

**MINNEAPOLIS FIRE DEPARTMENT  
FIRE PREVENTION BUREAU POLICY # 9 - 4  
FIRE ALARM SYSTEMS FOR MULTI-UNIT RESIDENTIAL OCCUPANCIES**

Original issue 9 - 84

Last revision 2-5-08

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**ISSUE:**

When are alarm systems required and what are the detailed requirements.

**CODE REQUIREMENTS:**

1. *New construction or change of occupancy: Alarm systems are to be installed when required by the Minnesota State Building Code (MSBC).*
2. *Existing buildings:*
  - a. *Alarm systems are to be installed when required by the Minnesota State Fire Code (MSFC). Systems are required throughout the building when any of the following conditions exist:*
    - i. *Any guest room or dwelling unit is located two (2) or more stories above the story containing the lowest level of exit discharge.*
    - ii. *Any guest room or dwelling unit is located more than one (1) story below the story containing the highest level of exit discharge of exits serving the dwelling unit.*
    - iii. *The building contains 16 or more dwelling units or 20 or more guest rooms.*

*Note: Fire separation walls DO NOT define separate buildings for the purpose of fire alarm requirements.*
  - b. *Fire alarm systems may, when approved by the fire department, be used as an alternate method of complying with other code provisions; this policy applies equally to those systems.*
3. *Fire alarm systems are to be designed, installed and maintained in accordance with NFPA #72.*

**PROBLEM:**

The fire code does not give complete detailed requirements and leaves some of the details to the local jurisdiction.

This policy condenses and formalizes detailed requirements.

**MFD ACCEPTABLE COMPLIANCE:**

1. At least three (3) sets of plans and equipment data sheets are to be submitted to the fire department for review. The submittal is to include all of the information required by NFPA #72 and, but not limited to, the following:
  - a. Name of the building
  - b. Building address
  - c. Building owner
  - d. Contractor name and address
  - e. Contractors Minnesota state license number and designer's NICET certification number
  - f. Plans are to be drawn to scale or to be fully dimensioned showing locations of all devices and candela ratings of the visual notification devices.

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- g. Specification sheets for ALL equipment.
  - h. Occupancy classification.
  - i. Identification of each room.
  - j. Battery calculations.
- 2. The fire alarm contractor is to be licensed by the Minnesota State Board of Electricity.
- 3. Permits are to be obtained from the Minneapolis State Board of Electricity and MFD.
- 4. All equipment is to be U L listed for its intended use.
- 5. An annunciator panel or the control panel is required to be located at the address side entrance of the building in buildings with four (4) or more floors above the lowest level of exit discharge.
- 6. The system is to be zoned by floor in buildings with four (4) or more floors above the lowest level of exit discharge.
- 7. The system is to have its primary power from the building's electrical system and is to have a battery backup power supply capable of providing power to the system for 24 hours in standby mode and an additional five (5) minutes in alarm. Systems that are also remote or auxiliary stations are to have a backup power supply of at least 60 hours.
- 8. The alarm system shall consist of smoke detectors in all interior corridors that serve dwelling units or sleeping rooms, heat detectors in storage rooms, laundry rooms, furnace and mechanical rooms and all similar common areas; and manual pull stations as outlined in item # 9.
- 9. One (1) manual pull station is required, which may be located at the control panel.
- 10. The spacing of smoke detectors is to be in accordance with the manufacturer's recommendations and NFPA #72. The extended spacing of smoke detectors in narrow rooms and corridors, as defined in NFPA #72 may be applied to ceiling mounted detectors, but does not apply to wall mounted detectors.
- 11. When smoke detectors are powered by two (2) wire circuits, compatibility information is to be submitted that indicates that the detectors are cross listed with the panel.
- 12. Storerooms and closets which open into an exit corridor are to have heat or smoke detectors.
- 13. Rooms and areas that are required to have heat detectors may have the detectors omitted when protected by sprinklers and the sprinkler system is monitored by the alarm system,
- 14. Water flow, valve tamper switches and other sprinkler system monitored functions are to be connected to the fire alarm panel and are to be zoned separately from the other detection zones.
- 15. Smoke detection systems that control elevators or smoke dampers and fans are to be monitored by the building fire alarm system.

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- 16. The fire alarm signaling system or intercommunication system shall not be used for any purpose other than emergency warning.

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17. The number, location and type of alarm notification devices are to provide a minimum of 75 dBA alarm sound level in all parts of the building with doors closed. The alarm sound level will be tested with a sound meter. Alarm horns or speakers may be needed within living units to provide the minimum sound level.

18. New alarm and communication systems in high-rise buildings are to have a voice communication system in lieu of alarm horns and are to have a separate fire fighter communication system. Existing alarm horn systems need not be replaced with voice communication system until the horn system can no longer be serviced.

19. At the completion of the installation, the contractor is to submit a written certification that the installation is in accordance with the approved plans, NFPA Standards and that it has been successfully tested and left in operation.

20. The contractor is to arrange an acceptance test with the MFD inspector. The contractor is responsible for providing all test equipment (exception: MFD will provide its own sound meter) and for testing devices, the inspector only acts as a witness.