



Rancho Santa Fe Fire Protection District

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Fire Sprinkler Policies and Procedures

Plan Submittal Process

The Rancho Santa Fe Fire Protection District (district) requires all fire sprinkler plans to be reviewed and recommended for approval by a third-party consultant acceptable to the district prior to submittal. **Fire sprinkler plans with less than five sprinklers being added, subtracted, replaced, relocated, etc. may be submitted directly to the district for review without first being reviewed by third party. All submittals are required to have supporting documentation and hydraulic calculations for the review process.** Please submit three (3) complete sets of plans, hydraulic calculations, and appropriate manufacturer specifications for review and approval prior to beginning any installation. A list of approved third-party consultants can be found on our website at www.rsffire.org. The fire sprinkler contractor submitting the plans shall be responsible for satisfying all fees associated with third-party review before plans are released back to the fire sprinkler contractor. In addition, all district plan review fees shall be due upon submitting plans. All plan submittals shall be in accordance with the current state adopted editions of NFPA 13, NFPA 13R, and NFPA 13D standards, the Rancho Santa Fe Fire Protection District's local ordinance and adopted amendments. When designing the system, please make sure you reference the approved building plan for the specific type of sprinkler system required by the district. If you are unable to get a copy of the approved building plans from the contractor, please reach out to the district.

NOTE: Any designer or installer having questions regarding specific details on unique installation challenges is encouraged to contact the Fire Prevention Bureau at (858) 756-5971.

When Fire Sprinklers Are Required

Section 903.2 of the 2022 edition of the California Fire Code is revised to read:

903.2. Where Required: Approved automatic sprinkler systems shall be installed in all new buildings. For the purpose of automatic sprinkler systems, buildings separated by less than 10 feet from adjacent buildings shall be considered one building. Fire barriers and partitions, regardless of rating, shall not be considered as creating separate buildings for purposes of determining automatic sprinkler system requirements. Mezzanines shall be included in the total square footage calculation. All new buildings constructed shall have an approved NFPA 13, NFPA 13R or NFPA 13D automatic sprinkler system installed as per 903.3.1.1, 903.3.1.2 or 903.3.1.3. The Fire Code Official has the final decision of which NFPA 13 standard to apply, NFPA 13R or NFPA 13D as required due to access, water supply and travel time. **R-3 Occupancies over 6000 square feet shall be designed and installed to NFPA 13R most recent edition referenced in Chapter 80 CFC.**

Exceptions:

1. Group U occupancies not greater than 500 square feet, when the building is 20 feet or more from an adjacent building and 30 feet from property line measured from the farthest projection from the building.
2. Agricultural buildings constructed of wood or metal frames over which fabric or similar material is stretched, which are specifically used as green houses are exempt from the automatic sprinkler system requirements unless physically connected to other buildings.

903.2 (a). Additions: An automatic sprinkler system shall be required to be installed throughout the building when the addition is more than 50% of the existing building or when the altered building will exceed a fire flow as calculated pursuant to section 507.3. The fire code official may require an automatic sprinkler system to be installed in buildings where no water main exists to provide the required fire flow or where a special hazard exists, such as poor access roads, steep grades and canyon rims, hazardous brush and response times greater than 5 minutes by a fire department. The fire code official may require that other

protective measures be taken based on existing conditions and/or potential hazards. The preceding addition or remodel exception is limited to one permit per three-year period from the date of the last permit approval.

903.2 (b). Remodels or Reconstructions: The fire code official may require an automatic sprinkler system to be installed throughout buildings if a remodel or reconstruction includes significant modification to the interior or roof of the building. The fire code official may require that other protective measures be taken based on existing conditions and/or potential hazards. The preceding addition or remodel exception is limited to one permit per three-year period from the date of the last permit approval.

903.2 (c). Group U Occupancies: For Group U Occupancies greater than 500 square feet, an approved automatic sprinkler system shall be installed as per NFPA 13D edition referenced in Chapter 80 CFC, or as approved by the FAHJ.

