

**Moreno Valley Fire Department
Fire Prevention Bureau**

**Single Family (NFPA 13D)
Fire Sprinkler Systems**



Approved and Authorized By:

Doug Bloom, Fire Marshal

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Residential 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 13D; 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 residential buildings classified and one and two-family dwellings. 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. **Residence/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 13D (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 13D 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 13D.
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 ½" main drain valve and assembly. Details on flow switch, bell, and inspector's test valve shall be provided if owner opted.
 10. **Piping Support** details shall be provided that prevent movement of piping. Proposed method of listed attachment to structure shall be identified along with listed part numbers.
 11. **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. Where a well, pump, tank or combination thereof is the sources of supply for the proposed system, please refer to the California Fire Code Chapter 80 amendments of NFPA 13D.
 12. **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, valves, and connections.
 13. **Fire Sprinkler Coverage** will be required in all restrooms over 55 square feet, closets over 24 square feet, closets under stairs over 400 cubic feet, all rooms housing fuel fired equipment. Fuel fire equipment above habitable space shall be required only for systems designed in accordance with the California Residential Code.
 14. **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 13D, a two (2) head fire sprinkler remote area for a 10-minute duration with a 5 GPM domestic allowance is required unless any criteria in section NFPA 13D:10.2.1 applies. If so, please contact Moreno Valley Fire Prevention Bureau Staff for further consultation.
 15. **Data Specification Sheets** indicating required listings in accordance with NFPA 13 shall be provided for all fire sprinkler heads, piping, fittings, hangers, valves, couplings, and pump assemblies shall be provided for review. Water meter data specifications indicating flow characteristics shall be provided to determine friction loss on hydraulic calculations. Pertinent flow information to determine validity of hydraulic calculations shall be provided for applicable components.

TESTING REQUIREMENTS

1. **Overhead Rough/Hydro** shall be performed prior to the concealment of any construction or piping. The system shall be pressurized to not less than city main pressure for 2 hours prior to inspection. No materials shall be used that is incompatible with the listings of the CPVC piping that has been 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. Leakage or loss of any pressure for hydraulic tests will result in a failed inspection.
2. **Sprinkler Final** shall be subject to main drain testing and exercise of the inspector's test valve (if owner opted) to verify actuation of the system flow switch and bell. At time of final inspection, all required fire sprinkler head trim/escutcheons shall be installed and all plastic protective covers shall be removed. Water meters shall be installed and match the approved drawings.

FIRE DEPARTMENT INSPECTION AND TESTING NOTES

Fire Department Notes are required to be added to the plans verbatim.

1. **System Testing** shall be performed in accordance with NFPA 13D 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 inspection and other required testing by Fire Prevention Bureau Staff.
2. **Contractor Qualifications** – These plans have been designed, calculated, and systems shall be installed in accordance with NFPA 13D or the California Residential Code by persons knowledgeable and trained in these systems.
3. **Piping Incompatible Materials** – 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.
4. **Identification of Valves** shall be completed for all control, drain, test, and auxiliary valves with permanently marked weatherproof or rigid sign.
5. **Control Valves** – All valves controlling water supply to sprinkler system shall also serve domestic water supply or be removed.
6. **Warning Sign** shall be provided on or near system riser stating: “WARNING THE WATER SYSTEM FOR THIS HOME SUPPLIES FIRE SPRINKLERS THAT REQUIRE CERTAIN FLOWS AND PRESSURES TO FIGHT FIRE – DEVICES THAT RESTRICT FLOW OR DECREASE THE PRESSURE OR AUTOMATICALLY SHUT OFF THE WATER TO THE FIRE SPRINKLER SYSTEM, SUCH AS WATER SOFTENERS, FILTRATION SYSTEMS, AND AUTOMATIC SHUT OFF 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”
7. **Connection to Underground Piping** shall be allowed once underground piping has been flushed. Flush shall be witnessed by C-16 contractor on record.
8. **Owner Documents and Instructions** shall be provided to owner of residence from the installing C-16 contractor on record detailing system inspection, testing, and maintenance.
9. **“As Built” or Revised Plans** shall be submitted and reviewed by the Moreno Valle Fire Prevention Bureau prior to Final Inspection according to field inspection changes and Fire Inspector’s discretion.

**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.