



Mercer Island Fire Marshal's Office
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13 R RESIDENTIAL SPRINKLER STANDARD

These design standards have been adopted by the Mercer Island Fire Department and have been established for the design and installation of sprinkler systems for one- and two-family dwellings, zero lot line townhomes and manufactured homes.

The 2016 edition of NFPA 13, NFPA 13D, and NFPA 13R shall be used unless specifically noted otherwise. The current Mercer Island-adopted building and fire codes shall be used. See Mercer Island Municipal Code Title 17.

NFPA 13R PLUS – FIRE SPRINKLER SYSTEM REQUIREMENTS

All requirements of NFPA 13R and the following additions and modifications are required.

- **Water supply**

A 1 1/2" minimum water meter and 2" minimum service line to the base of the riser is required for all 13R Plus sprinkler Systems. This is the minimum requirement and the sprinkler calculations for the project shall determine the **actual** meter and service line size. The Plumbing Code may still require a larger size. A water meter permit will not be issued until the sprinkler permit is approved. To reduce delays, sprinkler plans shall be completed as early in the process as possible.

- **Back Flow Preventer**

A 1 1/2" minimum Backflow preventer and Riser is required.

- **Fire Department Connection (FDC)**

A 1 1/2" hose connection is required in a visible location beside the garage door. The check valve shall remain accessible for service. The FDC pipe run shall be a minimum of 1 1/2" and shall maintain that size all the way to the riser.

- **Water Flow Alarm**

The sprinkler system shall have installed a means of notification for a water flow event.

INTERIOR: You may connect the water flow switch to the sounder side of the line voltage smoke alarms. Firex smoke detectors use part # 0498 and Kidde with relay/power supply module SM120X are currently approved for this purpose.

If you cannot interface the water flow switch to smoke alarms then a separate horn or bell is required to be located on each level including the basement or lowest level of the structure for occupant water-flow notification to a minimum of 75 dBA in the sleeping rooms.

EXTERIOR: An exterior grade 8" Potter bell or equivalent shall be installed. This shall be above the FDC.

- **Garage Coverage**

Full coverage of attached garages is required. It is expected that all heads will operate in the event of a car fire within the garage and the system shall be designed to provide adequate flow. Any garages with more than 4 heads in them need to be piped in a manner that a larger flow is available than would be normally designed. An 1 ½" feed shall be provided from the riser to any heads greater than 4 within the garage.

- **Sprinkler System Drain**

The system drain shall be piped all the way to the exterior of the building and not cause damage to landscaping while water is flowing. *Hose connections are not allowed.*

- **Spare Head Box**

A cabinet containing a minimum of two spare heads of each type and a sprinkler wrench shall be provided.

- **Storage Room**

Any crawlspace that has a concrete floor or flooring and a full size door shall be presumed to be a future storage room and sprinkler coverage shall be provided.

- **Bathroom Coverage**

All bathrooms regardless of size shall be covered.

- **Closet Coverage**

All closets in common areas or egress pathways shall be covered.

- **Water Flow Monitoring**

Water flow monitoring by a Central Station is required.

- **Decks, balconies and patio Coverage**

Where a roof or deck is provided above, sprinklers shall be installed to protect attached exterior balconies, attached exterior decks, and ground floor patios serving a dwelling unit.