Sacramento Metropolitan Fire District

Community Risk Reduction Division **www.metrofire.ca.gov**

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SACRAMENTO METROPOLITAN FIRE DISTRICT					
FIRE PREVENTION STANDARD					
STANDARD TITLE:	**Installation of Fire Alarm Systems**				
STANDARD NUMBER:	2	EFFECTIVE DATE:	05/06/10	REVISION DATE:	02/05/26

SCOPE

This standard is for the design, installation and maintenance of fire alarm systems in commercial buildings and is pursuant to the 2025 California Fire Code, Local Ordinance and the 2025 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.

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, general trouble conditions and elevator recall where a Building Fire Alarm System is not required. (CFC 903.4)

1. Dedicated Function Fire Alarm System for fire sprinkler system monitoring shall include the following:

   a. A smoke detector installed above control unit (NFPA 72 10.4.5)

   b. An exterior horn/strobe connected to the water flow switch and located at the fire riser. (CFC 903.4.3)

i. Existing fire sprinkler bells are only required to be updated to an exterior horn/strobe when not in working condition.

Additional exterior horn/strobes may be required where sprinkler risers are in multiple locations throughout a building.

c. Valve supervision of any control valve installed between the water supply and fire sprinklers. (CFC 903.3.8.4 as amended by the Sacramento County Code)

d. The carbon monoxide detectors/alarms are not required to be supervised by the sprinkler system monitoring. (CFC 915.3.3)

"868" Fire Alarm System – existing fire alarm system required by Sacramento County Code 868 between 1979 and 1997. This type of fire alarm system was required to be installed in all new buildings exceeding 2,500 sqft in which the Uniform Building Code did not require a fire sprinkler system. Also, this was required for alterations or repairs of more than 10% of the floor area of the existing building exceeding 2,500 sqft.

"868" fire alarm system includes the following:

a. Fire alarm control unit;

b. Initiating devices consisting on heat detectors installed throughout the building, including the concealed space above the ceiling;

c. One horn/strobe and one pull station installed in a normally occupied space. (This requirement was added at tenant improvement modifications between 2005 and 2024 to mimic the Sprinkler System Supervision & Alarm systems;

d. Supervised by a listed central station.

All existing "868 Fire Alarm Systems" shall be maintained for the life of the construction.

New "868 Fire Alarm Systems" are not permitted.

Levels of Alterations to a Building:

a. **Level 1** – alterations that include the removal and replacement of the covering of existing materials, elements or fixtures using new materials, elements or fixtures that serve the same purpose.

b. **Level 2** – alterations that include the addition or elimination of any door or window, the reconfiguration or extension of any systems, or the installation of any additional equipment, and shall apply where the work area is equal to or less than 50 percent of the building area.

- The movement or addition of nonfixed and movable fixtures, cases, racks, counters and partitions not over 5'9" in height shall not be considered a level 2 alteration

c. **Level 3** – alterations where the work area exceeds 50 percent of the building area.

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 72; 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. Multi-tenant buildings, served by a single fire sprinkler system with multiple fire alarm control units, shall provide one main fire alarm control unit to which all fire alarm control units report and through which all signals are transmitted to the Central Station. All control units shall be resettable. (CFC 907.2)

5. 24 hour contact information and control unit silence and reset instructions shall be clearly provided at panel location. (CFC 509.1 & 907.7.3)
   i. If a system is not addressable, a zone list shall be provided at the fire alarm control unit.
   ii. Depending on building layout and device/valve location, additional signage/placarding may be required.

6. Alarms shall annunciate and transmit to the central station by building, zone, location, and device in plain English. (NFPA 72; 10.18)

7. 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.

8. 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)

9. Wireless transmission may be utilized between life safety initiating devices and fire alarm control unit when compliant with NFPA 72 (i.e. smoke detector, heat detector, manual pull station, or water flow switch). (NFPA 72; 23.16)

10. Nonrequired (Voluntary) fire alarm systems shall be installed to provide “selective” or “total coverage” in accordance with NFPA 72 and the system shall be certified by Underwriter’s Laboratory (UL). A letter from the building owner stating the objectives of the nonrequired system shall be included in the submittal package to document system goals. (NFPA 72; 23.3.4)
    i. Selective coverage does not pertain to occupant notification (NFPA 72; 18.4.1.5.2)
11. Existing fire alarm control units 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)
12. Final inspection for the fire alarm system and sprinkler monitoring system will require a 24 hour battery test in the following situations (CFC 109.2):
    a. New fire alarm or sprinkler monitoring systems.
    b. Existing fire alarm system with tenant improvement that results in adding notification appliances. In case the notification appliances affect only a part of the system (multiple power supplies) only the power supply that has added notification appliances will need to be disconnected from power.
    c. Changing the cellular communication or upgrading from landlines to cellular communicator will require a 24 hour battery test to the dialer (if powered separately) or the control unit (if the dialer receives the power from the control unit).
13. At a change of occupancy, the fire alarm system for the new occupancy (building or suite) shall comply with the requirements of the CFC Section 907 (fire alarm system required for the occupancy or the building) and CBC Section 508 (separated or non-separated occupancies).
14. The fire alarm system shall be updated to the most current code requirements as following:

a. Level 1 alteration – the fire alarm shall be maintained at the same level of protection that was provided before the alteration.

b. Level 2 alteration – the fire alarm system shall be updated throughout the floor on which the work area is located.

    i. For single story buildings and no occupancy change, the fire alarm system shall be updated throughout the suite in which the work area is located as long as the suite is separated from the rest of the building in accordance with Section 508.4 from the CBC.

c. Level 3 alteration – the fire alarm system shall be updated for the entire building.