SOUTH KING FIRE
31617 1st Ave S
Federal Way, WA 98003
Prevention: 253-946-7348
Inspection Request: 253-946-7318
Email: prevention.web@southkingfire.org

RESIDENTIAL FIRE SPRINKLER SYSTEMS

FIRE PREVENTION GUIDELINES

SCOPE AND PURPOSE

To provide a policy and guidelines for Residential Fire Sprinkler Systems (NFPA-13D) installed within the City of Federal Way and the City of Des Moines.

CODE AUTHORITY

International Fire Code.

OVERVIEW

This policy outlines the conditions for an automatic fire sprinkler system for residential properties, including single-family homes, duplexes, and townhomes. The requirements for installing an automatic residential fire sprinkler system are intended to mitigate life-safety issues related to emergency access, water supply, and anticipated response times.

REQUIREMENTS FOR RESIDENTIAL PROPERTIES

Residential buildings with habitable spaces, including adult family homes, are required to have an automatic residential fire sprinkler system when the following conditions are not met:

A. Residential buildings on properties without adequate fire apparatus access as defined by the International Fire Code (IFC).

B. Residential buildings on properties that are not provided with all of the following:

1. The minimum fire apparatus access road as defined by the International Fire Code.
2. Water supply from a water utility providing a minimum of 1,000 gallons per minute (GPM) at 20 pounds per square inch (PSI) for buildings up to 3,600 square feet of floor area or the minimum fire flow required for buildings 3,601 square feet or greater per the International Fire Code Appendix-B table(s).
3. Fire hydrant(s) within 350 feet of the property line, as measured by vehicular travel.

C. An adult family home with a capacity of seven or eight that serves residents who require assistance during an evacuation.

If an automatic fire sprinkler system is to be installed in the building, then full compliance with fire apparatus access and/or water supply is not required as the installed fire sprinkler system serves as a fire protection mitigation.

FIRE ACCESS ROAD REQUIREMENTS

A fire apparatus access road/fire lane can be a driveway, easement, or a public or private road that meets all of the following requirements:

A. Minimum 20-foot wide, unobstructed permanent all-weather driving surface with 37.5-ton (75,000 lbs.) loading capacity.

B. All portions of the exterior walls of residential buildings (at grade) must be within 150 feet (as a person would walk via an approved route around the building) from an approved fire apparatus access road/fire lane.

C. A maximum grade of 15 percent at all locations, and a maximum side slope grade of 5 percent.

D. Vertical clearance of 13 feet, 6 inches.

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E. A minimum 32-foot inside turning radius and 40-foot outside turning radius at all bends and turns. A fire apparatus access road/lane or driveway over 150 feet long is required to have an approved turnaround for the fire apparatus. An approved hammerhead configuration on private property or a cul-de-sac with an 80-foot diameter is acceptable.

RESIDENTIAL BUILDING ADDITIONS AND REMODELS

Residential building additions and remodels requiring the installation of an automatic fire sprinkler system will also require the existing portion of the residence to be retrofitted with fire sprinklers.

WATER AVAILABILITY

Applicants may obtain information regarding fire hydrant distances (as measured by vehicular travel) and water supply (fire flow) from the local water utility in the form of a Certificate of Water Availability, or a Hydraulic Fire Flow Model. The actual fire flow (GPM) that is available from the closest fire hydrant is the information necessary to accurately determine fire sprinkler requirements as related to the water supply availability.

Parcels that rely on well water, where a water supply from a water utility is not available and the lot is in a rural area will be required to install an automatic residential fire sprinkler system. A stored water source on-site with an automatically operated pump or a well with a pump of sufficient capacity and pressure to meet the sprinkler system demand is acceptable.

FIRE ACCESS ROAD IMPROVEMENTS VS. SPRINKLER SYSTEM INSTALLATION

It may be possible to perform road and driveway improvements to meet the minimum access requirements, however, property owner(s) must obtain applicable approvals and permits before any work is performed.

When applicants revise a plot plan to meet fire access requirements, a plan or revisions must be submitted for review and approval. Fire apparatus access road improvements may not be allowed or may trigger additional permit requirements such as clearing, grading, critical areas review, wetland mitigation, drainage improvements, and/or impervious surface limitations per the local Land Use or Development Services regulations. Additional permits, reviews, and conditions may delay the permitting process and add to the cost of the project.

INSTALLATION OF RESIDENTIAL FIRE SPRINKLER SYSTEMS

See the South King Fire “Installation of Residential Fire Sprinkler Systems” policy for additional information and details.

https://www.southkingfire.org/266/Administrative-Policies