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Automatic Sprinkler Regulations

Chapter 1: General requirements

Chapter 2: System design requirements

Chapter 3: Equipment requirements

Chapter 4: System acceptance

Chapter 5: System maintenance

Chapter 6: Renovations or additions

Chapter 7: Multiply Family Structures

Chapter 8: One and Two Family Dwellings

Adopted: April 1, 1990

Revised: February 1, 2010

CHAPTER 1

GENERAL REQUIREMENTS

1-1 GENERAL REQUIREMENTS

- 1-1.1** In accordance with section 1.4.4.1 of the Salem Fire Prevention Code Ordinance of 2009, as adopted by the town, the following regulations are hereby adopted.
- 1-1.2** The following new and existing buildings shall be required to install and maintain an automatic sprinkler system in accordance with these requirements: (The IBC Use Groups are listed and may be used as a guide. The Authority having Jurisdiction will make the final determination).
 - 1-1.2.1** All buildings or portions thereof, classified as Place of Assembly Occupancies with an occupant load of 200 or more people. (IBC Use Group A).
 - 1-1.2.2** All buildings or portions thereof, classified as Educational Occupancies which shall include Day-Care Centers with more than 50 clients. Exception: Family day-care and group day-care homes. (IBC Use Group E)
 - 1-1.2.3** All buildings or portions thereof, classified as Health Care Occupancies which shall include ambulatory health care facilities and residential board and care facilities. (IBC Use Group 1)
 - 1-1.2.4** All buildings or portions thereof, classified as Detention or Correctional Occupancies. (IBC Use Group 1-3)
 - 1-1.2.5** All buildings or portions thereof, classified as Motels, Hotels or Dormitories. (IBC Use Group R1 and R2)
 - 1-1.2.6** All buildings or portions thereof, classified as Apartments which have more than three living units and/or are more than two stories in height. (IBC Use Group R1 and R2)
 - 1-1.2.7** All buildings or portions thereof, classified as Lodging and/or Room houses. (IBC Use Group R1 and R2)
 - 1-1.2.8** All buildings or portions thereof, classified as Board and Care Occupancies. (IBC Use Group 1)
 - 1-1.2.9** All buildings or portions thereof, classified as Mercantile Occupancies which have more than 9,999 sq. ft. of gross floor space.
 - 1-1.2.10** All buildings or portions thereof, classified as Business Occupancies which are two or more stories in height, including basements which are used for business purposes such as office and storage space or

which have more than 9,999 sq. ft. of gross floor space. (IBC Use Group B)

- 1-1.2.11 All buildings or portions thereof, classified as Industrial Occupancies which have more than 9,999 sq. ft. of gross floor area and/or more than two stories in height including basements. (IBC Use Group F)
- 1-1.2.12 All buildings or portions thereof, classified as Storage Occupancies which have more than 9,999 sq. ft. of gross floor space. (IBC Use Group S)
- 1-1.2.13 All buildings or portions thereof, which in the opinion of the authority having jurisdiction are a High Hazard Occupancy (including windowless buildings). (IBC Use Group H)

1-1.3 The owner, operator or occupant of any building shall be responsible for compliance with these regulations. For condominiums, the condominium association shall be responsible for compliance with these regulations. Where the phrase "property owner" is used throughout these regulations, it is intended to include any person identified in this section (1-1.3)

1-2 Purpose

- 1-2.1 The purpose of these regulations is to insure that all sprinkler systems installed within the Town of Salem, New Hampshire are designed, installed and maintained to achieve high degree reliability.
- 1-2.2 The Provisions of these regulations are not intended to prevent the use of the any material or method of work not specifically prescribed by these regulations provided such alternative has been approved by the authority having jurisdiction.
- 1-2.3 These regulations are intended for use by persons knowledgeable in the design, installation, use and maintenance of sprinkler systems.

1-3 Applicability

- 1-3.1 These regulations shall apply to the installation of any new sprinkler system, modifications or maintenance to existing sprinkler systems within the Town of Salem, New Hampshire.

1-4 Permits

- 1-4.1 Before any sprinkler system is installed, enlarged, extended or modified in any way: a permit shall be obtained from the Bureau of Fire Prevention.

1-5 Installer Certifications

1-5.1 Any sprinkler technician installing, making modifications or maintaining any sprinkler system in the Town of Salem, New Hampshire shall hold a valid and current Certificate of Fitness issued by the Salem Fire Department.

1-6 Knox Box

1-6.1 All buildings equipped with a sprinkler system which transmits directly to the Salem Fire Department, shall be provided with a key box which will facilitate rapid entry for fire suppression personnel.

1-6.2 All rapid entry key boxes shall be a type manufactured by:

The Knox Box Company

Applications shall be obtained from the Salem Fire Department Bureau of Fire Prevention. All completed orders and payment shall be submitted by the applicant to the Knox Box Company with shipment to be received by the applicant. The Salem Fire Department is not responsible for any orders or shipments.

