Fire Department

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NFPA 13D FIRE SPRINKLER SYSTEMS
(Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes)

Design and installation requirements shall meet minimum requirements, including those items amended and addressed below, following the California Fire Code Chapter 9, Section 903.3.1.3 with the current adopted cycle as published in California Fire Code Chapter 45 (or as otherwise amended by the State Fire Marshals Office).

The installation of an NFPA 13D fire sprinkler system involves not only the fire sprinkler contractor, but also the plumbing and electrical contractors as well. It shall be the responsibility of the fire sprinkler contractor to inform all parties of the requirements associated with the fire sprinkler system.

It is the responsibility of the Fire Sprinkler Contractor to inform the owner and/or builder to contact the California Water Service Company prior to plan design, to facilitate information for hydraulic calculations for sizing of water meter(s) so they are installed correctly. California Water Service Company (310) 257-1400 will initiate a domestic fire service information worksheet. An approved set of plans and permits shall be on the job site at all times. 3 sets minimum are required at the time of initial submittal. No work shall be performed until all permits have been obtained. Any deviation, field changes from the approved plans shall be shown (redlined) on the approved job plans by installers prior to first inspection by the inspector.

WATER SUPPLY/RISER:

1. California Water Corporation, under direction of the State and Federal Environmental Protection Agencies requires USC, UL approved backflow prevention devices installed (taking the place of Soft-Seat Check Valves in fire sprinkler systems), on all residential systems. The correct pressure loss of this device must be incorporated in the hydraulic calculations. Backflow prevention devices shall require a minimum locking of valves in the open position (for tamper supervision).

2. Duels service single feed underground supplies and riser shall be installed per Figure A-2-2 (c) published at: www.redondo.org/fire - **NFPA13D.** A separate fire sprinkler control valve (option reference 3-1.1 exception No.1) is unacceptable. The main control valve shall be an indicating ball valve. The required backflow device shall require minimum key-lock supervision.

3. Each two-unit residential complex shall have a separate system.

4. Underground supply piping shall be sized per hydraulic calculations. No smaller than a one (1) inch water meter shall be provided. Pressure loss of the correct device shall also be included in the calcs.

PLANS/CALCULCATIONS:
1. Plans shall be stamped and signed by a licensed C-16 contractor or fire protection engineer, and include calculations, listed devices being installed, packaged in minimum of 3 complete sets. Working plans shall be drawn in accordance with Chapter 6-1, 6-1.1.1 NFPA 13 and 13D. NO EXCEPTIONS. Water supply information shall be listed on plans (NFPA 13D Chapter 6.3).

2. Allowances for domestic usage (5 GPM minimum), and required fire hose outlet usage and any other special systems when applicable shall be considered in the calculations.

3. Water supply information (certificate/letter addressing the property, attached to each set of hydraulic calcs) shall be obtained from the water purveyor. The static pressure shall be reduced 10% (cushion) prior to design calculations. It is the Fire/Life Safety Inspectors discretion to request the sprinkler contractor to perform a one or two head (bucket) test/s.

LOCATION OF PROTECTION: Fire sprinklers shall be installed in all areas including:

1. Attics or crawl spaces containing force air unit (FAU), heating / ventilating / air -
2. conditioning unit (HVAC), and any area of the attic or crawl space that is accessible for storage.

3. Skylights with more than 20 cubic feet of space shall be sprinklered.

4. Garages

Exceptions: Clothes/linen closets, restrooms and pantries meeting the allowance of 13D.

ALARM/NOTIFICATION:
1. Horn/strobe combination is required on the exterior of the structures. The alarm shall be located on the front of the house or as near as possible to the front.

2. Automatic sprinkler system flow devise shall be interconnected to sound alarm notification appliances throughout the dwelling where a fire warning system is provided. (No inside notification appliances required when the flow alarm is interconnected to the resident smoke detection system). If no interconnection is provided to the in-house smoke detection, separate notification appliance devices shall be required in-house to meet notification. Notification shall meet NFPA 72 for 15 dB above the average ambient sound level within the residence. (The average residential ambient sound level is 35 dBA - minimum 50 dBA).

