



Fairfield Fire Department
Fire Prevention Division
1200 Kentucky Street, Fairfield, CA 94533
Phone (707) 428.7375

COMMERCIAL FIRE ALARM SYSTEMS
STD# 09-24 Effective Date: 01/01/2024

SCOPE

This standard is for the design, installation, and maintenance of fire alarm systems in commercial buildings and is pursuant to the 2022 California Fire Code, Local Ordinances and the 2022 edition of NFPA 72. This standard shall apply to all new or modified alarm systems.

PLANS

All plans submitted for permit shall include all items indicated in 2022 NFPA 72 Section 7.2 and the Fairfield Fire Prevention Bureau Standard 20-24. Plans shall include but not limited to the following.

1. Floor plans shall be drawn to 1/8" =1' scale and noted on the plan.
2. Required system type (locally required, building/fire code required, voluntary)
3. Reflective ceiling plan with ceiling height, room number, description of use for each room or area.
4. Sequence of operation matrix.
5. Equipment list showing quantity, make, model and CSFM listing number and plan symbol of each device.
6. Cross sectional detail of the building where devices are mounted is required, including ceiling construction, roof deck construction, beams, obstructions, or other barriers or finishes which will affect the design criteria described in NFPA 72.
7. Single line riser diagram and point-to-point wiring diagram.
8. All additional breakers for power boosters and/or additional power supplies shall be noted and labeled.
9. Stand by battery calculations for each control panel, sub panel, power booster, central station transmitter, power supply. Battery calculations shall include a 10% safety factor.
10. Secondary power supply and voltage drop calculations shall be provided.
11. Location and mounting height of fire alarm control panel, manual fire alarm



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boxes, audible and/or visual notification devices, document box, etc.

LICENSING REQUIREMENTS

All fire alarm panels, 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 Fire Alarm Designer Certification.

SPECIFICATIONS

1. In buildings with fire control rooms, FACU shall be mounted in the fire control room. Where the building has a fire pump room, it shall be considered the fire control room. No other equipment such as HVAC units, water heaters, and/or domestic water supplies shall be allowed within the fire control room.
2. At each new installation, a water flow bell shall be installed outside of the fire control room. It shall only sound upon the water flow switch being activated. In addition, a STROBE shall be installed outside of the fire control room. It shall activate whenever any alarm condition is present at the FACP. A single approved horn/strobe device shall be provided in the interior of the building in a normally occupied location within each space/dwelling unit and each floor level unless full notification is required.
3. A key for the FACP and pull station(s) shall be provided in the KNOX Box.
4. Fire alarm systems shall not be connected to a security system or another system other than that for the detection of fire and smoke. Combination burglar/fire alarm systems are not allowed.
5. Multi-tenant buildings, with a single address, served by a single fire sprinkler system, shall have a single fire alarm panel. All tenant spaces shall be provided with a notification horn-strobe and all other alarm equipment as required by CFC and NFPA 72.
6. Buildings in which 3 or more initiating devices (as defined by NFPA 72) are proposed to be installed, shall be required to have a minimum of 4 distinct zones.
7. Buildings in which 4 or more initiating devices (as defined by NFPA 72) are proposed



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to be installed, shall be required to have a fully addressable FACU installed.

8. A zone and building map, 24-hour contact information and panel silence and reset instructions shall be clearly provided at the panel location.
9. Alarms shall annunciate and transmit to the central station by building, zone, location, and device in plain English.
10. All notification circuits shall be designed with a safety margin such that the maximum voltage drop does not exceed 10%.
11. 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.
12. Non-required (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’ Laboratory (UL). A letter from the building owner stating the objectives of the non-required system shall be included in the submittal package to document system goals.
13. Existing fire alarm control panels requiring replacement, 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.

UL CERTIFICATION REQUIRED

1. All fire alarm, automatic sprinkler systems and hazardous materials emergency alarms shall be monitored by a listed central station in the current edition of the Underwriter’s Laboratories Fire Protection Equipment Directory under the category Central Station (UUFX). The listing shall indicate the listed fire alarm company provides service to the Fairfield area.
2. The required UUFX certification shall be site specific.



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SYSTEM ACCEPTANCE TEST

1. Prior to requesting a final system inspection and acceptance test, the installer shall perform a satisfactory 100% pre-test of the system. The pre-test report shall be provided before scheduling inspections. The entire system shall be installed to completion. A functional test of 10% of all existing components shall be tested for amended systems.
2. Approved plans, supporting documents and a copy of the completed permit card shall be kept in the in the fire control room. A Record of Completion form shall be maintained by the owner and a copy in the fire control room.
3. A test of the standby power shall be conducted including all supplemental power supplies.
4. A 24-hour battery test, if applicable, shall be performed. This required test shall include all additional power supplies and boosters. Power shut-off shall be completed 24-hours prior to inspection. Shut-off and restoration of all systems shall be verified prior to final approval.
5. All circuit breakers shall be tagged and labeled, including breakers for additional power supplies. Each circuit breaker shall be locked in the "on" position.
6. Magnehelic gauge, decibel reader or any other equipment required to complete a system acceptance test shall be provided by the installing contractor to show compliance with this standard for NFPA 72.