Chapter 2
SYSTEM DESIGN REQUIREMENTS

2-1 General

2-1.1 All sprinkler systems within the Town of Salem, New Hampshire shall be designed, installed and maintained in accordance with the following National Fire Protection Association Standards: 1, 13, 13r, 13d, 20, 24, 25, 30, 72, 90A, 90B, 92A, 101, 231 (series) and 1221.

2-2 Plans

2-2.1 Two complete sets of design plans shall be submitted to the Bureau of Fire Prevention for review prior to the issuance of any permits.

2-2.2 All plans submitted for review shall include the following:

- 2-2.2.1** Accurate floor plans with dimensions show all device locations.
- 2-2.2.2** Riser diagrams.
- 2-2.2.3** Complete equipment list showing manufacture, make, type and all listings and approvals of all proposed equipment.
- 2-2.2.4** Zone designations shall be indicated.

2-2.3 Any change to previously approved plans shall be resubmitted for approval by the Bureau of Fire Prevention. Failure to have changes approved will be cause for system denial.

2-3 Zoning

- 2-3.1 No single sprinkler zone shall protect any area greater than 52,000 sq. ft.**
- 2-3.2 All buildings with multiple tenants shall be zoned by tenant spaces.**
- 2-3.3 All floors or stories of buildings shall be zoned independently. No zones shall be permitted to protect multiple floors.**

2-4 Hydrant/Water Supply

- 2-4.1 A fire hydrant shall be installed within one hundred feet of the fire department connection to the sprinkler/standpipe connection. The location of said hydrant shall be approved by the authority having jurisdiction.**
- 2-4.2 All hydrants will be installed in accordance with the Town of Salem Private Hydrant Regulations, Water Supply Regulations and the Town of Salem Water Department.**

2-5 Fire Department Connection (FDC)

- 2-5.1 The fire department connection shall be a four (4) inch Stortz connection.**
- 2-5.2 Prior to installing the FDC, the Bureau of Fire Prevention shall be called upon to conduct a site visit and direct the placement and location said FDC.**

2-6 Inspector's Test Valve

- 2-6.1 All systems must have an inspector's test valve for each riser/zone. Said valve(s) shall be taken from highest and most remote portion of each system they shall be accessible from the interior of the structure. They shall be piped directly to the exterior. Multiple floors may be gang drained for convenience.**
- 2-6.2 The valve handle shall be clearly marked and reachable from the floor without the use of a ladder, if the valve is behind an access panel, the panel shall be clearly labeled on the outside.**
- 2-6.3 The inspector's test shall have an orifice simulating the smallest sprinkler orifice in the system.**
- 2-6.4 All inspectors' test locations shall be piped directly to the exterior of the structure. These may be gang drained for convenience.**

2-7 Outside Shut Off

- 2-7.1 All new sprinkler systems shall be equipped with a supervised (tampered) outside shut off. This can be accomplished with either a PIV or a WPIV**

Listed Fire Service. Exception: This requirement may be waived if an all season exterior door / access passage is provided directly to the sprinkler room.

2-8 Miscellaneous

2-8.1 All areas of the building shall be covered. This includes but is not limited to electrical rooms, mechanical rooms, elevator machine rooms, closets, bathrooms, porches and balconies, drive thru and porte cochiers.

CHAPTER 3

EQUIPMENT

3-1 General

3-1.1 All equipment used for any sprinkler system shall be UL listed and/or FM approved for such installation.

3-1.2 All equipment used for any sprinkler system shall be new and of current manufacture. No used or rebuilt equipment will be accepted.

3-1.3 All equipment shall be of the same manufacture or compatible with other equipment within the system. Documentation showing that the devices are compatible shall be submitted with the plans for review.

3-1.4 All fire department connections shall be equipped with a 4" Stortz fitting.

3-1.5 All risers shall be equipped with a main water flow alarm.

3-1.6 All risers shall have either an electric bell or mechanical (water motor gong) alarm. The electric bell shall not be powered by the fire alarm system.

3-1.7 All risers shall have a low water pressure switch located on system side of the riser which will activate the fire alarm system. Pressure shall be set for a 60% pressure loss from static.

3-2 Back Flow Prevention

3-2.1 All sprinkler systems must be equipped with the back flow prevention devices as specified by the Town of Salem, New Hampshire and the Water department Superintendent.

3-3 Underground Mains

3-3.1 All underground mains shall be flushed and hydrostatically tested in accordance with NFPA 24. A certificate of Underground Piping shall be provided to the Fire Department at the acceptance test signed by the contractor and the owner.

**Chapter 4
SYSTEM ACCEPTANCE**

4-1 General

4-1.1 All sprinkler systems shall pass an acceptance test by the Salem Fire Department prior to connection of the sprinkler system to the fire alarm System.

