

Guidelines and Permit Information: **Fire Alarm**

Permit Required: 2020 MSFC 105.7.1 Fire Alarm, Detection Systems and Related Equipment

A construction permit is required for the installation of, or modification to, fire alarm and detection systems and related equipment.

Exception: Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

Types of permits: *Inspections staff has final authority of selecting the required permit.*

Daywork: A daywork permit is meant to minimize the design time and allow alarm work to keep pace with small projects.

- Daywork projects examples would include change of communicator, like for like device swap, etc.
- Full submittal plans are generally not required
- The daywork permit form is available by clicking [here](#). The form shall be completed in its entirety and uploaded to ePermits.

Emergency Work: An emergency work permit is to be utilized when emergent repair work is needed to return an impeded system back into service. Upon completion of this work, the system should be in normal condition, and a permit shall be applied for no less than two (2) business days after work completion:

- Emergency work projects shall only encompass needed repairs caused by damage or malfunction
- System design changes are not permitted without prior approval and a daywork or full-submittal permit
- The emergency work permit form is available by clicking [here](#). This form shall be completed in its entirety and uploaded to ePermits.

Full Submittal: A full submittal permit is required for all new systems and modifications to systems that do not meet the parameters of the day work or emergency work permits.

- A complete set of plans as described within this document are required
- Plan review time varies and is conducted on a first-submitted, first-served basis

Limited: A limited permit is meant to allow contractors to remain on schedule if plan review is not complete, at the contractor's risk.

- Each job will be considered separately for the issuance of a limited permit
- A complete set of plans shall be submitted prior to issuance of a limited permit
- A limited permit shall not be issued if work had started prior to the issuance of a permit
- A contractor or responsible party must come to the Maple Grove Government Center to sign a liability waiver prior to a limited permit being issued

Conditions:

- Any work completed without a permit, shall result in the doubling of fees, and work shall be exposed if required for inspection
- Any material or installation deviation from the approved plans will require prior approval from MGF D Inspections staff.
- As-built plans shall be submitted before a Certificate of Occupancy will be issued.
- An approved permit shall be posted on site
- Approved stamped plans shall be used and available on site

Fees: The City of Maple Grove Fee Schedule is available for review on the city website and should be reviewed to ensure compliance.

Contractor Information: Certification, permitted to do work, apply for permit

- The system installation personnel shall be directly supervised (on-site) by persons who are qualified and experienced in the installation, inspection, and testing of fire alarm systems. Qualified personnel shall include, but are not limited to, the following:
 - Factory trained and certified
 - National Institute of Certification in Engineering Technologies (NICET) alarm level II
 - Personnel licensed by the State Board of Electricity; MN Statutes
- The company or individual who obtains the permit will be responsible for the design, installation, and testing of the system, regardless of who sub-contracted for any portions of the system.
- A low voltage fire alarm system shall be installed only by an electrician/electrical contractor and/or an alarm and communication contractor licensed by the State Board of Electricity (State Statute 326.2421).
 - A separate electrical permit is required as applicable.

Code Guidance/ General Requirements (not all inclusive): MSFC, NFPA, & MG Chapter 18

Section 907 of the Minnesota State Fire Code is amended by adding the following language:

- System Certification. All required fire alarm or monitoring systems installed after January 1, 1986, shall have a current UL72 certificate.
- Manual pull stations shall be of the key re-settable type, utilizing the same key as the fire alarm panel.
- Alarm verification is required for all smoke detectors; verification time shall not exceed thirty (30) seconds.
 - Exception: Manual pull stations shall not use verification.
- Record drawings and equipment specifications shall be provided in an approved fire alarm document box near the fire alarm panel or in another location approved by the fire code official.
- Zone maps shall be posted near the fire alarm panel and all annunciator(s) throughout the building.
- Low air alarms shall be installed on all new dry sprinkler systems.

- Low-temperature alarms shall be installed in all new riser rooms with direct exterior access.
- All fire suppression systems shall be monitored by an approved fire alarm.
- Annunciator Panel:
 - Required on non-addressable systems, where the fire alarm control panel is not within close proximity to the main entrance
 - As required by the AHJ
- Lock-on's/Anti-tamper devices shall be installed on all circuit breakers utilized for life safety equipment.
- FACP/FAAP's shall not require an access or security code
 - Exception: AHJ approval
- All new installations where manual pull stations accessible to the public are required by code shall have anti-tamper covers installed
- Central Station Service in accordance with NFPA 72 shall be provided. All signals shall be transmitted through a UL Listed communicator.
 - All Central Station's shall be U.L. Listed

