

# FIRE Prevention



## Fire Alarm System Plan Review & Acceptance Testing

# Plan Submittal

## minimum requirements

FIRE ALARM CONSTRUCTION DOCUMENTS SHALL BE SUBMITTED TO THE FIRE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO SYSTEM INSTALLATION (2012 IFC SEC. 901 AND 907).

**Designer Information:** Plan drawings shall be prepared and signed/dated with a wet signature by a designer who meets qualification criteria specified in this pamphlet and NFPA 72. A minimum NICET III or acceptable equivalent required. In all cases, the designer of the system shall be clearly identified on the plans (2010 NFPA 72 Sec 10.18.1.1).

**Fire Alarm Plan submittal:** Each submittal shall include a minimum two sets of complete plans and technical specification sheets. The following items are also required (2010 NFPA 72 Sec 10.18.1.2).

- Fire Alarm System Permit application form
- Project narrative describing design assumptions and scope of work where applicable
- Project information (name, address, contacts, etc.)
- Code summary (i.e. applicable codes, occupancy type, construction type, occupant load, etc)
- Sequence of events matrix
- Device riser diagram and device descriptions
- Legend
- Accurate floor plan
- Point to point wiring
- All device locations



• **Battery type and capacity:** Calculations supporting the capacity shall be provided. Cut sheets from the battery manufacturer shall be provided with calculations.

• **Wire size calculations:** All new construction submittals shall include a statement by the designer that a wire size calculation has been performed and the proposed system meets the manufacturer specifications. Voltage drop calculations and supporting documentation may be required upon request from the authority having jurisdiction (AHJ).

**Re-Submittals:** Submittals requiring additional information will be placed "On Hold" until required information has been submitted. Plan information revisions shall be submitted with changes clouded. Changes in other documents shall be clearly identified.

**Equipment Specification Sheets:** Equipment utilized in the design shall be clearly identifiable in the submitted specification sheets either by highlight or marking.

**Non-Required Systems:** All proposed non-required fire alarm systems shall meet the same requirements for required systems and must meet locally adopted codes (i.e. International Fire Code, NFPA 72, etc.). The "Non-Required" fire alarm system shall be submitted for review and acceptance to the Fire Department (2010 NFPA 72 Sec 17.5.3.3.1).

**Minor work:** Additions or remodels to existing commercial fire alarm systems that involve five (5) or fewer devices may submit a less complex set of drawings at the AHJ's discretion (i.e. 8x10 PDF). Call the AHJ prior to submission for requirements. Submittal requirements will be based on occupancy, scope of work, etc. **Contractors are required to meet designer and installer qualification specified in this brochure and NFPA 72.**

FEEES WILL BE ASSESSED UPON THE CONCLUSION OF THE PLAN REVIEW IN ACCORDANCE WITH THE LOCALLY ADOPTED FEE SCHEDULE.

IT IS THE RESPONSIBILITY OF THE DESIGNER/INSTALLER OF RECORD TO ASSURE ADHERENCE TO ALL APPLICABLE CODE REQUIREMENTS. FINAL ACCEPTANCE OF ANY FIRE ALARM SYSTEM INSTALLATION IS SUBJECT TO FIELD INSPECTION BY THE FIRE DEPARTMENT (2012 IFC Sec 105.4.4).



# Final Inspection

## and acceptance testing



**Pre-Test:** Full 100% pre-testing of the fire alarm system is required prior to scheduling the final inspection and acceptance testing. Documentation must be submitted in written form and signed by the fire alarm contractor (i.e. company form, letter, etc.) documenting pre-test information and indicating the system has been installed in accordance with approved plans and tested in accordance with the manufacturers published instructions and NFPA requirements. Full device testing reports will not be

accepted in lieu of this document, however may also be required by the AHJ at their discretion (2012 IFC 901.2.1, 2010 NFPA 72 Sec 10.18.1.3).

**Final Inspection Scheduling:** Final Inspection requests for most projects will not be granted until both the Fire Alarm and Fire Sprinkler contractor make the request and state they are ready for acceptance testing. The fire alarm contractor may call for final inspections when the project only involves a fire alarm system and not a fire sprinkler system. Requests for inspections require a minimum 48 hours notice.

