



## Office of University Building Official

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### Fire Alarm Review Tips

- 1. Sprinkler Electric Outside Alarm:** An electric alarm-sounding device is permissible in lieu of a mechanically driven water motor-operated device. Such approved audible devices shall be connected to every automatic sprinkler system through waterflow device(s). They shall be provided on the exterior of the building in an approved location. Where fire alarm systems are installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system. (*USBC - 903.4.2, NFPA 13 6.8.1, 8.17.1.5*)
- 2. Emergency Voice/Alarm Communication System:** All new fire alarm systems shall be tone and voice evacuation systems with a digital message repeater and microphone allowing for local paging from the control panel/annunciator. All acoustically distinguishable spaces (ADS) shall be identified in the drawings for purposes of voice intelligibility. (*NFPA 72 24.4*)
- 3. Systems Control Center:** All building fire alarm systems shall communicate with University FM Systems Control Center via Keltron transceiver. The cost of transceiver and its installation shall be included in the project budget. It is recommended you coordinate the requirements early in the project.
- 4. Mass Notification Systems:** A mass notification risk analysis is required for any new building with 1,000 or more occupants in accordance with NFPA 72. This risk analysis to be completed during schematic design and a determination be made for the need of a mass notification system. (*USBC 907.1, NFPA 72 24.3.11*)
- 5. Fire Alarm Design/Shop Drawing (Submittals):** Shop drawings for the fire alarm system shall be submitted to the A/E of record for review and approval prior to submittal to OUBO. Approval from OUBO is required PRIOR to installation. *Shop drawings must include all applicable information indicated in NFPA 72 and the VUSBC to be considered acceptable. Requirements for construction documents prepared by A/E of record to meet HECOM provisions for each phase of design work.* (*USBC 907.1, NFPA 72 7.4*)
- 6. Smoke Detectors:** Where smoke detection (partial or full) is required, verify that rooms without smooth ceiling or with beam depths exceeding 10% of ceiling height are provided with smoke detection in accordance with *NFPA 72 17.7.3.2.4*.
- 7. Wiring:** Fire alarm conductors are to be installed in metallic raceway (i.e., conduit, MC cable, etc.). (*NFPA 70 Article 300*)

- 8. Labeling:** Junction box covers shall be painted red with letters “F/A” using a permanent marker on the cover. All fire alarm initiating devices, control modules, speaker, horn, and strobe circuits shall be labeled to identify the device address, circuit origin and function, as applicable on the device. *Identification of branch circuit shall be permanently identified at the control unit. (NFPA 72 10.6.5)*
- 9. Visual Notification Devices (Strobes):** Candela level for all strobes must be indicated on the drawings. *(NFPA 72 18.5.2.3)*
- 10. Dedicated Circuit:** Provide dedicated circuit and lockable circuit breaker with redmarking for fire alarm circuits. *(NFPA 72 10.6.5.2, 10.6.5.4)*

*\*Based on the 2018 USBC*