

Fire Alarm System Submittal Requirements

NFPA 72, 2019 edition

780 CMR 907.1.2 Fire Alarm Shop Drawings. Shop drawings for fire alarm systems shall be prepared in accordance with Section 901.2.2 and NFPA 72 and submitted for review and approval prior to system installation.

7.2 Minimum Required Documentation. (SIG-FUN)

7.2.1 Where documentation is required by the authority having jurisdiction, the following list shall represent the minimum documentation required for new systems and additions or alterations to existing systems:

1. Written narrative providing intent and system description
2. Riser diagram
3. Floor plan layout showing locations of all devices, control equipment, and supervising station and shared communications equipment with each sheet showing the following:
 - a. Point of compass (north arrow)
 - b. A graphic representation of the scale used
 - c. Room use identification
 - d. Building features that will affect the placement of initiating devices and notification appliances
4. Sequence of operation in either an input/output matrix or narrative form
5. Equipment technical data sheets
6. Manufacturers' published instructions, including operation and maintenance instructions
7. Battery capacity and safety margin calculations (where batteries are provided)
8. Voltage drop calculations for notification appliance circuits
9. Mounting height elevation for wall-mounted devices and appliances
10. Where occupant notification is required, minimum sound pressure levels that must be produced by the audible notification appliances in applicable covered areas
11. Locations of alarm notification appliances, including candela ratings for visual alarm notification appliances
12. Pathway diagrams between the control unit and shared communications equipment within the protected premises
13. Completed record of completion in accordance with 7.5.6 and 7.8.2
14. For software-based systems, a copy of site-specific software, including specific instructions on how to obtain the means of system and software access (password)
15. Record (as-built) drawings

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16. Records, record retention, and record maintenance in accordance with Section 7.7
 17. Completed record of inspection and testing in accordance with 7.6.6 and 7.8.2
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- 7.2.2 System design documents shall identify the name and contact information of the system designer.
 - 7.2.3 All fire alarm drawings shall use symbols described in NFPA 170 or other symbols acceptable to the authority having jurisdiction.
 - 7.4 Shop Drawings (Installation Documentation). (SIG-FUN)
 - 7.4.1 The requirements of Section 7.4 shall apply only where required by other governing laws, codes, or standards; by other parts of this Code; or by project specifications or drawings.
 - 7.4.2 Shop drawings shall be drawn to an indicated scale, on sheets of uniform size, with a plan of each floor.
 - 7.4.3 Shop drawings for fire alarm and emergency communications systems shall provide basic information and shall provide the basis for the record (as-built) drawings required in accordance with 7.5.2.
 - 7.4.4 Shop drawings shall include the following information:
 1. Name of protected premises, owner, and occupant (where applicable)
 2. Name of installer or contractor
 3. Location of protected premises
 4. Device legend and symbols in accordance with NFPA 170, or other symbols acceptable to the authority having jurisdiction
 5. Date of issue and any revision dates
 - 7.4.5 Floor plan drawings shall be drawn to an indicated scale and shall include the following information, where applicable for the particular system:
 1. Floor or level identification
 2. Point of compass (indication of North)
 3. Graphic scale
 4. All walls and doors
 5. All partitions extending to within 15 percent of the ceiling height (where applicable and when known)

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6. Room and area descriptions
 7. System devices/component locations
 8. Locations of fire alarm primary power disconnecting means
 9. Locations of monitor/control interfaces to other systems
 10. System riser locations
 11. Type and number of system components/devices on each circuit, on each floor or level
 12. Type and quantity of conductors and conduit (if used) for each circuit
 13. Identification of any ceiling over 10 ft (3.0 m) in height where automatic fire detection is being proposed
 14. Details of ceiling geometries, including beams and solid joists, where automatic fire detection is being proposed
 15. Where known, acoustic properties of spaces
- 7.4.6 System riser diagrams shall be coordinated with the floor plans and shall include the following information:
1. General arrangement of the system in building cross-section
 2. Number of risers
 3. Type and number of circuits in each riser
 4. Type and number of system components/devices on each circuit, on each floor or level
 5. Number of conductors for each circuit
- 7.4.7 Control unit diagrams shall be provided for all control equipment (i.e., equipment listed as either a control unit or control unit accessory), power supplies, battery chargers, and annunciators and shall include the following information:
1. Identification of the control equipment depicted
 2. Location(s) of control equipment
 3. All field wiring terminals and terminal identifications
 4. All circuits connected to field wiring terminals and circuit identifications
 5. All indicators and manual controls
 6. Field connections to supervising station signaling equipment, releasing equipment, or emergency safety control interfaces, where provided
- 7.4.8 Typical wiring diagrams shall be provided for all initiating devices, notification appliances, remote indicators, annunciators, remote test stations, and end-of-line and power supervisory devices.

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- 7.4.9 A narrative description or input/output matrix of operation shall be provided to describe the sequence of operation.
- 7.4.10 System calculations shall be included as follows:
 - 1. Battery calculations
 - 2. Notification appliance circuit voltage drop calculations
 - 3. Other required calculations, such as line resistance calculations, where required