NFPA 13D Installation Requirements

The following areas will also require fire sprinkler coverage:

- Garages, carports, and similar structures unless they meet the exception in section 903.2(c).
- Covered patios, decks, balconies, walkways, or similar projections that extend 10 feet or more from the exterior wall surface (wall to edge of farthest projection).
- Bathrooms under 55 square feet (include tubs and showers in square footage) with combustible fixtures including fiberglass tubs.
- Attics, basements, etc. that are designed for storage or that will be used for storage.
- All fuel-fired equipment shall be protected by at least one, quick-response, or residential intermediate temperature sprinkler.
- All areas beneath stairways which allow for access or storage.
- Closets less than 24 square feet with any type of electrical source, even low voltage.
- Saunas, wine rooms, utility rooms, walk in coolers, etc.
- Exposed CPVC piping in storage areas shall installed per manufacturer specifications.
- **All piping, including the fire sprinkler riser shall be a minimum 1" unless otherwise specified by the district.**
- **The permanent water meter shall be a minimum 1" unless otherwise specified by the district.**
- Fire sprinklers in conditioned space shall be an approved ordinary temperature variety.
- Water pressure in excess of 130 psi shall require a pressure-regulating valve acceptable to the FAHJ and be installed before the fire sprinkler riser. If pressure reducing valves are installed a pressure relief valve shall be installed at 175psi.

Water Source & Design Criteria:

The water supply information and date obtained from the water purveyor must be included on every plan submitted and shall be within one year of the current date at time of submittal. All systems shall be designed 10% below available water source pressure during peak use. **The Fire District will not accept water supply data from the fire sprinkler contractor.** The specified water meter shall be capable of supplying the designed demand of the sprinkler system in addition to the domestic demand and irrigation. **Depending on the water purveyor, a dedicated fire meter, a dual meter system or a backflow preventer may be required.**

Residential fire sprinkler finals will not be approved with a construction water meter. The permanent approved water meter shall be installed by the water purveyor prior to final inspection.

Hydraulic calculations shall be provided flowing all sprinklers in a compartment to a maximum of two (2) head calculation, except as noted below in "b" and "c".

(b). Should no compartment as defined by NFPA-13D have more than a single sprinkler present, only one sprinkler is required to be flowing in the hydraulic calculations.

(c). In all residential buildings where sprinklers are to be installed in beams which are sloped at a pitch exceeding the listing of the sprinkler, hydraulic calculations shall be submitted flowing three sprinklers in the compartment.

When design conditions exceed the allowance of NFPA 13D section 10.2, a 3-head calculation may be required by the district.

When sprinklers are installed in beams, the depth of the beam may not exceed 14" or the maximum depth allowed by the listing of the sprinkler, whichever is greater. When beam depth exceeds the greater of 14" or the maximum depth allowed by the listing of the sprinkler, sprinklers shall be located in the pockets formed by the beams.

Fire Sprinkler Riser:

The riser shall be located in the main garage area with an interior access panel and the FAHJ may allow the riser to be installed behind a door or cabinet. However, it shall be labelled as "Fire Sprinkler Riser" by a permanently mounted sign prior to final inspection. All fire sprinkler risers shall have a minimum 3-foot clearance around them for access and maintenance.

Each separate building (such as guest living quarters, Accessory Dwelling Units, detached garages, etc.) will require a separate riser, water flow alarm and inspector's test valve. The riser shall be labeled "Fire Sprinkler Riser" and have an exterior access panel unless the garage can accommodate an interior access panel.

A spare head box shall be installed near the riser and be properly equipped with spare fire sprinkler heads, a fire sprinkler wrench, an inspector's test valve key, and operation and maintenance instructions.

Inspector's Test Valve:

An inspector's test valve is required at the most remote location of the system riser and shall have a ½" or larger threaded keyless valve. The valve shall be located on the building exterior about five 5 feet above final grade and shall be labeled with a permanent plate stating: "INSPECTOR TEST". The plate shall be on a contrasting background with a minimum ¼" lettering. (Pre-assembled riser assemblies with a built-in Drain/Test valve shall not be accepted as the inspector's test valve unless approved by the FAHJ.). Automatic fire sprinkler systems for manufactured homes installed at the factory may have the inspectors test valve located at the location as designed at the factory.

Alarm Bell and Monitored Systems:

Water flow alarm(s) shall be clearly audible in all living spaces over background noise with all intervening doors closed. This will occasionally require that the residential structure be equipped with more than one bell. The fire sprinkler bell shall be a minimum 8" in diameter, be located near the master bedroom, and may be required to be interconnected with the smoke alarms.

Residential fire sprinkler systems with 100 heads or more shall be monitored by central station monitoring and shall be tested during the final inspection.

Structures having an NFPA 13, NFPA 13R, or modified NFPA 13 fire sprinkler system with more than 20 fire sprinklers, shall have central station monitoring. Sprinkler systems shall be maintained in accordance with the current adopted edition of NFPA 25 and documentation shall be provided to the district annually.

