



Version 1.0 | Approved by: *T. Gates* **Tod Gates, Lynnwood Fire Marshal | Effective Date: 04/14/2015**

Purpose

This document provides fire sprinkler designers, installers, plan reviewers, fire inspectors, and building owners with important information regarding the requirements for fire sprinkler systems within the City of Lynnwood. It is intended to provide consistency between all parties during plan design, submittal, review, installation, inspecting and testing of new and existing fire sprinkler systems.

Users of the document are strongly cautioned to read the ENTIRE document as pertinent information is contained in specific sections that are intended to work together.

Scope

The information contained within this document details the local amendments to the International Fire and Building Codes, applicable NFPA codes, Washington Administrative Code and the Revised Code of Washington. It also outlines local policies and interpretations pertaining to new and existing fire sprinkler systems within the City of Lynnwood. Whenever a requirement in this document conflicts with a requirement from a published code, the requirement in this document shall prevail. Nothing in this document shall prevent the Fire Marshal of the City of Lynnwood from modifying these requirements as necessary, based on circumstances, to provide an acceptable level of protection.

Contents

Purpose..... 1

Scope 1

Applicable Codes 2

Design and Installation:..... 2

 Sprinkler Riser Rooms 4

 NFPA13..... 4

 NFPA 13D 5

 NFPA 13R 5

Testing/Maintenance:..... 6

Applicable Codes

All referenced codes are meant to be the currently adopted edition unless a specific edition is noted.

NFPA 13, 13D, 13R, 2010 edition
Lynnwood Municipal Code (Title 9)
Lynnwood Fire Marshal's Standards
Lynnwood Fire Marshal's Code Interpretations
National Fire Protection Association
International Fire Code
International Building Code
Washington Administrative Code
Revised Code of Washington
American National Standard Institute

Design and Installation:

1. All new or modified sprinkler systems (including mixed use and shell & core buildings) shall be designed to meet the design density and spacing of Ordinary Hazard Group II unless a more hazardous design is required.

EXCEPTION: Buildings of A, E, or R occupancies, providing the total square footage of the building contains no more than 10% of a higher occupancy hazard.
2. Limited area or partial building sprinkler systems are not allowed. If a sprinkler system is installed in any part of a new or existing building, the sprinkler protection shall be extended throughout the structure.

EXCEPTION: This does not include dry or wet chemical pre-engineered suppression systems for commercial kitchen hoods or listed paint booths.
3. Hydraulically designed systems shall be calculated to provide a 10% safety cushion in addition to the required system demand at 20 psi residual pressure.
4. Flexible sprinkler piping shall not be used in pipe-schedule sprinkler systems unless specifically listed for such use.
5. The required fire flow volume as required by Appendix B of the 2012 IFC may be reduced by up to 50% in buildings protected by a NFPA 13 sprinkler system.
6. Sprinkler systems in buildings in excess of 5000 sq. ft. are to be connected to the municipal water supply via a minimum 6" water line.
7. All multiple story buildings shall be provided with individual floor control valves to control the sprinkler supply to each floor. A flow switch, check valve, main drain, pressure relief valve, and gauge shall be provided for each control valve.

EXCEPTION: Two story buildings with open stairways.

8. All NFPA 13 and 13R sprinkler systems shall be provided with an inspectors test valve. The dry system test valve is to be located at the most hydraulically remote point in the system. The wet system test valve is to be located at the end of a 1" branch line near the hydraulically remote point of the system.

NOTE: Each floor of a multi-story building having an individual floor control valve shall be provided with a remote inspectors test valve.

9. All dry-pipe sprinkler systems shall supply a steady flow of water to the inspectors test orifice within 60-seconds, regardless of the capacity of the system.
10. Fire separation walls up to and including 4-hour rated walls shall not be allowed to reduce the size of a building for the purpose of avoiding the installation of an automatic fire sprinkler system.
11. Sprinkler protection may be omitted from non-combustible concealed spaces provided the space is constructed of fully non-combustible material and all contents (wiring, plumbing, ductwork, etc.) are Class A flame spread or plenum-rated.
12. Exposed insulation located above sprinkler heads shall be supported by a minimum 24" x 24" non-combustible wire mesh.
13. All drains (low point, auxiliary, test, main, etc.) are to be plumbed to the exterior of the building.
14. All valves (control, drain, etc.) shall be readily accessible and reachable without the use of a ladder.

EXCEPTION: valves in a pit or underground and valves specifically exempted by the Fire Marshal.

15. Wet-pipe sprinkler systems shall be utilized whenever conditions allow. Dry-pipe systems shall be limited to buildings and areas that are unable to be maintained at a minimum of 40-degree Fahrenheit.
16. The use of anti-freeze sprinkler systems or loops is prohibited.
17. The use of heat tape on fire sprinkler systems is prohibited.
18. Fire department connections and standpipe connections shall be located away from the building, out of the collapse zone, within 50 feet of a hydrant, in a location approved by the Fire Marshal. The FDC/standpipe shall be provided with 2.5" NST hose connections.
19. No hose connected between the hydrant, fire engine, and FDC shall block ingress or egress to the scene.
20. At the discretion of the Fire Inspector on site, a hydrostatic pressure test may be required on new or modified sprinkler piping involving 20 or more sprinkler heads.
21. Sprinklers shall be provided in the elevator machine room, elevator pit and at the top of the elevator shaft. These heads shall be supplied from a normally open supervised control valve(s).