4-1.2 Prior to the acceptance test, the system installer shall complete a certificate stating that the system has been 100% tested and functions in complete Compliance with the system specifications, the manufacturers recommendations and these regulations. This certificate shall be signed by the installer, the general contractor and/or property owner and shall be presented to the inspector at the time of the acceptance test and prior to starting any testing. (Aboveground Piping Certificate, Underground Piping Certificate and the NFPA 25 test/inspection form)

4-1.3 The system installer shall provide all necessary personnel and equipment to complete the testing. Fire Department personnel will not perform any function involved with the testing procedure.

4-1.4 Any changes made to the design of the system shall be documented and submitted on as-built drawings to the Fire Department and the owner prior to the start of any testing.

**CHAPTER 5
SYSTEM MAINTENANCE**

5-1 General

5-1.1 the property owner is responsible to maintain the sprinkler system and all devices attached thereto, in prior working order at all times.

5-1.2 All maintenance to sprinkler systems shall be done by competent Certificate of Fitness holders who are knowledgeable in the system.

5-2 Routine Testing, Inspections and Reporting

5-2.1 The property owner is responsible to have 100% of the system tested and inspected in accordance with NFPA 13 and NFPA 25.

5-2.2 The property owner shall maintain written reports of each annual test. The property owner shall provide to the Bureau of Fire Prevention copies of such reports upon completion of the test and inspection.

5-2.3 The Certificate of Fitness holder shall be allowed to call the Salem Fire Alarm Office and put the fire alarm system on “test”. In doing so, any trouble alarms received in the Fire Alarm Office will be disregarded. The Certificate of Fitness Holder shall remain at the site at all times and keep a fire watch. If any problem develops, he shall call the FAO via 911 and advise of the emergency situation. If the card holder is going to send the box into Fire Alarm, he must notify Fire Alarm of his intentions immediately prior to sending the alarm in. If the card holder trips the system accidentally (without notifying the FAO), he shall call FAO immediately. If the system trips into FAO and it was caused by the card holder, he will call the FAO and report activation so a full response call can be sent. When the work is complete, the Certificate of Fitness holder MUST call back and report the system is “off test”. Failure to follow this procedure will result in the revocation of his/her fitness card.

5-2.4 Short arms and shunt trip devices for master boxes are not allowed to be used at any time unless express written permission is given by the Salem Fire Department.

CHAPTER 6 **RENOVATIONS OR ADDITIONS**

6-1 General

6-1.1 Whenever an existing building or structure is enlarged, extended or modified greater than 50% of the total existing area of the building or structure, the entire building or structure shall be upgraded to comply with these requirements.

6-1.2 Whenever an existing building or structure is enlarged, extended or modified and the estimated cost of the job as declared on the building permit issued for the job from the Town of Salem is greater than 50% of the total assessed value of the building or structure, the entire building or structure shall be upgraded to comply with these requirements.

6-1.3 For the purposes of Chapter 6, any work done on buildings within twelve month period of time shall be taken into consideration when calculating area, renovations, building permit fees, etc.

CHAPTER 7
MULTIPLE FAMILY STRUCTURES UP TO
AND INCLUDING 4 STORIES

7-1 General

- 7-1.1** All new multiple family up to and including 4 stories in height shall be protected throughout by an approved automatic sprinkler system installed in accordance with NFPA 13R and the applicable sections of this document.
- 7-1.2** All areas of the building shall be protected including but not limited to:
 - Attics, porches, exterior (attached) mechanical closets, closets, bathrooms, porte-cochères, and other combustible spaces as required.
 - Requests for omissions are required to be specifically approved by the Fire Marshal. All requests shall be in writing with appropriate written support.
- 7-1.3** All zones shall have an end of line inspector's test piped directly to the exterior of the structure.
- 7-1.4** All systems shall be equipped with a WPIV, PIV exterior shut off unless a sprinkler room is provided with an exterior door directly accessing the room.

CHAPTER 8 **ONE AND TWO FAMILY DWELLINGS**

8-1 General

- 8-1.1** All new one and two family dwellings shall be protected throughout by an approved automatic sprinkler system installed in accordance with NFPA 13D and the contents of this document as defined by NFPA 101 Life Safety Code 2006 Ed. As adopted March 10, 2009.
- 8-1.2** All areas of the home shall be protected with the exception of the following:
 - 1) Attics if they are rendered inaccessible to occupancy and storage and do not contain mechanical systems such as heat pumps, air conditioning etc.
 - 2) Closets and bathrooms if they meet the exception requirements in NFPA 13D
- 8-1.3** All systems shall be equipped with the following.
 - 1) Exterior electric bell set to activate upon water-flow or pump activation (if applicable)
 - 2) Flow switch shall be interconnected to the smoke detectors to activate upon water-flow or pump activation (if applicable)

These sprinkler regulations are issued on the order of:

Jeffrey S Emanuelson, CFI
Fire Marshal

on _____

Date