



**CITY OF BLAINE  
SAFETY SERVICES  
Fire Inspections  
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## **FIRE ALARM SYSTEMS**

Fire alarm systems shall be installed with a fire inspection permit and complying with the following requirements.

### **Submittal Requirements**

- A permit application signed by the low voltage contractor or electrical engineer.
- Permit fee of \$5.00 per device. (\$50.00 minimum fee)
- A minimum of three sets of scaled floor plans showing the location of all devices.
- Manufacturer's specification sheets on all devices being installed.
- Back up battery calculations.

### **General Requirements**

- All system components must be U.L. listed and installed for the appropriate application in accordance with their listing.
- System must be designed and installed per current applicable standard NFPA 72.
- City approved plans for the system are required to be on the site at all times.

### **Monitoring/annunciation**

- The fire alarm control panel or a remote annunciator must be located at the main entrance or at an approved location.
- The fire alarm control panel must be monitored by a UL central station. (when the system is required to be monitored).
- Alarm verification is required. Verification cycle is required to be a minimum of 30 seconds.
- Zoning of the fire alarm system shall be per Blaine Fire Inspection Department requirements. A minimum of one zone per floor will be required.
- Water flow alarm must be monitored as a distinct signal.
- Low air pressure on sprinkler systems containing air pressure shall be monitored.
- Devices designed to initiate a specific function or action i.e. duct smoke detection, elevator recall, and door hold open detectors shall be monitored only for supervision.

### **System Components and Hardware**

- Power supply for alarm systems must be on a dedicated circuit. Breakers for all alarm system components, including exterior sprinkler alarms must have approved locking devices to prevent the accidental disconnecting of power.
- Monitoring systems must comply with NFPA 72 including panel requirement for audible trouble signals and must have two means of signal transmission.
- When audible/visual signaling devices are required to alert building occupants of an alarm condition, the signal shall be a synchronized temporal pattern.
- Remote alarm indicating devices are required at locations when duct detectors are not visible from floor.

## Fire Alarm Systems

- On addressable systems, devices must be labeled to coincide with the device/address displayed on the panel.
- Listed smoke detectors are required within 5 feet of all smoke damper locations.
- Detectors used with hold open devices must be UL listed for the release function.
- All indicating sprinkler control valves, including WPIV's, must be secured and electronically supervised.
- The fire alarm control panel must be located in an enclosed room, ie: mechanical room. Obtain prior approval of FACP location.
- The fire alarm control panel or a remote annunciator panel must be located at the main entrance unless otherwise approved.
- A smoke detector or manual pull station is not required in the room or area of the fire alarm control panel, monitoring panel and dialer.
- Zoning of the fire protection systems shall be approved by a Fire Inspector and shall be annunciated on the alarm panel.
- Each floor shall be a separate fire alarm zone and be annunciated at the alarm panel.
- A zone map is required on all multiple sprinkler riser or zoned systems. The map must be permanently mounted adjacent to sprinkler riser, alarm panel and annunciator panel.

### **Additional Requirements for Multi-family Residential Systems**

- Smoke detectors in apartment units must be single station and are not required to be monitored.
- Alarm horn must meet audibility requirement of NFPA 72, which would normally require an alarm horn in each unit.

### **Inspections Required**

System must be 100% tested prior to inspection. If system fails, a re-inspection must be scheduled. Re-inspection fees are \$50.00.

- Test all devices, smoke detectors, pull stations, heat detectors, waterflow for alarm signal. Contractor should have adequate staff and or radios to verify signals at panels.
- System activation test must be conducted with fire inspector present.
- Random test for trouble on devices. Distinct trouble signal required.
- All building horns sounding on activation of any device in the automatic fire alarm system and the automatic sprinkler system.
- The alarm panel and annunciator panel zones are annunciated when each zone is activated.
- Magnetic door devices release, doors close and latch on activation of any device.
- Ventilation system shutdown upon activation of duct smoke detectors.
- Duct smoke detectors shall transmit a supervisory signal only.
- Test battery back up of system, AC power shut down and operate system.
- Battery disconnect.
- Test elevator recall function, primary and secondary floors fire service operation.
- Smoke fire dampers close upon activation. Dampers do not have to be interconnected.
- Contact alarm company to verify correct signals and address.
- Completion of NFPA 72, installation/testing forms.