



# Sacramento Metropolitan Fire District

Community Risk Reduction Division

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TODD HARMS  
Fire Chief

SACRAMENTO METROPOLITAN FIRE DISTRICT			
FIRE PREVENTION STANDARD			
STANDARD TITLE:	Installation of Fire Alarm Systems		
STANDARD NUMBER:	2	EFFECTIVE DATE:	05/06/10
		REVISION DATE:	07/31/2020

## SCOPE

This standard is for the design, installation and maintenance of fire alarm systems in commercial buildings and is pursuant to the 2019 California Fire Code, Local Ordinance and the 2016 edition of NFPA 72.

This standard shall apply to all new or modified fire alarm systems.

## DEFINITIONS

**Change of Occupancy** - a change in the use of a building or a portion of a building that results in the following (CFC 202):

1. A change of occupancy classification
2. A change from one group to another group within an occupancy classification.
3. A change in use within a group for which there is a change in the application of this code.

**Common Areas** – in addition to the areas listed in CFC section 907.5.2.3.1, common areas shall include shared, private offices (i.e. 2 or more desks) and private offices with a meeting or conference type seating arrangement.

**Building Fire Alarm System** – a fire alarm system located at the protected premise which utilizes manual or automatic initiating devices to activate alarm notification appliances throughout the building for the purpose of alerting occupants of the need to evacuate, summon aid and/or control other fire safety functions within the building.

**Sprinkler System Supervision & Alarms (i.e. water-flow and tamper)** – a Dedicated Function Fire Alarm system located at the protected premise installed specifically to monitor sprinkler water flow alarm, valve supervision and general trouble conditions where a Building Fire Alarm System is not required. (CFC 903.4)

1. Sprinkler System Supervision & Alarms (i.e. water flow and tamper) shall include the following:

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- a. Smoke detector located above the panel, installed in accordance with NFPA 72. (CFC 907.4.1)
- b. An exterior horn/strobe connected to the water flow switch and located at the fire riser. (CFC 903.4.2)
- c. A manual pull station in a normally occupied location. In multi-tenant buildings, the manual pull station shall be in the tenant space nearest the fire sprinkler riser. (CFC 907.2)
- d. An audio/visual device in a normally occupied location. In multi-tenant buildings, the audio/visual device shall be in the tenant space nearest the fire sprinkler riser. (CFC 907.5.2)
- e. Smoke detector(s) for HVAC shutdown. (CFC 907.3.1)
- f. Devices in addition to those listed above shall be installed to provide “selective” or “total coverage” in accordance with NFPA 72 and system shall be certified by Underwriter’s Laboratory (UL).

**SPECIFICATIONS**

1. All fire alarm plans shall include a furniture layout. An occupant load computed in accordance with CBC chapter 10 will be utilized in determining common areas where a furniture layout has not been provided. (NFPA 7.2.1)
2. All fire alarm plans, calculations and installation shall be completed by a fire protection engineer, electrical engineer, C-10 contractor licensed by the State of California or a minimum NICET II certification. (NFPA 72 10.5)
3. Fire alarm systems shall not be connected to a security system or any system other than that for the detection of fire and smoke. (CFC 907.1.5)

*Exception:* Combination systems (i.e. burglar and fire) may be permitted if the system is UL certified and the building is single tenant use.

4. All new buildings, buildings undergoing modifications, and/or changes of occupancy shall be provided with a fire alarm system in accordance with CFC 907.2 throughout the entire building. (CFC 907.1.4)
5. Multi-tenant buildings, served by a single fire sprinkler system with multiple fire alarm panels, shall provide one main fire alarm panel to which all panels report and through which all signals are transmitted to the Central Station. All panels shall be resettable. (CFC 907.2)

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6. A zone and building map, 24 hour contact information and panel silence and reset instructions shall be clearly provided at panel location. (CFC 509.1)
7. Alarms shall annunciate and transmit to the central station by building, zone, location, and device in plain English. (NFPA 72, 10.17)
8. Emergency voice alarm message content shall be as follows (NFPA 72, 24.4):

“Attention, may I have your attention please. An emergency has been reported in the building. Please walk to the nearest stairwell or exit and evacuate the building. Do not use the elevator. I repeat, please walk to the nearest stairwell or exit and evacuate the building. Do not use the elevator.”

Sequence shall repeat 3 times followed by the temporal code only, continuously. Variations to the above may be permitted upon approval by the Fire District. If emergency voice alarm messages are desired in additional languages, the message content and translation shall be provided.

9. All notification circuits shall be designed with a safety margin such that the maximum voltage drop does not exceed 10%. (CFC 907.2)
10. Circuits for R-2 occupancies shall be sized to accommodate future devices. A 20% additional load, or other approved method, shall be included for each notification circuit that may support visual notification. Both factors shall be included in the voltage drop calculations. Visual appliance back boxes shall be installed at mounting heights for visual appliances. (CFC 907.5.2.3.3)
11. Where non-required/voluntary detection or notification devices are installed or exist, installation and spacing shall be in accordance with NFPA 72 throughout the building or entire tenant space, in multi-tenant buildings.
12. Wireless transmission shall not be utilized between life safety initiating devices and fire alarm panel (i.e. smoke detector, heat detector, manual pull station or water flow switch). (NFPA 72 17.4.6)

**REQUIRED INSTALLATIONS**

1. R-2 Occupancies with Sprinkler System Supervision & Alarms (i.e. water flow and tamper) shall be provided with the following (CFC 903.4):
  - a. Smoke detector above the fire alarm panel installed in accordance with the manufacturer’s specifications. (CFC 907.4.1)

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- b. Single manual pull station located within 5-feet of the exit at the Clubhouse or manager's unit. (CFC 907.2)
  - c. Smoke detectors located in accessible units which cause the operation of a visible signal upon initiation. (CFC 907.5.2.3.4)
2. An audio/visual device located in a normally occupied portion of the clubhouse. (CFC 907.5.2)
3. Existing systems
- a. Existing fire alarm control panels requiring upgrade, due to component failure and/or non-replaceable parts, shall be compatible with existing equipment and shall maintain compliance at the time of original installation. (CFC 907.9)