



# WESTMINSTER FIRE DEPARTMENT

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## FIRE PREVENTION BUREAU

**Jim Gagliano, Fire Marshal**

## Fire Sprinkler Plan Review Submittal Requirements

KEY PERSONNEL			
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Please contact Kelly Ehredt if you need administrative help with our fire permit process or questions about the status of a fire permit [kehredt@westminsterco.gov](mailto:kehredt@westminsterco.gov) or 303-658-4511.

1. New systems and modifications to existing systems shall comply with design standards and shall conform to requirements specified.
2. The typical time for a first review of projects is up to four (4) weeks. Submittals should be made with this expectation. Re-submits are up to two (2) weeks for review.
3. Drawing files must be flattened by reviewer after markups/comments are made. If file cannot be flattened the review will not be completed until a copy is uploaded to the permit that can be flattened.
4. We do accept scope of work letters if they meet certain criteria. Please see the scope of work letter criteria for fire sprinkler systems at the end of this document.
5. We do accept expedited review requests based on current workloads. An expedited review is typically a 48-hour turn around Monday- Friday. The fee for an expedited review is two times the original plan review fee. Please email any expedite review requests to [fireinspections@westminsterco.gov](mailto:fireinspections@westminsterco.gov).
6. Fire sprinkler plans are required to be reviewed and sealed by at least a NICET III- Water Based Systems Technician or higher, or a Professional Engineer registered in the State of

Colorado in a related field.

7. Include product data sheets for all components of the system.
8. Drawings shall include all relevant items from NFPA 13- 2019 edition section 27.1.3 and or NFPA 13R- 2019 edition section 8.1.7.
9. A pressure gauge shall be required on all NFPA 13 systems, located above and below the main valve and/ or cross-connection control device.
10. Each fire sprinkler design area for multiple hazards must be shown on the plans.
11. Sprinkler legend shall include sprinkler symbols uses, sprinkler manufacturer, model, SIN, orientation, temperature, quantity, and square feet for coverage areas.
12. A 10% safety factor must be added for all NFPA 13 and NFPA 13R systems and shall be taken from the static and residual pressure as required by DFPC 8 CCR 1507-11 6.2.6.
13. A 5% safety factor must be added for all NFPA 13D system and shall be taken from the static and residual pressure as required by IFC (2021) 903.3.1.3 as amended by the City of Westminster.
14. Contractor shall include a contractor's material and test certificate for above ground piping.
15. Residential fire sprinkler plans- The applicant is required to fill out the water line information at the bottom of the home screen within ETRAKIT. The information shall include the water line size and its length. The best practice is to put extra allowance in the length of the water line to allow for unexpected construction events.
16. A permanent, weatherproof sign is required to be placed over the FDC in a visible location. Sign letters shall be white in color on a red background and be at least 4" tall with a 1/2" inch stroke in block font.
17. The sign shall say "FDC". There may be instances where several FDC signs are required with arrows guiding firefighters to the FDC. IFC 912.2.2 states that FDC signs shall be at least 6" in height with a minimum of 3/4" stroke width.
18. There shall be occupant notification within a building where a fire sprinkler system has been installed. The occupant notification shall be interconnected to the fire sprinkler

system. NFPA 13D systems are exempted from this requirement.

19. All NFPA 13D residential fire sprinkler systems shall have a horn strobe device installed on the street side of the structure in a visible location. Passive purge systems are exempted from this requirement.
20. All fire sprinkler systems shall be equipped with backflow prevention devices. Please reference the City of Westminster requirements for backflow devices at [www.westminsterco.gov/standardsandspecifications](http://www.westminsterco.gov/standardsandspecifications)
21. It is important for designers to note the location requirements for NFPA 13D backflow prevention devices. Please see #19 above.
22. All FDC connections shall be within 100' of a fire hydrant.
23. Signage is required to identify key fire protection equipment locations such as FACP, FDC (six inch for FDC), and FIRE SPRINKLER RISER ROOM shall be constructed with white letters on a red background with a minimum of 4 inches tall letters with a ½" inch stroke in block font.

### **Standpipe Requirements**

1. All standpipe designs shall meet NFPA 14 criteria and IFC requirements.
2. Roof pressure requirements can be modified in some instances with AHJ approval.

### **Inspection Procedures**

1. Inspection requests can be made up to 4:00 PM the day before an inspection is to take place through the ETRAKIT system. The ETRAKIT system will allow you to schedule on the next available day.
2. A joint inspection is preferred when there are numerous fire permits for the same project. For example, a fire sprinkler and fire alarm inspection is preferred to be performed at the same time.

3. As built drawings shall be uploaded to the permit prior to the final inspection. Failure to follow this requirement will result in partial pass on the final inspection until the plans are uploaded and approved.
4. Systems shall be pretested prior to the fire inspector's arrival on site.
5. A fail with fee may apply when an inspection is not passed and needs to be reinspected.
6. Special equipment or appliances required to perform inspections shall be provided by the contractor. The City of Westminster Fire Department will provide hydrant testing equipment when performing a flow test.
7. A hydro test is required for all fire sprinkler system modifications that exceed 20 fire sprinkler heads or a brand-new system installation. This is not a requirement where a system section cannot be isolated in an existing fire sprinkler system. This requirement will be at the discretion of the AHJ.
8. You will be called on the morning of the requested inspection and given either an inspection time window or an exact inspection time.

### **Underground Requirements**

1. A separate fire permit shall be obtained for the underground fire line for NFPA 13 and NFPA 13R fire sprinkler systems.
2. Fire line installations shall comply with NFPA 24 and applicable City of Westminster engineering requirements.
3. A Westminster Fire Inspector shall be present for fire line super flushes. The fire line flush shall comply with the requirements of NFPA 24.
4. There shall be a means of collecting the debris from with the fire line that is being flushed. A burlap sack is preferred.
5. Remote FDC connections shall be within 100' from a fire hydrant.