**Alarm Monitoring:** Must be set up prior to final inspection. Include the entity name and contact information for the listed Supervising or remote station. An approved means of communication must be established such as two phone lines, etc. (2012 IFC Sec 907.6.5).

**Permits On-Site:** Approved set of plans, including comments and conditions of approval by the AHJ, shall be made available onsite while work is being completed.

**Contractor Personnel:** A minimum of two technicians must be onsite during all final inspections (one at panel, one with inspector for radio contact purposes). Exceptions may be made for smaller projects.

**Grand Junction Fire Department**  
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Grand Junction, CO 81501

office hours: Monday - Friday, 8am to 5pm

office: 970.244.1400

fax: 970.244.1471

website: [gjc.org/FirePrevention.aspx](http://gjc.org/FirePrevention.aspx)

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**FIRE**  
**Prevention**

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# Final Inspection and acceptance testing

**Acceptance Testing:** Device testing will not be conducted prior to the completion of most major construction including painting, sawing, etc. Smoke detectors shall not be installed until final clean up of the entire project. (2010 NFPA 72 Sec 17.7.1.11.3). Exceptions may be granted by the AHJ under certain conditions (i.e. protection during construction, etc.).

**Record of Completion:** Document shall be submitted to the Fire Code Official upon completion of the final inspection (2012 IFC Sec 907.7.2). A copy of the "Fire Alarm System Record of Completion" may be found in NFPA 72 (2010 NFPA 72 Sec 10.18.1.4).

**System Map:** A zone and system layout map may be required for large scale or complex systems (i.e. multi-floor structure, large healthcare centers, etc.) In most cases, the map shall be placed in the "Fire Alarm Control" room. This requirement is at the discretion of the AHJ.

**As-Built Plans:** Significant deviations from the approved design during the installation of the fire alarm system may require a new submittal or submittal of "as built" plans to the AHJ. This requirement is at the discretion of the AHJ (2012 IFC Sec 105.4.5, 2012 IFC Sec 907.7.3, 2010 NFPA 72 Sec 10.18.2.3).



# Designer qualifications

**Design personnel shall be qualified in the area of fire alarm systems design as defined by NFPA 72, Sec 10.4.1.1. (2010 ed) The term qualified personnel shall include the following:**

1. Personnel who are factory trained and certified for fire alarm system design of the specific type and brand of system being designed.
2. Personnel who are certified by a nationally recognized fire alarm certification organization acceptable to the AHJ (i.e. IMSA – International Municipal Signal Association & NICET III – National Institute for Certification in Engineering Technologies).
3. Personnel who are registered, licensed or certified by a state or local authority.

# Installer qualifications

**Installation personnel shall be supervised by persons qualified and experienced in the installation, inspection or testing of fire alarm systems as defined by NFPA 72, Sec. 10.4.2.1 (2010 ed). The term qualified personnel shall include the following:**

1. Personnel who are factory trained and certified for fire alarm system design of the specific type and brand of system being designed.
2. Personnel who are certified by a nationally recognized fire alarm certification organization acceptable to the AHJ (i.e. IMSA – International Municipal Signal Association & NICET II – National Institute for Certification in Engineering Technologies).
3. Personnel who are registered, licensed or certified by a state or local authority.



# Service Personnel qualifications

**Personnel shall be "qualified and experienced" in the inspection, testing, and maintenance of fire alarm and fire monitoring system as defined by NFPA 72, Sec. 10.4.3.1 (2010 ed). The term qualified personnel shall include the following:**

1. Personnel who are factory trained and certified for fire alarm system service of the specific type and brand of system.
2. Personnel who are certified by a nationally recognized fire alarm certification organization acceptable to the AHJ. (i.e. IMSA – International Municipal Signal Association & NICET – National Institute for Certification in Engineering Technologies).
3. Personnel who are registered, licensed or certified by a state or local authority.
4. Personnel who are employed and qualified by an organization listed by a nationally recognized testing laboratory for the servicing of fire alarm systems.

# Code References

**International Fire Code (2012 Edition)**  
**NFPA 72 (2010 Edition)**  
**Local and State Regulations**  
**Standards/Codes adopted by reference**