

# FARMINGTON FIRE-RESCUE



***"Serving Those in Need"***

430 Third St.  
Farmington, MN 55024  
651-280-6940



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## Automatic Fire Sprinklers Systems

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Subject: Automatic sprinkler systems shall be installed or modified with a fire inspection permit and be in compliance with the following requirements:

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### Statement of Purpose:

The Farmington Fire-Rescue Department recognizes the importance of automatic fire sprinklers systems, which often play a major role in loss prevention during a fire emergency. The basic purpose of an automatic fire sprinklers system is to detect a fire in its early stages, notify the building occupants that there is a fire emergency and report the emergency to first responders.

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### Submittal Requirements:

- A permit application signed by a state licensed sprinkler contractor.
- A check made out to the City of Farmington in the amount required as stated on permit application.
- A minimum of 3 sets of plans, specifications, and hydraulic calculations. The minimum drawing size scale is 1/8th inch = 1 ft.
- Extinguishing systems for kitchen hoods spray booths and similar locations require a separate permit.

### General Requirements:

- All sprinkler systems must meet the minimum requirements of the Minnesota State Fire Code.
- The entire sprinkler system must be designed and installed per current applicable standards, i.e., 13, 13D, 13R and current Minnesota State Building Code.
- The City of Farmington has adopted Chapter 1306 including item E1 of the Minnesota State Building Code.

### Calculations:

- Sprinkler contractor is responsible for choosing the appropriate density and for the accuracy of hydraulic calculations.
- Sprinkler systems in buildings used for storage must have a minimum remote area designed for 2000 square feet.
- Sprinkler systems in industrial/commercial buildings with an undetermined use must have minimum sprinkler design of Ordinary Hazard Group 2 over a 3000 square foot design area and have 8.0 or higher K-factor sprinkler heads.
- Sprinkler systems with specialized design criteria (high pile storage, flammable liquids) must include a code analysis of the proposed design including specific code references.

### Water Supply:

- Sprinkler systems in multi-tenant buildings must have the riser assembly located in a separate room with an exterior access door or when approved, in an interior room immediately adjacent to an access door. All doors on the interior and exterior of the building providing access to sprinkler system controls must be clearly labeled as such.
- Water flow data may not be older than 3 years old.
- When fire sprinkler water supply is shared with domestic water, an electric solenoid valve is required when the domestic supply is 1/4 size or larger of total water supply.
- Water lines supplying only a sprinkler system must be a minimum of 6 inches.

### System components and Hardware:

- Fire department connections shall be minimum of 15 feet from gas meters and electric transformers.
- Fire department connections shall be a minimum of 2 feet above grade and a maximum of 4 feet above grade.
- A PIV, WPIV, is required and must be provided on the supply side of the check valve. Valves may be omitted if an exterior door is provided with direct access to fire sprinkler controls.
- All indicating control valves and risers shall have permanent signs identifying the area of the building that is controlled by each riser.
- A zone map is required on all multiple riser systems. The map must be permanently mounted adjacent to sprinkler riser, alarm panel, and annunciator panel.
- In multiple story buildings, fire sprinkler systems are to be zoned by floor. **Birdcage** design is not acceptable.
- Detect meters are not required in the City of Farmington.
- Power supply breakers for all alarm system components, including exterior sprinkler alarms and air compressors must have approved locking devices to prevent the accidental disconnection of power.
- Fire protection systems that are hydraulically calculated shall have a 5-psi safety factor at maximum system flow.

### Monitoring & Alarm:

- Systems with 20 or more heads must be equipped with central station monitoring service.
- Monitoring systems must comply with NFPA 72 including panel requirement for audible trouble signals and must have two means of signal transmission.
- All components of the system must be UL listed for their application and be compatible.
- The fire alarm control panel or a remote annunciator must be located at the main entrance unless otherwise approved.
- A smoke detector and pull station are required in the room or area of FACP.
- All indicating control valves, including PIV, WPIV must be secured and electronically monitored.
- Test the flow switch retard setting with inspector's test valve. A 35-60 second delay is required.
- Main drain and primary inspectors test must terminate at the exterior of the building.

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## Inspections Required:

- All underground water supply lines must be properly flushed and hydrostatically tested. Fire department will witness all flushing.
- 24-hour advance notice is required when scheduling inspections.
- Rough-in inspection required if piping or hangers will be concealed.
- 2-hour 200 lb. hydrostatic test including the fire department connection.
- 24-hour air test (dry systems only).
- Main drain and alarm test.
- Systems must be 100% tested prior to calling for inspection.
- Water may not be introduced into sprinkler piping from the City main until the Fire Chief or their designee witnesses a flush test per 2010 NFPA 13 10.10.2.1.

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Rationale: Minnesota State Fire Code

## **CHAPTER 9. FIRE PROTECTION SYSTEMS**

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**No Work shall be started without a permit and reviewed set of plans on the job site.**

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