

**Moreno Valley Fire Department
Fire Prevention Bureau**

**Multi-Family (NFPA 13R)
Fire Sprinkler Systems**



Approved and Authorized By:

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Multi-Family Fire Sprinkler Systems

PURPOSE

This guideline has been prepared to assist those responsible for the design, installation, testing, and inspection of fire sprinkler systems to comply with 2022 NFPA 13R; 2022 California Fire Code, 2022 California Residential Code, 2022 California Building Code and the Moreno Valley Municipal Code.

SCOPE

This guideline applies to any new and existing fire sprinkler systems for low-rise residential multi-family dwelling buildings up to including four (4) stories in height and are within the allowable height and area limitations within Chapter 5 of the California Building Code. This guideline defines the requirements to obtain a permit for any new or existing fire sprinkler systems for plan submittal requirements, testing, and Fire Department notes required to be applied onto plan.

SUBMITTAL REQUIREMENTS

Submit your digital plans through the City of Moreno Valley's [SimpliCITY](#) portal. Plans shall be scaled, complete technical data sheets/manufacturer's specifications, and a copy of the manufacturers' design and installation requirements. Fees are based on the number of fire sprinkler heads installed. These plans shall contain the following information and items:

1. **Scope of work** for the project.
2. **Business/Contractor Information** shall be provided and include: job site name, address, owner's contact name, owner's phone number; submitting company's name, address, contact name and number.
3. **Plan Design Statement** shall state: These plans have been designed in accordance with NFPA 13R (2022 edition), 2022 California Fire Code, and 2022 California Building Code, 2022 California Residential Code, and Moreno Valley Municipal Code, and the manufacturers design and installation requirements.
4. **Contractors License and Certifications** shall be provided and include a current contractor's C-16 license and signature on the plans.
5. **Material Listings** shall be met per NFPA 13R and any other manufacturer literature requirements.
6. **Basic Working Plan Requirements** indicating the building dimensions, cross section views, the location of partitions and other pertinent information detailing proposed layout of residence.
7. **Site Plan** indicating proposed project's site layout and underground fire service main piping with hydraulic node points (referenced from hydraulic calculations) from fire flow test location to fire sprinkler system's point of connection. Worst case lot for each

plan type may also be used for master plan submittals.

8. **Floor Plan** detailed floor plan indicating fire sprinkler riser location, system mains, branch lines, fire sprinkler head locations, location of methods of restraint, changes of elevation, node point identification and most remote calculated area(s.) All closets and restrooms will need indicate square footage to determine if fire sprinkler coverage is necessary. Any ceiling pockets, ceiling fans, architectural features, and/or shadow spacing that may present coverage concerns will need to be disclosed. Heat sources shall be noted and be provided with proper clearance from fire sprinkler heads or intermediate sprinkler coverage with proper clearance in accordance with NFPA 13R.
9. **Fire Sprinkler Riser Detail** showing size and location of valves, gauges, couplings, swing check valve, and connections shall be provided on a side view detail. Riser shall be provided with a main drain that will permit flow tests of water supplies, connections, and be sized as follows: up to 2" riser (3/4" or larger), 2-1/2" (1-1/4" or larger), and 4" and larger (2" only). Applicable node identification from hydraulic calculations shall be provided for reference. A four (4) way sway brace shall be provided at the top of the riser in accordance with NFPA 13.
10. **System Mounted Fire Department Connection** (if applicable) shall be provided on riser detail. Connection to fire riser shall be provided above system check valve. Connection's inlet height shall be no less than 18" or more than 48" above grade and installed along an approved fire access road. FDC shall be installed within 20' to 100' from an approved fire hydrant. Connection(s) shall be provided and sized in accordance with NFPA 13R. Disregard if FDC is a separate from fire sprinkler system design.
11. **Required Valves** shall be shown on the plans. Valves required include main drain, inspector's test valve that will allow the testing of the system bell, auxiliary drain valve(s),
12. **Piping Support** details shall be provided that prevent movement of piping. Proposed method of listed attachment to structure shall be identified along with piping support's listed part numbers.
13. **Sway Bracing Details and Calculations** shall show on plans for lateral and longitudinal sway bracing. Details indicating sway bracing components, part numbers, minimum and maximum allowable angles. Details shall also include method of proposed sway bracings of attachment to the structure (through-bolt or all-thread.) shall be included on plans. Sway bracing calculations shall in accordance with Chapter 18 of NFPA 13 and shall indicate site's C_p value to determine sway brace loads with reliable source, maximum spacing between braces, maximum pipe length, and pipe schedule used installation.
14. **Water Supply Information** from applicable fire flow test used for system design indicating static, residual, and flow values on water purveyor's letter. All water supply testing and documents are to be no more than 6 months from time of submittal. No more than 90% of the available water supply shall be used for any fire sprinkler system's design.
15. **Equipment Legend** for each system component shall be identified and to be reflected on floor plan. Legend shall include all system sprinklers (new, relocated,

