

ROARING FORK FIRE RESCUE AUTHORITY



FIRE ALARM MAINTENANCE AND INSTALLATION GUIDELINES

Updated: August 1, 2022

It is the intent of this packet to provide the owner, designer and contractor with the requirements for installation and maintenance of all automatic fire alarm systems required to be installed by this jurisdiction and operating within the boundaries of the Roaring Fork Fire Rescue Authority.

A. Occupancies Requiring Fire Alarm Systems:

1. The Building Official and Fire Department will make the determination whether a fire alarm system will need to be installed. Criteria to be used for this determination are the International Fire Code and applicable section of the regional adapted code (Eagle County, Town of Basalt, and Pitkin County). In addition, a fire alarm system may be required because of special circumstances or alternative methods of construction.
2. Once the determination is made that an alarm system is required, the Fire Department will supervise all plan review, installation and acceptance testing.

B. Design and Installation:

1. Design and installation of new automatic fire alarm systems shall conform with Sections C and D of this packet, Article 760 of the National Electric code, N.F.P.A. Standards 72 as applicable and the International Fire Code.
2. Design and installation of fire alarms shall be done by approved contractors who have provided or a minimum of NICET III design and NICET II for installation and adequate proof of liability insurance and a State electrical permit to the Emergency Services Department.

C. Specific Installation Requirements for the Roaring Fork Fire Rescue Authority:

1. **Component Listing:** All fire alarm system components shall be UL or FM listed for the intended application.
2. **Fire Alarm Control Panel:** The primary fire alarm control panel shall be located in an approved heated location as close as reasonable to a main door. A minimum of a three foot clear space shall be maintained directly in front of the panel.
3. **Alarm Verification:** Alarm verification will be required on all new installations. The method of alarm verification shall be approved by the Roaring Fork Fire Rescue Authority.

4. **Unit Initiation:** In dwelling units and guest rooms at minimum, a local system smoke detector shall be provided. Smoke detectors shall sound a local alarm only. Carbon monoxide detector shall be installed per minimum state law. The CO detector will be placed on each floor level, outside each sleeping area (floor level, eye level, or ceiling level is acceptable).
5. **Remote Indicating Lights:** Any lockable room or area that has detection shall have a remote indicating light.
6. **Secondary Power Supply:** Secondary power supply shall be capable of operating the entire system for 24 hours under normal conditions and 5 minutes in alarm.
7. **Labeling:** All fire alarm panels, remote annunciators, remote indicating lights and firefighter telephone jacks shall be labeled. Labels shall be word graphic, of a durable material and permanently attached. Engraved plastic labels are recommended. Temporary labels for new fire alarm installations **WILL NOT BE ACCEPTED.**
8. **Outside Alarm and Light:** Every building shall have an outside audible alarm (minimum 85 db) and flashing light. The location to be approved by the Roaring Fork Fire Rescue Authority.
9. **Alarm Audibility:** All fire alarm systems shall be capable of delivering a 15 db above ambient background noise and 5 db above maximum anticipated. All bedroom required 70 db at pillow.
10. **Kitchen Hood Initiation:** All fire alarm and fire extinguishing devices including kitchen hood extinguishing system(s) shall sound a general alarm when the building is equipped with a fire alarm control panel.
11. **Supervision:** Supervision of all fire alarm circuits and devices shall be provided at the fire alarm control panel. This shall be accomplished by a visual and audible trouble signal per zone. A “trouble silence” switch shall be provided.
12. **Smoke Detection:** All system smoke detectors shall lock on and have a solid red light when in alarm. All system smoke detectors shall reset from the fire alarm panel.
13. **Thermal Detection:** Heat detectors shall be capable of latching an indicating light or some means of easy identification. Heat detectors shall

be used in areas that are likely to contaminate smoke detectors causing false fire alarms or in unheated areas.

14. **Duct Detection:** Duct detection shall comply with the International Fire Code. Duct detectors shall be resettable from the fire alarm control panel. When the fire alarm control panel has shut down control of any air handler unit, an override switch must be incorporated into the fire alarm control panel to allow Fire Department control. When the air handler unit override is activated, the control switch must place the fire alarm control panel in a trouble condition. And duct detector shall have a remote indicating light and test switch.