NFPA 13R Installation Requirements

For R3 occupancies which are greater than 6,000 square feet measured under roof line, please meet the following installation requirements:

- Hydraulic calculations are to be provided with the most demanding four sprinklers in a compartment flowing at the greater of:
 - A density of water of 0.05 gpm/ft² over the coverage per sprinkler, or
 - The listed water and pressure demand for residential sprinklers
 - Plumbing fixture equivalent demand per NFPA 13R, §9.6 and table A.9.6(A) and (B) is required to added, in systems serving both fire sprinkler and domestic water demands.
- A single 2.5" FDC connection with National Hose Threads shall be installed on the exterior wall of the fire sprinkler riser, at the backflow preventor or standalone.
 - A brass FDC face plate is required to be installed.
- The water meter and or wet tap shall be sized accordingly to support the hydraulic calculations.
 - If the sprinkler system has a slim safety margin utilizing a 1" water meter, the district reserves the right to request an upsize in water meter to ensure an adequate safety margin.
- The underground water supply piping to the fire sprinkler system shall be in conformance with the currently adopted

edition of NFPA 13R and NFPA 24.

- A backflow preventor may be required per the water purveyor.
- Sprinkler protection is required in attic spaces, by one of the following:
 - Listed attic sprinklers.
 - Listed upright residential sprinklers.
 - Quick-response extended coverage upright sprinklers.
 - Deflector position for upright sprinklers relative to the framing members are to be:
 - In accordance with the requirements of §10.2.6 of the 2022 edition of NFPA 13, or
 - In accordance with the listing requirements of the sprinkler
- Non-metallic piping may be used for the attic or basement spaces if the sprinkler is listed for such use.
- Unfinished basements are to be protected with either:
 - Quick-response upright sprinklers with a maximum coverage area of 225 ft².
 - Listed upright residential sprinklers spaced in accordance with their listings.
- Attic spaces and basement spaces shall be compartmentalized with draft stops. Please consult the district regarding compartment sizes.
- Sprinkler pipe hanging and bracing shall comply with NFPA 13.
- If systems are required to have an NFPA 20 compliant fire pump, please consult the district about possible mitigation measures.
- Sprinkler systems shall be maintained in accordance with the current adopted edition of NFPA 25 and documentation shall be provided to the district annually.

NFPA 13 & Modified 13 Installation Requirements

The Rancho Santa Fe Fire Protection District has many unique structures that do not meet the scope of NFPA 13D which is strictly for one and two-family dwellings. When structures do not meet this scope, they are subject to a modified NFPA 13 fire sprinkler system or an NFPA 13 fire sprinkler system. The type of fire sprinkler system required is based on the type of structure (detached garage, barn, etc.) and if the property has a private fire hydrant on site or not.

Note: All Group U occupancies including detached barns & detached garages less than 3,000 square feet with no habitable space attached are permitted to utilize an NFPA 13D fire sprinkler system. Mixed use Group U occupancies are subject to a modified NFPA 13 or an NFPA 13 fire sprinkler system. Building construction type will also be considered in making a sprinkler determination.

Properties with a private fire hydrant on site:

- A full NFPA 13 fire sprinkler system is required.
- The design density will depend on the hazard being protected.
- A sprinkler monitoring system may be required for 20 or more fire sprinklers and shall be a deferred submittal to the district.

Properties without a private fire hydrant on site:

- Provide a four (4) head calculation, with a design density of .15 per square foot.
- A minimum of 19.5 gallons per minute per sprinkler head
- No fire pump allowed.
- Provide a sign on the riser-This is a life safety system only, it is not designed for property protection.
- Provide a remote Fire Department Connection and Post indicator Valve with a check valve in between.
- Install a permanent sign on the Fire Department Connection stating do not exceed 150psi.
- CPVC is not allowed in structure unless it meets NFPA 13 requirements and the manufacturer's listing.
- A sprinkler monitoring system may be required for 20 or more fire sprinklers and shall be a deferred submittal to the District.

Inspection Requests

Depending on the type of fire sprinkler system installed will determine how many inspections are required. Some of the most common inspections involved are:

- Underground pipe visual (Includes a pre-pour inspection of thrust blocks, a post pour inspection of thrust blocks, pipe depth, pipe size, tracer wire, fittings wrapped and greased, backflow, etc.).
- Beam and pipe visual.
- Hydrostatic Test at 200psi for a minimum 2 hours and pipe visual.
- Final inspection and flush.

The district will attempt to satisfy your requests for all inspections involving fire sprinkler systems. However, the volume of requests and availability of inspectors may vary, and the desired time frame may not be able to be met. Please e-mail scheduling@rsf-fire.org at least 48 hours in advance to schedule an inspection. Please include the Fire District's plan check number, project name, project address, type of inspection request, and contact information.