EXCEPTION: Elevator protection is not required in 13D systems.

22. Any sprinkler component, device, piping, etc. that is no longer in service or not being used shall be removed. This includes excessive branch line arm-over piping supplying a sprinkler head.
23. Field changes in the sprinkler installation from the approved design/plan must be approved by the sprinkler designer and accepted by the Fire Marshal. Revised plans, signed/stamped by the sprinkler designer, shall be submitted to the Fire Marshal with ample time for review prior to approval for cover.

Sprinkler Riser Rooms

1. Sprinkler riser rooms for NFPA 13 and 13R systems shall be located on an outside wall at grade. Such rooms shall be of one-hour rated construction throughout and provided with a 45-minute door with a minimum opening of 36-inches directly to the exterior.
2. The riser room shall contain all sprinkler control valves, backflow assembly (unless prohibited by the water purveyor), fire pump, if provided, and the fire alarm control panel(s). No other uses or utilities including storage shall be allowed in the room.
NOTE: Individual floor control valves may be located in other locations if approved by the Fire Marshal.
3. Riser rooms shall be of a size that will allow a minimum of 36-inch clearance on at least 3 sides of all sprinkler risers, around all portions of the fire pump assembly and its appurtenances, and in front of the fire alarm control panel(s).
4. This room shall be provided with a thermostatically controlled heater capable of maintaining a minimum temperature of 40° Fahrenheit to prevent freezing. Adequate lighting shall be provided.
5. Major building remodels or square footage increases shall elicit the need to construct an exterior accessible riser room if not previously existing.
6. A red placard with 1" white lettering reading "FIRE SPRINKLER CONTROL ROOM" shall be permanently installed on the exterior of the riser room door at a height of 72".
7. A City of Lynnwood designated lock box shall be installed on the exterior of the riser room door at a height of 60".

NFPA13

1. Sprinkler protection of the same design hazard as the interior of the structure shall be provided under all exterior canopies, balconies, overhangs, and any other projection in excess of 48" (24" if covering storage) unless the projection consists of a minimum of 50% open space on top for heat release. This requirement applies regardless of construction type.
2. Sprinkler protection may be omitted from non-combustible concealed spaces providing the entire concealed space is void of any combustible material or construction. This includes but is not limited to materials such as PVC, ABS, non-plenum rated wiring, paper faced insulation, and any other non-Class A fire retardant material.

3. Existing sprinkler deficiencies including piping without adequate seismic bracing or hangers, painted heads, inadequate sprinkler coverage, etc. shall be made to comply with current standards whenever the sprinkler system is modified. The area of these upgrades shall be throughout the area of sprinkler modification.

NFPA 13D

1. The sprinkler supply (riser) shall be connected to the domestic plumbing supply in such a manner that prevents the sprinkler system from being shut off without turning off the main domestic water supply.
2. The system shall be designed so each sprinkler head in the design area is capable of discharging the manufacturer's listed flow / pressure based upon the maximum coverage area.
3. The sprinkler system shall be looped with a flow-through design and include a main pressure gauge.
4. No dead end piping is to exceed 20' in length.
5. A sink or toilet shall be connected to the sprinkler system near the most hydraulically remote area to allow water to circulate through the system.
6. A sprinkler head shall not be required in small bathrooms less than 55 sq. ft.
7. No backflow device (except water meter), alarm valve, or separate sprinkler control valves are allowed.
8. All fueled fired equipment (water heater, furnace, etc.) shall be protected by a minimum of one (1) sprinkler head.
9. A red placard with one-half inch (½") white lettering reading "THIS VALVE SHUTS OFF THE DOMESTIC WATER AND FIRE SPRINKLER SYSTEM" is to be permanently installed at the main valve location.
10. In the event a 13D sprinkler system is installed in a two-family dwelling, each dwelling unit shall have an independent sprinkler system.
11. 13D sprinkler systems shall be hydrostatically tested at the normal system operating pressure.
12. Private fire pumps and water storage tanks shall not be used to supply 13D sprinkler systems.

NFPA 13R

1. In addition to sprinkler protection required by NFPA 13R, sprinkler protection shall be extended to the attic(s), all bedroom closets, all bathrooms, garages, exterior storage closets, under balconies and decks located on the second floor and above, and under covered exits and porches in excess of 48" in depth.
2. All 13R systems shall be provided with a FDC.
3. All 13R systems shall be hydrostatically tested at 200 psi for two (2) hours.

Testing/Maintenance:

1. Testing of fire sprinkler systems, fire pumps, standpipes, and associated components/equipment shall be as detailed in the appropriate NFPA Standard.
2. Service providers hired by the building owner are responsible for electronically submitting completed annual confidence test reports of sprinkler systems, fire pumps, and standpipes to the Lynnwood Fire Marshal's Office via the online reporting system Tegrifire.com within 14 days of the completed inspection.