## **Water Flow Test Information**

1. A new fire sprinkler system design shall be based off water flow tests that are not more than 12 months old, unless the Westminster Fire Department approves an older test.
2. Hydrant flow test requests should be sent to – [fireinspections@westminsterco.gov](mailto:fireinspections@westminsterco.gov)

## **Fire Hose Threads and FDC Requirements**

1. All hose thread connections shall be National Standard Thread (NST).
2. FDC access shall be clear and unobstructed for a width of three (3) feet in all directions.
3. FDC locations, more than forty (40) feet from approved fire apparatus access, shall require approval from the Westminster Fire Department.
4. The FDC shall be located within one hundred (100) feet of a fire apparatus access road, and fire hydrant along an approved route. Temporary FDC locations require the approval of the Westminster Fire Department.
5. FDC approved locking KNOX caps are required on all new installations and when existing caps are broken and in need of replacement or a new installation.

## **City of Westminster Amendments to the 2021 IFC**

1. 509.1 Identification- Fire protection equipment shall be identified in an approved manner. Rooms containing controls fire protection equipment, utility equipment, or hazardous materials shall be identified for the use of the fire department with permanently installed and readily visible signs constructed of durable materials. Signs required to identify fire protection equipment location, such as FDC, FACP, FIRE SPRINKLER RISER ROOM, and FIRE COMMAND ROOM, shall be constructed with white letters on a red background with a minimum of 4-inch-tall letters with a ½ inch stroke in block font.
2. 901.4.7.5 Location- Fire sprinkler riser rooms and fire pump rooms shall be located at grade level and accessible directly from the outside, and their location shall be subject to

approval of the official fire code.

3. 903.1.2 Anti-freeze systems- Anti-freeze systems shall be listed.
4. 903.3.2.1 Residential fire sprinkler heads are prohibited in light hazard occupancies.
5. 903.3.2.2 Residential and quick response fire sprinkler heads- All installations of residential and quick response fire sprinkler heads shall be in strict accordance with their listings. Where listings authorize installation where prohibited in 903.3.2 and 903.3.2.1, the fire code official may waive the requirements mandated by 903.3.2 and 903.3.2.1.
6. 905.3.1 of the IFC is amended by adding exceptions 7 and 8 as follows:  
Height shall be amended by adding the following exceptions:  
Exception 7: Class 1 standpipes are allowed to be manual systems.  
Exception 8: Fire hose is not required for Class III standpipes. Standpipe hose outlets shall be two 2.5” outlets with a 2.5” cap.
7. Section 905.3.9 of the IFC is amended as follows:  
905.3.9 Bridges and roadway overpasses- Where required to extend water supply to streets, highways, and rail systems, a dry standpipe shall be installed in accordance with fire department requirements.

## **Fire Sprinkler Scope of Work Letter Requirements**

To provide a more streamlined plan review process, the Westminster Fire Department allows the submission of a scope of work letter in lieu of providing full shop drawings for modifications to existing fire sprinkler systems that meet the criteria noted below in full.

THE SCOPE OF WORK LETTER IS NOT INTENDED TO BE USED FOR MULTIPLE SMALL PROJECTS AS A SUBSTITUTE FOR A FULL SUBMITTAL. A FULL SUBMITTAL WILL BE REQUIRED FOR PROJECTS WHERE THE CUMULATIVE SCOPE OF WORK IMPACTS MORE THAN (20) SPRINKLER HEADS WITHIN A 180-DAY PERIOD.

To be eligible for a scope of work letter submission, the following criteria shall be met in full:

- The scope of work must not impact more than a total of (20) sprinkler heads, including relocations and additions.

- The existing hazard classification must not be changed from the existing classification. The contractor shall attest to verifying the original classification as it was designed or determined.
- The scope of work cannot be located within Group E or Group H occupancies.
- The scope of work cannot negatively impact the hydraulic demands of the system, including any modification to the k-factor of the existing sprinkler heads. This shall be clearly indicated in the scope of work letter.
- The scope of work cannot include high-hazard commodities, including but not limited to, hazardous materials, flammable/ combustible liquids, high-piled storage, or rack storage, etc.

All scope of work letters are required to be reviewed, stamped and signed by a NICET III- Water Based System Layout Technician or a Professional Engineer (PE) registered in the State of Colorado. In addition, all scope of work letters are required to include the following:

1. A written description of the proposed work on the fire sprinkler contractor's letterhead bearing their state registration number and indicating the designated Representative.
  - This letter shall include number of sprinklers impacted, hazard classification, sprinkler characteristics including temperature classification, k-factor, and response type.
  - This letter shall indicate that existing sprinklers in pertinent areas are verified as not being recalled by the manufacturer or due for testing or replacement as per NFPA 25.
  - This letter shall indicate that existing spare head cabinet will be updated for new sprinklers.
2. All equipment data sheets in PDF format for newly installed equipment, with the specific make and models clearly highlighted.
3. Any additional clarifying information that may be beneficial to the reviewer such as schematic drawings, etc.

The scope of the work description needs to be as specific as possible. This statement must cover the full scope of the permit. Incomplete descriptions, i.e., "adding or relocating heads for a new layout," will not be accepted. Any associated modifications, removal, relocation, or additions to pipe, valves, or equipment shall be clearly indicated. The Westminster Fire Department has the right to require a full submittal at any point during the review process if it is deemed necessary due to insufficient scope of work submittal.