



*Fire Marshal's Office*  
*San Mateo County Fire*  
**CAL FIRE**

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Date: May 17, 2008

Revised: March 28, 2017

Number: *CFS-003*

Title: *Fire Sprinklers*

Approved: *Mark Mondragon*

**SCOPE:**

**NEW STRUCTURES:** An automatic sprinkler system shall be installed and maintained in all new structures or occupancies which require a building permit issued by San Mateo County, regardless of type of construction, use or size.

Any occupancy not specifically mentioned shall be included in the group, which it most nearly resembles, based on the proposed life and fire hazard.

**EXCEPTIONS:**

1. Agricultural buildings as defined in Appendix, Chapter 3, Division 11 of the California Building Code and located within an agricultural zoned area, as defined in the San Mateo County Planning Code. Office uses within agricultural buildings shall not exceed ten percent (10%) of the total floor area of the building unless such buildings are provided with an automatic fire sprinkler system throughout. Agricultural buildings shall include greenhouses.
2. Non-residential structures less than 1,000 sq. ft. in area.
3. Mausoleums of Type I construction, as defined by the California Building Code, which do not contain offices, chapels, stores, or other places of public occupancy for purposes other than parking.
4. Open-air parking garages of Type I construction, as defined by the California Building Code, which do not contain offices, chapels, stores, or other places of public occupancy for purposes other than parking and are detached from other buildings.
5. Car wash structures where no offices or waiting rooms are attached.

**EXISTING STRUCTURES**

1. An automatic sprinkler system shall be provided throughout an existing structure when a building permit is issued to allow additions, alterations, or repairs, within any 12-month period, to be made, as defined by San Mateo Building Code.
2. Additions, alterations or remodel to an existing dwelling previously equipped with automatic sprinklers shall require the submittal of three sets of sprinkler plans and

hydraulic calculations to the Planning and Building Division of San Mateo County for review by San Mateo County Fire and permit issuance. All components of the existing system shall be submitted for review. Such additions or alterations may require modifications, upgrades or additions to the existing sprinkler system. A “five-year” inspection by a fire sprinkler contractor may be required.

3. The Fire Marshal may require the installation of fire sprinklers when there is a change in the character or use of any building that increases or may cause to increase the hazard of fire or threat to life or safety.
4. The installation of an automatic fire suppression system may be required when any alteration, addition, or change in the use of a building or portion thereof changes access to property so as to impede the fire department’s ability to control a fire.
5. A licensed civil engineer, hydraulic engineer, fire protection engineer or a California licensed C-16 contractor shall design automatic fire sprinkler systems. NOTE: C-16 contractors must install the system they design.

**FIRE SPRINKLER SPECIAL PROVISIONS:**

All automatic fire sprinkler installations within the jurisdictional boundaries of the San Mateo County Fire Department, including non-required installations, shall comply with the most current adopted edition of National Fire Protection Association (NFPA) Standard 13, 13-D, 13-R and the local jurisdictional requirements as listed below.

1. A licensed civil engineer, hydraulic engineer, fire protection engineer or a California licensed C-16 contractor shall design automatic fire sprinkler systems. NOTE: C-16 contractors must install the system they design.
2. Plans for the installation, extension or modification of an automatic sprinkler system shall be submitted to the Planning and Building Division of San Mateo County for review and approval by San Mateo County Fire.
3. The Fire Marshal may require the installation of an automatic fire system when there is a change in the character or use of any building, which increases or may cause to increase the hazard of fire or threat to life or safety.
4. The Fire Marshal may require the installation of an automatic fire system when any alteration or change in the use of a building or portion thereof changes access to property so as to impede the fire department’s ability to control a fire.
5. Structures having or requiring automatic fire sprinklers with attached garages or attached carports shall have automatic fire sprinklers installed throughout the garage or carport area.
6. The installation of a NFPA 13D automatic fire sprinkler system is required for a detached, non-habitable garage, over 1,000 sq. ft., built for a single-family dwelling that is two stories in height or that has an attached studio or workshop.