- and/or removed) hangers, end of line restraints, valves, connections, and seismic sway bracing.
16. **Hydraulic Calculation Plate** example shall be provided for each calculated area. Information shown on plate shall reflect information on hydraulic calculations.
 17. **Hydraulic Calculations** shall be prepared for each individual hydraulically calculated area. Each set of calculations shall include a summary sheet, graph sheet, water supply analysis, node analysis, and detailed worksheet. Per NFPA 13R, a four (4) head fire sprinkler remote area for a 30-minute duration.
 18. **Data Specification Sheets** indicating required listings in accordance with NFPA 13R shall be provided for all fire sprinkler heads, piping, fittings, hangers, sway bracing, valves, couplings, and pump assemblies shall be provided for review. Pertinent flow information to determine validity of hydraulic calculations shall be provided for applicable components to verify friction loss.

TESTING REQUIREMENT

1. **Overhead Rough/Piping Inspection** shall be conducted before the Concealment of any construction or piping and other required testing by Fire Prevention Bureau Staff. No materials shall be used that is incompatible with listings of CPVC piping installed. Any material that will contact the piping shall be approved by the piping manufacturer. This includes draft stop sealant, cutting oils, other wiring contacting the piping.
2. **Hydrostatic Testing** of Wet pipe fire sprinkler systems shall be tested at 200 psi or 50 psi above static operating pressure whichever is greater for a 2-hour duration. Loss of any pressure for hydraulic or pneumatic tests will result in a failed inspection.
3. **Fire Sprinkler Final** shall be subject to main drain testing and exercise of the inspector's test valve to verify actuation of system flow switch/water motor gong, and bell. At time of final inspection, all required fire sprinkler head trim/escutcheons shall be installed and all protective covers shall be removed.

FIRE DEPARTMENT INSPECTION AND TESTING NOTES

Fire Department Notes for Fire Sprinkler Systems are required to be added to plans verbatim.

1. **System Testing** shall be performed in accordance with NFPA 13R and Moreno Valley Fire Prevention Bureau Guideline requirements. Concealment of any construction or piping shall not be permitted until system has undergone approval of overhead rough piping and other required testing by Fire Prevention Bureau Staff.
2. **Spare Sprinkler Box** with appropriate number of heads and wrenches shall be provided at Final Inspection. There shall be no fewer than 6 heads for <300 sprinklers installed, 12 heads for 301-1000 sprinklers installed, and 24 heads for 1001 or more sprinklers installed. There shall be no less than at least 2 of each type of sprinkler installed in the system.
3. **Maintenance Access** shall be provided for all combustibile concealed spaces protected with fire sprinkler coverage to fulfill required inspection, testing, and

- maintenance in accordance with NFPA 25.
4. **Identification of Valves** shall be completed for all control, drain, test, and auxiliary valves with permanently marked weatherproof or rigid sign.
 5. **Electric Valve Supervision** shall be provided for all valves controlling water supply to sprinkler system by a listed fire alarm control unit to a UL listed central station. All valves required to be monitored will need to be tested before system's commissioning is approved.
 6. **Securing of Control Valves** for all water supplies to sprinkler systems shall be secured in the open position by approved means.
 7. **Connection to Underground Piping** shall be allowed once underground piping has been flushed, witnessed, and approved by Fire Prevention Bureau Staff.
 8. **"As Built" or Revised Plans** shall be submitted and reviewed by the Moreno Valley Fire Prevention Bureau prior to Final Inspection according to field inspection changes and Fire Inspector's discretion.
 9. **Owner's Information** shall be provided by installing contractor to building's owner at or before Final Inspection. A copy currently adopted edition of NFPA 25 and literature/instructions provided by manufacturer shall be provided to building owner.
 10. **Contractor's Materials and Test Certificate** shall be completed by the installing contractor before system's final inspection is requested.
 11. **California State Fire Marshal Tag** shall be provided on system riser with the date of system commissioning and indicate NEW on testing frequency selection.

For additional assistance please call Fire Prevention at (951) 413-3370 or Email us at FirePlanCheck@Moval.org

To submit plans please use the [SimpliCITY](#) portal.