Plan Submittal Requirements

- Floor plans showing the proposed system design that is fully dimensioned and to scale
 - Details shall be a minimum of ¼ inch = one foot or large enough to be legible if not to scale
 - All details on system components, building construction features, and obstructions shall be clearly legible
- Location of all initiating and signaling devices
- Control and trouble-signaling equipment
- Annunciation
- Power connection
- Battery calculations
- Voltage Drop
- Wiring diagram with wiring type and sizes
- Specifications on all equipment
- Ancillary functions
- U.L. listing information shall be submitted for the types of devices that can be connected for the service indicated in the listing for the control unit such as automatic fire alarm, manual fire alarm, water flow alarm, and sprinkler supervisory.
- Manufacturer's data sheets shall be provided for all equipment
- Designers name, business name, contact information, and proof of licensure
 - A minimum of a Professional Engineer (P.E.) or National Institute of Certification in Engineering Technologies (NICET) fire alarm level III shall be required for Group I, Group E, and high-rise occupancies; NICET fire alarm level II shall be required as a minimum for all other occupancies.
 - Other evidence of qualification can be considered if deemed equivalent.

If corrections are continually not made as addressed by inspections staff, additional plan review time may be charged to the applicant pursuant to the MG Fee Schedule.

All plans shall be submitted electronically through ePermits online. No paper plans will be accepted.

Inspection Requirements and Procedures:

General Criteria:

- All work shall remain exposed and accessible for inspection purposes until approved by FD inspections staff

Required Inspections:

- Electrical Inspector:
 - A rough-in and final inspection shall be scheduled and completed by the city's electrical inspector on all installations
- Rough-In
 - All components must remain visible, anything covered will be required to be exposed, not at the City of Maple Grove expense
- Final Inspection and testing of the system (at a minimum the following will be examined/tested)
 - Function test for proper operation of each device
 - Use of a magnet is not allowed
 - Sensitivity tested as required per manufacturers' specifications
 - Random testing for system trouble(s)
 - Random testing for ground fault trouble(s)
 - Correct operation on battery or standby power
 - NFPA 72 Record of Completion document completed
 - NFPA 72 Acceptance Test Report (System of Record of Testing and Inspection)
 - Inspection, Testing, Maintenance for year
 - Installing contractor information provided on the panel
 - Monitoring contractor information provided on the panel
 - The account number provided on the panel
 - Circuit breaker location and number provided on the panel
 - All required documents placed into the cabinet or document box
 - System zone map with a minimum size of 8-1/2" x 11" or as approved by MGFD.
 - System reset information provided to the fire department
 - One key to the fire alarm system provided to the fire department
 - One key for any other devices used with the fire alarm system
 - One PDF set of as-built drawings and battery calculations provided to the fire department

Permits shall not be considered complete/finalized until all appropriate documentation and testing have occurred/been obtained, including the issuance of a U.L. Certificate.

Zone Map Requirements:

Pursuant to Maple Grove Chapter 18-89.3 fire alarm zone maps shall be provided

- An acceptable zone map shall include the following:
 1. A size large enough to be clear and legible but no smaller than 8½" X 11".
 2. The zone map shall be on a simple floor plan with NO other markings other than wall, stairwell, and door locations.

- Fire Alarm plans are not acceptable as a zone map.
- 3. Zone maps shall either be mounted in a frame or laminated with rings attached and hung on the wall or by other approved means.
 - One additional zone map shall be provided at the fire alarm panel; if in a separate location.
- 4. The zone map shall show the general location of:
 - Each zone with all device(s) shown on a zoned system
 - Location of all initiating device(s) and address for intelligent/addressable systems
 - Water-flow and supervisory devices
 - Device(s) used for door unlocking or release
 - Devices used for the initiation of suppression systems
 - Duct detector(s) that interface with HVAC and fire/smoke damper control
 - Device(s) used for elevator recall
 - Device(s) used for the shutdown of other equipment
 - Other devices (s) as deemed appropriate by the AHJ
 - A North symbol and building address shall be included in the plan.
- 5. A symbol key shall be included
- 6. When systems are remodeled, extended, altered, or modified, the existing zone maps shall be updated.

Duct Detectors:

All duct detectors shall be installed and provided in compliance with the Minnesota State Mechanical Code.

General Requirements:

- Duct smoke detectors shall shut down only the affected unit
 1. Exception: Units connected to a smoke control system
 2. AHJ approval
- All remote devices shall be clearly labeled to correspond with the appropriate unit
- If a reset key is required, one shall be provided to the FD to be placed in the FD key box
- Testing:
 1. Remote test stations shall be provided for all duct detectors
 - Mounted in a central location or directly below the unit
 - Mounted so the FD can access without special tools or knowledge
- Notification
 1. Duct smoke detectors connected to the fire alarm panel shall transmit a trouble signal to the alarm panel.
 - Duct smoke detectors connected to the fire alarm panel shall be resettable by the fire alarm panel.
 2. Duct smoke detectors not connected to the fire alarm panel shall be provided with remote reset stations
 - Remote reset stations should provide appropriate notification to the occupants
 - Notification shall be provided in a constantly attended area or in a publicly accessible area beneath the unit (not in a mechanical room)

Click [HERE](#) to go to the ePermits website.