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General Requirements for Fire Alarm Systems

The 2022 Edition of NFPA 72 contains 29 Chapters and 9 Annexes covering requirements for the application, material selection, location, performance, design, installation, testing, and maintenance of fire alarm systems, supervising station alarm systems, public emergency alarm reporting systems, fire and carbon monoxide detection and warning equipment, and emergency communications systems, and their components. International Fire Code Section 907, Fire Alarm and Detection Systems, contains 10 Subsections and many Sub subsections covering much of the same, or similar, subjects as NFPA 72. It is the intent of this document to emphasize some basic requirements.

- The fire alarm system shall conform to the requirements of: the International Fire Code (IFC, 2021 Edition), International Building Code (IBC, 2021 Edition), the National Fire Alarm and Signaling Code (NFPA 72, 2022 Edition), the listing limitations and manufacturer's installation instructions.
- **72:18.4.2** requires the fire alarm audible signal pattern used to notify building occupants of the need to evacuate to be a distinct three-pulse temporal pattern. **72:A.18.4.2.3** notes caution should be used in spaces such as atriums where the sounds produced in one notification zone can cause confusion regarding the temporal pattern.
- In accordance with IFC 907.6 a fire alarm system shall be installed and monitored in accordance with Sections 907.6.1 Wiring; 907.6.2 Power Supply; 907.6.3 Initiating device identification; 907.6.3.1 Annunciation; 907.6.4 Zones; 907.6.4.1 Zoning indicator panel 907.6.4.2 High-rise buildings; 907.6.5 Access; 907.6.6 Monitoring; 907.6.6.1 Auto dialing; 907.6.6.2 Termination of Monitoring.
- Per **72:26.2.1.2 & 26.2.1.3** all fire alarm signals received by the supervising station (SS) shall be immediately retransmitted to the communication center (CC) [720-872-6403 or 6522] by one of the following methods:
 1. Signals identified by zone at the SS shall be retransmitted by zone to the CC.
 2. Signals identified as an individual point or points at the SS shall be retransmitted by point or points to the CC.
 3. Signals that are received the SS as events shall be retransmitted by event to the CC.
- **72:26.3.8.3.4** Upon receipt of trouble signals or other signals pertaining solely to matters of equipment maintenance of the fire alarm systems, the central station shall:

1. If received trouble signal does not restore within 15 minutes communicate immediately with persons designated by the subscriber.
 2. Dispatch personnel to arrive within 4 hours to initiate maintenance if necessary.
 3. When the interruption is more than 8 hours, provide notice to subscriber as to the nature, the lapse time, and the restoration of service.
- A graphic zone/initiating device identification plan (map) shall be installed adjacent to the fire alarm control panel. The map shall be constructed of durable material, shall have permanent and legible lettering, shall be permanently mounted or affixed, and shall accurately depict the building location of alarm zones and initiating devices, as depicted on the panel display. Zone/Initiating device plans shall be revised as needed to correspond with system changes.
 - **72:10.12.** when an occupant notification alarm signal deactivation means is actuated, both audible and visual notification appliances shall be simultaneously deactivated.
 - A copy of the approved construction permit, shop drawings, system calculations and construction documents/supporting data (e.g., manufacturer's specifications) shall be kept on the construction site at all times. Failure to display such documents may result in termination of the inspection and reinspection fees charged.
 - IFC 907.7 upon completion of the installation, the fire alarm system and all fire alarm components shall be tested in accordance with NFPA 72.
 - IFC 907.7.2 a Record of Completion in accordance with **72:7.5.6** verifying that the system has been installed and tested in accordance with the approved plans and specifications shall be provided.
 - The documentation of the design, acceptance, and completion of new systems and the alteration, maintenance, and testing of existing systems, shall comply with the minimum requirements in **72: Chapter 7 Documentation. 72:7.2.1 (1) through (17)** represents minimum documentation for more complex systems as required by the fire code official.
 - Per **72:14.2.10** a test plan shall be developed to clearly establish the scope of the testing for the subject system. **72:A.14.2.10** provides additional requirements regarding the test plan. The test plan and results shall be documented with the testing records per **72:7.5, 7.6, and 7.7.**
 - **72:7.5.2** before requesting final approval of the installation the installing contractor shall furnish a written statement stating that the system has been installed in accordance with approved plans and tested in accordance with the manufacturer's published instructions and the appropriate NFPA requirements.
 - **72:14.1.1** the inspection and testing of systems, their initiating devices, and notification appliances shall comply with NFPA 72 Chapter 14.

- Visual inspection of all applicable components (category 1 through 30) shall be in accordance with Initial Acceptance criteria in NFPA 72 Table 14.3.1 *Visual Inspection*.
- Testing of all applicable components (category 1 through 30) shall be in accordance with Initial Acceptance criteria **in 72:** Table 14.4.3.2 *Testing*
- The installer should schedule inspections and tests at least four (4) working days in advance.
- Provide the Fire Department with the following information prior to approval of *Acceptance Inspections and Tests*.
 - Name(s), and phone number(s), of owners/owner's representative of the subject building/premises.
 - Name(s), and business and emergency phone numbers, of person(s) responsible for fire alarm system inspections, tests, and/or maintenance.
 - Name of fire alarm system installing company, contact person(s), telephone number(s), designated for inspection, testing, and maintenance.

All service providers who inspect, test and repair fire protection systems within Thornton's jurisdiction are required to register and submit all test, inspection, and service reports via The Compliance Engine. All reports must be submitted in accordance with the testing schedule and requirements outlined in our adopted fire code.