b>Code</b>	<b>Topic</b>	<b>Edition</b>
NFPA 1	Fire Code	2018
NFPA 101	Life Safety Code	2018
IBC 2018	International Building Code	2018
NFPA 13	Automatic Sprinkler Systems	2016
NFPA 13R	Automatic Sprinkler Systems – Residential to 4 Stories	2016
NFPA 13D	Automatic Sprinkler Systems – 1 and 2 Family Homes	2016
NFPA 72	Fire Alarm and Signaling Code	2016
NFPA 14	Standpipes	2016
NFPA 20	Fire Pumps	2016
NFPA 24	Private Fire Water Mains and Hydrants	2016
NFPA 96	Ventilation and Fire Protection of Commercial Cooking	2017
NFPA 17A	Wet Chemical Extinguishing Systems	2017
NFPA 12A	Halon 1301 Systems	2015
NFPA 17	Dry Chemical Extinguishing Systems	2017
NFPA 12	Carbon Dioxide Extinguishing Systems	2015
NFPA 2001	Clean Agent Extinguishing Systems	2015
NFPA 10	Portable Fire Extinguishers	2018

\*Note: Other codes and standards may also apply. It is the responsibility of the building owner to comply with all applicable codes.

### **Plans and Submittal Documents**

All fire protection system submittals must include plans, detail drawings and equipment specification sheets. In addition to any submittal requirements listed here, plans and specifications must comply with the submittal requirements of the associated installation standard. Plans and submittal documents should be submitted electronically to the fire department for review. For specific questions about plans submittal, please contact the Deputy Chief of Fire Prevention.

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- **Fire Sprinkler Systems:** (if applicable) fire sprinkler plans shall be provided by the fire sprinkler installation contractor or their design engineering firm that contain the following information.
  - Complete sprinkler design criteria information included on the first plan of the sprinkler drawings.
  - Show floor plans for each floor with sprinkler piping layout, pipe sizes, pipe hanger details, piping materials, doors, walls and room identities.
  - Show ceiling plans with sprinkler head(s) layout, walls, soffits, openings, doors, dimensions and room identities.
  - Verify system design by providing hydraulic calculations, along with providing the following:
    - Hydrant test within past 12 months
    - 10 percent safety margin
    - Type of backflow preventer or reduced pressure zone showing equivalent foot loss.
    - Fire pump summary.
  - Note the type of Sprinkler System used (13, 13R, ESFR, etc.)
  - Commodity class and height of any storage.
  - MSDS Sheets on any Hazardous Materials.
  - Where special Temperature-rated or high temperature sprinklers are required, show sprinkler type(s) per area, office size, cut sheets with K-factor, water requirements, spray pattern, coverage, and other pertinent data.
  
- **Milford-specific sprinkler system requirements:**
  - All fire department connections for NFPA 13 systems or 13R systems with a total demand greater than 250gpm shall be a 4” Storz quarter-turn connection.
  - All fire department connections for NFPA 13R systems with a total design demand of less than 250gpm shall be a single 2.5” female brass swivel connection with NH thread.
  - A fire hydrant shall be installed within 100 feet of the fire department connection and, where practical, shall be placed on the same side of the fire department access road as the building.
  
- **Standpipe Systems:** (if applicable) standpipe system plans shall be provided by the fire sprinkler installation contractor or their design engineering firm that contain the following information.

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- Complete design criteria information included on the first plan of the system drawings.
- Show floor plans for each floor with piping layout, pipe sizes, pipe hanger details, piping materials, doors, walls and room identities.
- Show elevation views of stairways, including standpipe risers and hose valves within stairways or building areas.
- Verify system design by providing hydraulic calculations, along with providing the following:
  - Hydrant test within past 12 months
  - 10 percent safety margin
  - Type of backflow preventer or reduced pressure zone showing equivalent foot loss.
  - Fire pump summary.
- Note the type of standpipe system designed (automatic wet, manual wet, automatic dry, semiautomatic dry, etc.)
- Commodity class and height of any storage.
- Where pressure reducing valves are used, show the valves and setting for each on elevation drawings.
  
- **Milford-specific standpipe system requirements:**
  - All fire department connections for standpipe or combination sprinkler/standpipe systems with a total demand greater than 250gpm shall be a 4” Storz quarter-turn connection.
  - A fire hydrant shall be installed within 100 feet of the fire department connection and, where practical, shall be placed on the same side of the fire department access road as the building.
  - Standpipe hose connections shall be NH thread.
  
- **Fire Alarm Systems:** fire alarm plans shall be provided that contain the following information.
  - A floor plan including room labels showing the locations of alarm initiating and notification appliances, alarm control and trouble signaling equipment.
  - Annunciation means.
  - Power connection.
  - Circuit paths.
  - Details of ceiling height and construction.
  - The interface of fire safety control functions.
  - A fire alarm riser diagram showing reporting means to the fire department.

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- A fire alarm matrix showing input and output functions of the fire alarm system for each possible scenario or failure mode.
  
- **Milford-specific fire alarm requirements:**
  - Fire alarm control panels and remote annunciators or annunciator cabinets must be secured with a CAT 30 keyed cylinder lock.
  - All fire alarm pull stations must be key-secured (no screws or hex key locks) keyed to CAT 30.
  - Where the building is located on a street that is served by the Milford Fire Department Auxiliary telegraph alarm system, the primary reporting means shall be via a telegraph master box directly to the Milford Fire Department. Additional installation of a digital alarm communicator is permitted at the building owner's option.
  - New multiple-building campuses must provide separate alarm reporting for each building, meaning that each building with its own street address shall report independently to the fire department or to a central station so that the fire department is dispatched to the same street address as the building where a fire alarm is activated.
  - A full-building floor plan map including device locations shall be installed at the primary remote annunciator or main fire alarm control panel (when FACP is located at an entrance). The floor plan map shall be protected from damage and degradation by means of a covered frame or lamination. Illuminated graphic annunciators are also acceptable.
  - A single red strobe or flashing LED beacon shall be installed at the entrance to each building where the FACP or remote annunciator is installed. This beacon shall be visible from the fire department access road when activated and shall be activated when alarm conditions are present.
    - For buildings with multiple commercial units accessed exclusively from separate exterior entrances, such as strip shopping centers, a red beacon meeting these requirements shall be installed at the main entrance to each unit and shall activate when initiating devices in that suite have triggered an alarm.
  
- Underground Fire Water Mains and Fire Hydrants: site utility plans shall be provided that contain the following information:

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- A site plan shall be provided with fire water mains and all hydrants shown.
- If applicable, the size and location of the city main and connection to the private line shall be shown.
- Identify test hydrants and give flow, and pressure data for each.
- Indicate control valve types and sizes.
- Show size, type, and depth of underground piping (from city main to the inside of the building. Provide:
  - Underground piping connection detail
  - Detail of stub-up for hydrant
  - Thrust blocking
  - Rodding and rod size
  - Clearance (12" or 18" minimum from wall)
- Indicate the distance and location of all fire hydrants.
  - Fire hydrants shall be located not more than 12 ft (3.7 m) from the fire department access road.
  - For commercial and multi-family buildings: The maximum distance between fire hydrants shall not exceed 500 ft (152 m).
  - For detached one- and two-family dwellings: The maximum distance between fire hydrants shall not exceed 800 ft (244 m).
  - Indicate any other water supply (i.e., wells, tanks, etc.) where applicable.
- Alternative Fire Suppression Systems: floor plans showing the rooms, equipment, processes, or areas shall be provided along with engineered drawings and specifications for the system.