



## **Residential Multipurpose Fire Sprinkler Systems**

**Sprinkler systems shall be designed to IRC Appendix R or NFPA 13D.**

Bonney Lake Municipal Code requirements:

Multipurpose fire sprinkler systems shall be installed in all new one and two family residences. BLMC-15.16.017 - Stand-alone sprinkler systems are not allowed in new construction.

Substantial Remodels or additions that exceed 50% or greater change to the existing floor area shall meet the provisions of this code and shall apply to existing and proposed additional square footage in their entirety. BLMC-15.16.010 and 15.16.020 - Stand-alone sprinkler systems may be allowed in remodels or additions to existing structures.

### **I. General Requirements**

1. Where a residential fire sprinkler system is required, a minimum one inch (1") meter (or larger depending on system flow demand) and a one and one half inch (1 1/2") service line from the meter to the home is required. BLMC-13.04.120(E)

#### **Exceptions:**

- a. For existing residential structures required to add a multi-purpose or stand-alone fire sprinkler system, if the water supply in place can meet the design water demand for the new system, then the existing meter and service line will be allowed.
2. System monitoring is not required on one and two family homes.
3. An approved audible device shall be connected to every sprinkler system. Water flow devices shall be connected to (1) exterior and (1) interior notification device (horn or bell), activated by a water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. The exterior notification device shall be located on the address side of structure and the interior notification device shall be located in a normally occupied space, typically immediately inside the structure by the garage man door. Where a fire alarm system is installed, activation of the automatic sprinkler system shall activate the building fire alarm system. BLMC-15.16.050

4. Contractors shall demonstrate compliance with State Sprinkler license requirements for NFPA 13D systems.

**Note:** Homeowners who install their own residential fire sprinkler system are exempt from State licensing installation requirements. However, the designer of the system and plans are required to be a licensed professional.

5. Sprinkler and alarm system equipment shall meet the manufacturer's requirements for installation.
6. Fire sprinkler plans will be reviewed and approved by East Pierce Fire and Rescue.
7. Sprinkler drops and dead ends shall be limited to maximum of 36" in length.

**Exceptions:**

- a. Stand-alone systems designed for remodeled residential structures meeting code requirements.
8. Water treatment/filtration systems shall have an automatic bypass as required by NFPA 13D.
9. Sprinkler piping shall comply with all requirements for cold water distribution piping. The sprinkler piping shall connect to and be a part of the **cold** water distribution piping system.
10. Nonmetallic pipe and tubing, such as CPVC and PEX, shall be listed for use in residential fire sprinkler systems.
11. Piping shall be protected from freezing. Where sprinklers are required in areas that are subject to freezing, dry-side-wall or dry-pendent sprinklers extending from a nonfreezing area into a freezing area shall be installed.
12. The area of coverage of a single sprinkler shall not exceed 400 square feet and shall be based on the sprinkler listing and the sprinkler manufacturer's installation instructions.
13. Sprinkler discharge shall not be blocked by obstructions unless additional sprinklers are installed to protect the obstructed area. Sprinkler separation from obstructions shall comply with the minimum distances specified in the sprinkler manufacturer's instructions.
14. Pendent sprinklers within 3 feet of the center of a ceiling fan, surface-mounted ceiling light or similar object shall be considered to be obstructed, and additional sprinklers shall be installed.
15. Sidewall sprinklers within 5 feet of the center of a ceiling fan, surface-mounted ceiling luminaire or similar object shall be considered to be obstructed, and additional sprinklers shall be installed.
16. A means to drain the sprinkler system shall be provided on the system side of the water distribution shutoff valve.

17. When fuel fired equipment is present, at least one quick-response intermediate temperature sprinkler shall be installed above the equipment.

**Exceptions:**

- a. Where fuel-fired equipment is installed above all of the occupied areas of the dwelling unit, no sprinkler protection shall be required in the concealed space. NFPA2013-13D-8.3.5.1.1
- b. Attics, crawl spaces and normally unoccupied concealed spaces that do not contain fuel-fired appliances do not require sprinklers.
- c. Clothes closets, linen closets and pantries not exceeding 24 square feet in area, with the smallest dimension not greater than 3 feet and having wall and ceiling surfaces of gypsum board.
- d. Bathrooms not more than 55 square feet in area.
- e. Carports; exterior porches; unheated entry areas, such as mud rooms, that are adjacent to an exterior door; and similar areas.

Unless fuel fired equipment is present. If fuel fired equipment is installed in the areas listed above then follow NFPA2013-13D-8.3.5.1.2- where fuel fired equipment is below or on the same level as occupied areas of the dwelling unit, at least one quick response intermediate temperature sprinkler shall be installed above the equipment or at the wall separating the space with the fuel fired equipment from the occupied space.

- f. Garages need only one sprinkler covering the garage/house door and any fuel fired equipment.

**II. Plan submittal (a minimum of four sets of plans and specifications are required)**

1. Provide floor plan scaled drawing (1/4" = 1'-0") showing all of the following:
  - a. Size/type of sprinkler heads.
  - b. Location/coverage of sprinkler heads.
  - c. Size/type of sprinkler piping.
  - d. Product specifications and manufacturer's cut sheets for all system components
  - e. Type and location of all valves, check valves, shutoff valves, et cetera.  
**Note:** Backflow prevention devices are not required on this type of system.
  - f. Two family units require a separate meter for each unit (Each sprinkler system shall not serve more than one dwelling). No exceptions.
  - g. The fire sprinkler system shall be installed per NFPA 13 D.

**III. Rough Inspection**

1. All system components shall be in place at the time of rough pipe inspection.
2. Bucket test will be required for the two most remote heads flowing at the same time through the same size orifice as listed head being tested.

#### **IV. Final Inspection**

1. The system shall be in service at the time of final inspection.
2. All heads and escutcheons shall be in place.
3. On completion of the final, all handles shall be removed or locked in open position.

##### **Exceptions:**

- a. Monitored systems.
4. Flow switch shall be activated by a contractor and notification devices shall sound.
5. Extra sprinkler heads and head wrench shall be placed in head box near riser.
6. A warning sign, with minimum 1/4" letters, shall be affixed adjacent to the main shutoff valve and shall state the following:

**Warning:** The water system for this home supplies fire sprinklers that require certain flows and pressures to fight a fire. Devices that restrict the flow or decrease the pressure or automatically shut off the water to the fire sprinkler system, such as water softeners, filtration systems, and automatic shutoff valves, shall not be added to this system without review of the fire sprinkler system by a fire protection specialist.

**DO NOT REMOVE THIS SIGN**

If you have any questions please contact:

East Pierce Fire and Rescue

Fire Marshal/Prevention Office

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