

# **Knox County Fire Prevention Bureau**

## **Fire Alarm System - Plan Submittal and Inspection Requirements**

All fire alarm systems installed within the jurisdiction of the Knox County Fire Prevention Bureau (KCFPB) shall meet all the applicable sections of the following:

IFC, 2018 edition  
IMC, 2018 edition  
NFPA 72, 2016 edition  
NFPA 70, 2017 edition  
NFPA 13, 2016 edition

Approval of shop drawings is not intended to imply waiver or modification of any requirements of NFPA 72 or any other applicable criteria. Additional requirements may be made by the field inspector. For additional information or concerns contact fire alarms plans reviewer at 865-215-4652 or [james.harper@knoxcounty.org](mailto:james.harper@knoxcounty.org).

### **Fire Alarm Design Criteria**

The fire alarm system shall meet the requirements of NFPA 72 (2016) and NFPA 70 (2017) and the KCFPB.

### **Fire alarm / monitoring systems shall be upgraded to current code compliance under the following circumstances:**

- Building renovations where system device upgrades and/or wiring upgrades, and/or additions to the system.
- System devices and/or wiring upgrades become necessary and/or additions of 50% or more are planned. This includes replacing a fire alarm panel.
- A change of occupancy classification where monitoring is required.
- Excessive false alarms occur due to malfunction (4 within 12 months).

*Requirements for systems or situations not specifically addressed by this directive and/or refinements to this directive shall be determined by the KCFPB.*

### **Submittal Requirements**

Any modification or addition to a new or existing fire alarm system requires a fire alarm permit. This includes replacing a fire alarm panel.

Maintenance, as defined in NFPA 72 3.3.149, or simple device replacement does not require a permit unless the total amount of devices replaced is 10% or greater of the total number of devices in the system. All maintenance or device replacements must be documented on the system service tags.

When submitting plans for review, all plan submittals must include all appropriate items listed in NFPA 72 or they will not be accepted. This provides a uniform approach for the design community. It is the responsibility of the installer/designer to assure all applicable code requirements are

followed.

The Knox County Code Administration Office offers online submittals which allows the fire alarm company to upload the shop drawings for review. Fire alarm shop drawings shall be submitted to Knox County Code Administration via the Knox Permit Portal.

### **Knox Permit Portal**

All fire alarm system plan submittals shall include:

1. All current license and company required documentation.
2. A PDF file of cut sheets, one complete set of shop drawings, and calculations.
3. See alarm design criteria and plan submittal requirements.

For questions regarding plan submittal please contact James Harper at 865-215-4660.

*Review for shop drawings can take up to ten (10) working days to be completed. Failure to provide all the requested information will result in unnecessary delays in the plan review process.*

### **Approval of Plans**

Installation of fire alarm devices shall not be performed until shop drawings are approved. Rough-in of conduit and wiring can be performed with the understanding that any corrections to be made would be the responsibility of the fire alarm contractor.

The approved plans, specifications, calculations, and permit shall always remain on the job site. Failure to provide the approved plans or permit at the time of inspection will result in a failed inspection and cause to reschedule.

### **Testing and Service Tags**

Fire alarm system tagging is required. All fire alarms systems shall be tagged as described in this section.

After installation or service by an approved service company, an approved service tag (as required by the KCFPB) shall be completed in detail indicating all work has been performed. Then the tag should be placed in a clear pouch located on the front side of the panel in a position as to allow convenient inspection and not hamper its actuation or operation. A new tag must be placed each time service is performed. These tags must remain in the pouch for a period of five (5) years to provide a brief history of the testing and maintenance performed.

Service tags may be removed only after five (5) years, and only by an authorized employee/agent of an approved firm that has corrected the conditions and certified the service, or a representative of the KCFPB.

## **RED CRITICAL IMPAIRMENT TAG**

This tag is for KCFPB and fire department inspection use to show fire alarm system or devices are out of service. This deficiency is a serious life safety issue and liability. If there is any impairment to the system that constitute emergency impairments as defined in applicable NFPA standards, then a completed 'Red' tag shall be attached to the fire alarm panel door and any/all annunciator panels.

Major deficiencies that may constitute a "Red" tag if the primary function is impaired or the operation of equipment is in question due to lack of testing or inspection. Examples of major deficiency would include, but not limited to:

1. Audible or visual devices are not operational
2. The fire pump does not start
3. The sprinkler system is not functioning properly
4. Battery pack is not functioning
5. Over 5% of the initiating devices not functional
6. System not tested in accordance with currently adopted fire and life safety codes and 6 months overdue
7. Fire system activated (hood system, clean agent, etc.)