3. Horn/Strobes may be connected to a kitchen circuit. If the (circuit) breaker is not accessible from the outside of the residence, an additional switch shall be provided and located near the fire sprinkler riser. The waterproof cover for this switch shall be installed with a breakable lock.

REQUIRED FIELD INSPECTIONS:
1. The underground piping shall be thoroughly flushed and witnessed by a representative of the Redondo Beach Fire Department.

2. A representative of the Redondo Beach Fire Department shall conduct a rough sprinkler piping inspection.

3. A final sprinkler inspection and test will be conducted only after electric power has been installed.

SIGNAGE:
1. Signs shall be attached to all valves incorporated in the fire sprinkler system indicating their function and/or location.

MAINTENANCE:
1. The owner is responsible for the condition of a sprinkler system and shall keep the system in normal operating condition. NFPA 13D, Section 1-4. NFPA 13D, A-1-4: The responsibility for properly maintaining a sprinkler system is of the owner or manager who should understand the sprinkler system operation. A monthly maintenance program should include the following:

a. Visually inspect all sprinklers to ensure against obstruction of coverage,
b. Inspect all valves to assure that they are open,
c. Test all water flow devices and alarm systems.

THE FOLLOWING ITEMS ARE REQUIRED AND SHALL BE INCLUDED VERBATIM ON THE FIRE SPRINKLER PLANS:

1. This residential sprinkler system shall be designed and installed per NFPA 13D and Redondo Beach Fire Department practices and policies.
2. Devices shall be installed with: Approved ball valves; pressure switches; double check backflow; and horn/strobes along with other UL listed equipment where required.
3. Only new UL listed residential sprinklers shall be employed in the installation of this sprinkler system.
4. This residential sprinkler system shall require a minimum of a rough inspection (for verification of piping, hangers, hydro, etc.), and a final inspection, prior to occupancy. The Fire Prevention Inspector shall be notified a minimum of one business day in advance of the requested inspection by calling the Fire Prevention Bureau's Fire Inspector at: (310) 318-0673.
5. A stock of three spare sprinkler heads of each style type and temperature rating with a sprinkler wrench shall be located near the main riser. The correct wrench(s) shall be supplied for each different sprinkler used. No other wrench(s) will be accepted. A system "owners manual" along with the installing company's name and contact phone number shall also be included.
6. All valves shall have a permanently affixed sign indicating its function.
7. Pipe shall be supported from structure members. CPVC pipe requires the manufacturer's installation listed hangers/supports and locations.
8. The spacing and location of sprinklers shall conform to the manufacturer's installation listing for the construction and the designer's calculations, along with installation

requirements of NFPA 13D and policies and practices administered by the Fire Chief.

9. The underground shall be installed under direct supervision by the sprinkler contractor, who shall witness the installation and required flushing prior to connection of the overhead piping.
10. The underground piping shall be thoroughly flushed prior to connection to overhead fire sprinkler system.
11. All underground piping used shall be listed for its purpose and installed per local adopted plumbing code/s.
12. System shall be equipped with alarm initiating devices inside and an outside Horn/Strobe located at the front of the building and/or as near as possible to the front.

    a) Horn/strobe shall not be obstructed from front of residence view by down spouts, gutters, trim or mullions, etc.
    b) The weather proof Horn/Strobe shall be connected on a kitchen light circuit or a dedicated tamper proof circuit breaker of sufficient amperage capacity.
    c) If the circuit is on a separate breaker that breaker must be identified and provided with a breaker lock.
    d) If this circuit is not accessible from outside the building, and additional tamper and weather proof disconnect switch shall be provided and located near the fire sprinkler riser.
    e) Flow devise shall be interconnected to sound alarm notification appliances throughout the dwelling where a fire warning system is provided. (No inside notification appliances required when the flow alarm is interconnected to the resident smoke detection system).
    f) If no interconnection is provided to the in-house smoke detection, separate notification appliance devices shall be required in-house to meet notification.
    g) Notification shall meet NFPA 72 for 15 dB above the average ambient sound level within the residence. (The average residential ambient sound level is 35 dBA).
    h) Fire alarm signal shall be a distinctive sound, different from other signals and comply with the requirements of NFPA 72, or otherwise as approved by the Fire Department.