



Corona Fire Department

Fire Alarm and Signaling Systems Guideline per 2016 California Fire Code

PURPOSE

The intent of this guideline is to provide design requirements for plan review and installation of fire alarm, signaling and monitoring systems. Fire alarm and signaling systems shall meet the minimum requirements specified in the 2016 California Fire Code, 2016 California Building Code and the 2016 edition of NFPA 72.

SCOPE

This guideline applies to all new installations and alterations to existing fire alarm, signaling and monitoring systems being installed in the City of Corona.

REQUIREMENTS

A. PLANS

1. Submit a minimum of THREE (3) sets of legible, scaled plans with ONE set of current, complete and highlighted technical data sheets. Plans shall contain the following information:
 - a. Scope of work for the project, including number and type of devices added, relocated, replaced or removed. Indicate the type of system provided (i.e., monitoring, fire alarm system, etc.).
 - b. Complete address of the project.
 - c. Name and phone number of the project coordinator, facility owner, and system designer. Evidence of the designer's qualifications may be requested. (NFPA 72 10.5.1)
 - d. Provide a copy of the installing contractor's C-10 License or the C-10 License number and expiration date. (NFPA 72 10.5.1.2)
 - e. The occupancy group classification for the building or area shall be shown on the plans.
 - f. Include the City of Corona Fire Alarm Notes on the plans.
2. The plans shall provide a complete floor plan showing the location of all initiating and signaling devices, control equipment, annunciators, power supplies and any egress-control devices. (CFC 907.1.2)
3. Identify all initiating zones and notification circuits. Zone addresses shall be shown adjacent to each device. (CFC 907.1.2, NFPA 72 10.8)
4. Provide the ceiling configuration, surface, and height. (NFPA 72 17.7.3.1.2)
5. Identify zone assignments. This is also required for addressable systems. Any existing or future suppression system(s) shall be shown on separate zone(s). (CFC 907.7.3 and NFPA 72 23.8.5)
6. Provide a list or table of the manufacturer, model numbers, and listing information for all equipment, devices, and materials. Include the CSFM listing numbers and the quantities of each component. (CFC 907.1.2)
7. Provide the sequence of operations showing the required action for the actuation of any fire and life safety device or ancillary device connected to the fire alarm system (i.e. special egress control, smoke control, leak detection, and HVAC duct detection). See NFPA 72 Figure A.14.6.2.4 for a typical sequence of operations layout. (CFC 907.6.3)

8. Provide the documentation cabinet required by NFPA 72, 7.7. Cabinet shall contain the original approved plans, any as-built plans, and records of tests and inspections required in accordance with NFPA 72, 7.6 and 14.2.10. Records shall be made available to the Authority having Jurisdiction per NFPA 72, 7.7.1.2.
9. If duct detectors are required by code, provide cut sheets demonstrating the detectors are listed for the complete range of air velocities, temperature, and humidity expected at the detector present in the duct. Duct smoke detectors shall be connected to the building's fire alarm control unit when a fire alarm system is installed. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location and shall perform the intended fire safety function in accordance with this code and the California Mechanical Code. Duct smoke detectors shall not be used as a substitute for required open area detection (CFC 907.3.1).
9. A remote L.E.D. shall be provided in the ceiling at the detector location, unless the specific detector alarm or supervisory signal is indicated at the control unit. (NFPA 72 17.4.7.2 and NFPA 72 17.4.7.3)
10. All HVLS (High Volume, Low Speed) fans shall be interlocked to shut down immediately upon receiving a waterflow signal from the alarm system in accordance with the requirements of NFPA 13 and NFPA 72 17.7.6.3.
11. Specify the manually actuated alarm –initiating device mounting heights and locations. (NFPA 72, 17.14.5)
12. Provide voltage drop calculations on the plans. The voltage drop shall not exceed the minimum device specifications needed to meet their listing. Voltage drop calculations shall be provided for the most demanding circuit(s) in the area of work. (NFPA 72, 7.4.10)
13. Provide standby battery calculations on the plans. The calculations shall include both standby and alarm conditions. Calculations are to be performed for 100% of the load. Any security device load shall be included. (NFPA 72 7.4.10, CFC 907.1.2)
14. Storage batteries shall be permanently marked with the month and year of manufacture, using the month/year format. The marking shall be permitted to be applied by either the battery manufacturer or the installer. (NFPA 72, 10.6.10.6.1)
15. Provide a means of monitoring the batteries and charger integrity so that a battery charger failure is detected. Failure if a battery charger will result in a trouble signal in accordance with NFPA 72, Section 10.12. (NFPA 72 10.6.10.6)
16. When auxiliary power and/or control panels are being added to an existing system, detailed “point to point” connection between this equipment and the main control panel, including relays and modules, shall be on the plans. Only circuit zones affected by this work need to be identified on the drawings.
17. All card reader and egress-control devices shall be indicated on the fire alarm plans. The code may impose additional requirements such as smoke detection throughout. (CBC 1010.1.9.8 and 1010.1.9.9, CFC 907.3.2, & NFPA 72 21.9)
18. The circuit disconnect providing power to the fire alarm unit shall only be accessible to authorized personnel, and shall be identified as “FIRE ALARM CIRCUIT”. (NFPA 72, 10.6.5.2) A mechanical lock out shall be provided for the circuit (NFPA 72 10.6.5.3).
19. The UL listed Central Station Monitoring Facility shall be shown on the plans.

