



**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 \$3.00 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.