15. **Fire Alarm Zones:** The following zones, but not all inclusive, are required if applicable:
 - a. Automatic Fire Alarm per floor (and wing if needed).
 - b. Main Sprinkler Water Flow.
 - c. Sprinkler Water Flow per floor (and wing if needed).
 - d. Trouble (supervisory service) indication per control valve or zone.
 - e. Each Stairwell.
 - f. Each trash chute fire alarm.
 - g. Each elevator shaft/equipment room.
 - h. Each linen chute fire alarm.
 - i. Kitchen hood extinguishing systems.
 - j. Duct detectors, one system per zone.
 - k. Low air, supervisory.

16. **Knox Box:** Knox Boxes are required and shall be installed in such a manner so that water, ice or dirt will not affect its ability to be opened. The location shall be approved by the Fire Department. Knox Boxes shall be included as a part of the alarm system installer's bid. Information for Knox lock boxes may be obtained from the Fire Department business office.

D. Sprinkled Buildings and Occupancies Requiring Monitored Systems:

1. Any building with sprinkler heads shall be supervised by a U.L. listed central receiving station.

2. Any building containing a fire alarm system required by this department, or requested for the intended purpose of early notification of the Fire Department or A, E, I or H occupancy shall be monitored by a U.L. listed central receiving station.

3. Signals from a monitored fire alarm or sprinkler system shall consist of a normal or test signal, alarm signal and trouble signal.
 - a. Alarm signals shall immediately be re-transmitted to the Fire Department.
 - b. Trouble signals shall be given to the owner and the alarm dealer. It shall be the responsibility of the owner to maintain the system in an operative condition at all times.
4. The central receiving station shall submit in writing the appropriate response to both trouble and alarm signals. The Fire Department will have final approval of these responses.

E. Plans and Specifications:

1. Two complete sets of (24" X 36") plans and specifications (including cut sheets) are required. All fire alarm devices shall be listed on an equipment legend. A Fire Protection Engineer's stamp may be required for special installations.
 - a. **Specification:** Specification sheets shall provide information on component operation, primary panel configuration along with all devices and their operation, spacing requirements, testing, laboratory listing, etc.
 - b. **Programming:** All devices shall be properly programmed as to their intended meaning and location.
2. **Equipment List:** Shall provide the number of devices, part numbers and description of equipment provided.
2. **Battery Type and Capacity:** Calculations supporting the capacity proposed shall be provided.
3. **Wire Size and Calculation:** The plan submittal shall include wire size calculation and that the proposed system meets the equipment manufacturer's specifications. The Authority having jurisdiction may require further supporting documentation.
4. **Riser Diagrams:** Riser diagrams shall indicate the zone configuration and designate the number of devices per zone.

5. **Warranty Information:** The fire alarm contractor shall designate who will be responsible for any malfunctions during the warranty period.
6. **Manuals:** Operation and maintenance manuals shall be provided to the owner.
7. **Written Narrative:** A written narrative detailing the operation sequence of all alarm zones shall be provided.

F. Testing of Fire Alarm Installation:

1. Final acceptance testing of the alarm system shall be witnessed by the Fire Department and adequate manpower and equipment shall be provided by the contractor.
2. The Fire Alarm System Certification and Description Document, the as-built drawings, and the manufacturer's instruction manual(s) should be available at the time of acceptance testing.
3. Test each initiating device, indicating appliance, and signaling line circuit to confirm that the integrity of installation conductors is being properly monitored (supervised). Introduction of a fault in any monitored (supervised) circuit should result in a suitable trouble indication at the control unit. One connection should be opened at no less than 10 percent of the initiating device, indicating appliance, and signaling line circuits.
4. Test each initiating device, indicating appliance, and signaling line circuit for proper alarm response.
5. Test the system for all intended functions in accordance with the manufacturer's instruction manual.
6. Test all primary (main) power supplies.
7. Test all secondary (standby) power supplies.

G. Issuance of Certificate of Occupancy:

1. No certificate of occupancy or temporary certificate will be issued until the following items are completed:
 - a. Final acceptance test of fire alarm system.

- b. The owner or his/her agent shall submit a written maintenance and employee training policy concerning the operation of the fire alarm system.
- c. Records of completion 907.8.2

H. Maintenance and Periodic Testing:

- 1. All fire alarm systems shall be maintained in accordance with Article 10 of the International Fire Code. N.F.P.A. standard 72 shall be used as a guideline for periodic testing of the fire alarm system.
- 2. It shall be the policy of this Department that existing fire alarm systems that do not meet current codes and standards shall be allowed to remain as long as the deficiencies do not constitute a distinct hazard to life and safety. The Fire Chief or his authorized representative, acting under abatement of dangerous buildings shall act to remedy those deficient systems.