B. TENANT IMPROVEMENT PLANS:

1. When tenant improvements create a new or altered common use area within a building equipped with a fire alarm system, the area of remodel shall be provided with visual warning devices installed in accordance with NFPA 72 and CFC 907.5.2.3.1.

C. WATERFLOW/MONITORING SYSTEMS:

1. The Dedicated Function Fire Control Unit shall be placed in an approved location, typically the front lobby or within an electrical, mechanical, service, or riser room which can be accessed from the exterior and is identified by a sign indicating "Fire Alarm Control Unit". CFC 907.1.2(5), and NFPA 72, 10.17.3.2.
2. An annunciator panel shall be required if the FACU does not provide specific alarm conditions on site. CFC 907.6.3.1

D. DATA SHEETS

1. A highlighted set of data sheets (style, type, model, amps, volts, etc.) for all fire alarm components shall be provided for review. (CFC 907.1.2)
2. Provide ONE copy of current California State Fire Marshal (CSFM) listing sheets for all devices and equipment to be installed. (CFC 907.1.2)

E. SPECIFIC PLAN REQUIREMENTS

Place the following notes on the plans, verbatim:

FIRE ALARM NOTES

1. The applicable codes and standards are the 2016 California Fire Code (CFC), 2016 California Building Code (CBC) and the 2016 edition of NFPA 72.
2. Fire alarm inspections are required for this project. Please schedule all field inspections at least 48 hours in advance. Inspections canceled without 24 hours notice shall remit a re-inspection fee.
3. The inspection, testing, and maintenance of systems, their initiating devices, notification appliances and equipment required to shut down, shall comply with the requirements of NFPA 72, 14.6 and conform to the manufacturer's specifications.
4. Upon completion, **a copy of "as built" drawings and written operation and maintenance instructions shall be provided to the owner/occupant, and the Fire Department. The contractor shall make an appointment with the field inspector to approve any "as built" plans. (NFPA 72 7.5.5)**
5. The 24-hour emergency response phone number shall be permanently posted adjacent to the control panel.
6. The installing contractor shall provide a Record of Completion to the inspector and to the business owner following completion of alarm testing. CFC 907.7.2
7. Through penetration fire stopping for all fire walls, floor/ceilings, and assemblies shall have an "F" or "T" rating per the CBC and nationally recognized standards. Installation of fire stopping shall comply with approved methods.
8. The circuit disconnect breaker providing power to the fire alarm unit shall only be accessible to authorized personnel, and shall be identified as "FIRE ALARM CIRCUIT". (NFPA 72 10.6.5.2)
9. All audible alarm notification signals shall be a three pulse temporal pattern. CFC 907.5.2.1.3
10. Audible alarm sound level shall be the minimum specified by CFC 907.5.2.1.
11. When more than two visual notification appliances are located within the same room or area, they shall be synchronized. NFPA 72: 18.5.5.4.2
12. All fire sprinkler systems shall be monitored except those noted in CFC 903.4.
13. Record of completion for all fire alarm tenant improvements and new construction, shall be required at the time of final inspection, per NFPA 72.