7. All Group R, Division 3 Occupancies shall have an exterior alarm bell (6" minimum) for water flow. The alarm device shall be in addition to required interior smoke detectors. The alarm shall be located on the exterior wall of the master bedroom and be audible throughout the structure. The size and design of the structure may require more than one alarm. The alarm circuit shall be 110 volt. A Ground Fault Circuit Interrupter (GFCI), or an Arc-Fault Circuit Interrupter shall not protect the alarm circuit (AFCI).
8. Automatic fire sprinklers shall be installed in breezeways attaching a garage to a sprinklered structure.
9. An automatic fire sprinkler system shall protect bathrooms with combustible vanities or wall finishes regardless of size.
10. An automatic fire sprinkler system shall protect any usable space below or over a stairway.
11. In basement, attic or other areas of storage where CPVC pipe is used, the CPVC pipe shall be protected using an approved product by the pipe manufacturer, or install with metallic pipe. In areas where there is no storage the CPVC pipe needs to be protected by insulation.
12. Areas containing any appliances or heat producing equipment shall be provided with automatic fire sprinkler protection. Sprinkler head(s) shall be positioned to provide full coverage of the area in which the appliances are installed.
13. Intermediate rated sprinkler heads (175 to 225 degree F) are required at all attic access locations and in water heater closets.
14. An inspector's test shall be located outside the sprinklered building and be supplied from the most remote location of the system. A permanent "Inspector's Test" sign shall identify the test valve.
15. A sprinkler system control valve shall be located on the sprinkler riser, below the domestic tap. When closed, both the sprinkler system and the domestic supply shall be shutoff. There shall not be a separate shutoff for the sprinkler system. The valve should be secured in an open position (e.g., zip tie).
16. A UL approved pressure gauge, with a 300-psi reading, shall be installed on the riser above a rubber-seated check valve. An optional gauge may be installed below the check valve.

18. All aboveground fire sprinkler (or fire hydrant) water supply pipe shall be metallic.

**EXCEPTION:**

- a) The supply pipe to fill required water storage tanks must be listed pipe for applicable use.
  - b) PVC pipe may be used if listed for UV exposure or is wrapped with tape at least 10 mil thickness and is not located so as to be subjected to environmental damage (e.g., falling tree limbs, vehicle traffic or fire).
19. Underground Pipe: The fire sprinkler supply from the water source (e.g., water tank or municipal water main) to the pump, pressure tanks, or water meter may be metallic or PVC pipe. If galvanized steel is used, the pipe shall be double wrapped with 10-mil PVC pipe wrap tape where ground contact occurs.
20. Pressure Test – Underground: All underground fire sprinkler water supply pipe shall be pressure tested by the installer to not less than 50 psi above the design working pressure for two (2) hours. The pipe shall be tested exposed in a ditch not less than 18” in depth. The pressure test shall require verification by County Fire. The installing contractor shall complete the ***Contractor’s Material and Test Certificate for Underground Piping*** and present a signed and completed copy to County Fire prior to the rough/overhead inspection.
21. Underground Flush: The underground fire sprinkler supply pipe shall be flushed by the installing contractor with water at a full flow until the water runs clear, thus ensuring the line is free of contamination before the underground pipe is connected to the sprinkler riser. If the underground piping is not to be connected to the riser immediately, the underground pipe shall be capped to prevent contamination. The test shall require verification by County Fire. The installing contractor shall complete the ***Contractor’s Material and Test Certificate for Underground Piping*** and present a copy to County Fire prior to the rough/overhead inspection.
22. Pressure Test – Aboveground (Rough/Hydraulic): The installing contractor shall complete the ***“Contractor’s Material and Test Certificate for Aboveground Piping”*** and provide a signed copy to the San Mateo County Fire Department at the time of inspection.
23. “As-built” sprinkler plans are required when field installation variations are necessary. “As-built” plans shall be provided to San Mateo County Fire for review prior to the rough inspection.
24. A spare head box shall contain a head wrench and three of each type of sprinkler heads used. If only one head of a type is used, only one spare of that type is required. The spare head box shall be located in the vicinity of the sprinkler riser and contain the name, address and phone number of the fire sprinkler contractor.

**REFERENCE:** CA Fire Code Section 101.3, 1003; SMCO Building Ordinance Section 9135; NFPA 13, 13-D, 13-R.