This tag must be completed at time of inspection in detail and placed in the plastic sleeve (recommended) attached to the front of fire alarm control panel door in front of any other tag. The tag shall indicate the servicing company, technician's name and number, date and nature of the impairment or what corrective action is necessary and shall remain attached until all conditions are corrected. The tag shall be punched, with correct month and year, to indicate the date the servicing company placed the red tag on the system.

The property owner and the KCFPB shall be notified by e-mail ([james.harper@knoxcounty.org](mailto:james.harper@knoxcounty.org)) immediately after any fire protection or life-safety equipment is red tagged.

## **YELLOW IMPAIRMENT TAG**

This tag is for KCFPB and fire department inspection use to show a fire alarm system or equipment is found not in compliance with applicable NFPA standards or manufacturer's guidelines, but the system is functional.

This tag must be completed during inspection in detail and placed in the plastic sleeve (recommended) attached to the front of fire alarm control panel door in front of any other tag. The tag shall indicate the servicing company, technician's name and number, date and nature of the impairment or what corrective action is necessary and shall remain attached until all conditions are corrected. The tag shall be punched, with correct month and year, to indicate the date the servicing company placed the red tag on the system.

The property owner shall be notified of the placement of a yellow tag immediately. The KCFPB shall be notified by the servicing company's monthly report emailed to [james.harper@knoxcounty.org](mailto:james.harper@knoxcounty.org) .

## **GREEN TAG**

This tag is for KCFPB and fire department inspection use for verifying qualified and licensed alarm contractors are properly inspecting and testing the fire alarm system according to NFPA 72.

This tag must be completed at each inspection period and placed in the plastic sleeve (recommended) attached to the front of fire alarm control panel door. The tag shall be kept current and marked by the fire alarm inspection technician at each time of the NFPA 72 required inspection schedule.

The tag shall be punched, with correct month and year, to indicate whether the system is current on its inspection and has been tested in accordance with NFPA 72.

The tag shall be filled in with the servicing company and company license number, technician's name and certification number and approving inspector's signature. The inspected fire alarm system shall be marked based on the test results of passing, witnessed by the KCFPB. A NFPA 72 inspection form shall also be completed and given to owner.

## **Testing and Maintenance Requirements**

The goal of the inspection, testing, and maintenance requirements is to provide for an acceptable level of reliability for life safety by verifying that a fire alarm system is designed, installed, inspected, and serviced in compliance with codes and standards, so it will perform as required. All existing systems are required by local ordinance and NFPA 72 to have regular inspections that verify performance. There is no "grandfather" clause or automatic exclusion that exempts an existing system, required by code or not, to forego code compliance as a minimum standard for life safety.

To ensure operational integrity, the system shall have an inspection, testing, and maintenance program (NFPA 72, 14.2.2.1). The program shall satisfy the requirements of NFPA 72 and conform to the equipment manufacturer's published instructions and shall verify correct operation of the system (NFPA 72, 14.2.2.1.1).

Fire alarm impairments such as systems defects and malfunctions shall be corrected (NFPA 72, 14.2.2.2.2). If a defect or malfunction is not corrected at the conclusion of system inspection, testing, or maintenance, the system owner, and KCFPB shall be informed of the impairment in writing within 24 hours.

The building owner or occupier of tenant space or building is legally responsible for maintaining a safe building for business invitees, licensees, and even trespassers. As such, the owner is responsible for maintaining the fire alarm system by contracting with any Tennessee licensed fire alarm company for the services of an inspection, testing, and maintenance agreement.

## **Notification of systems out of service**

KCFPB shall be immediately notified by email sent to [james.harper@knoxcounty.org](mailto:james.harper@knoxcounty.org), whenever a

required fire protection or life safety system is placed out of service for emergency or non-scheduled repairs, replacement, or service extending over four (4) hours. The KCFPB shall again be notified when the system is restored to normal operational status. The KCFPB ([james.harper@knoxcounty.org](mailto:james.harper@knoxcounty.org)) shall be notified, by e-mail, not less than seven (7) business days prior to any lengthy routine or scheduled repairs, or replacement time period. Certification and documentation of repairs and operational readiness of the system shall be provided to the fire code official upon request. No fire protection or life safety equipment or system required by the Life Safety Code or IBC shall be placed permanently out of service unless prior written approval is obtained from the Fire Marshal.