



Rutherford County Fire-Rescue Department
Division of Fire Prevention - Fire Marshal's Office
2785 Barfield Road
Murfreesboro, Tennessee 37128
(615) 907-3600 Ext. 1



CONSTRUCTION PERMITS

105.7.7- Fire Alarm and Detection Systems

Permit Fee- \$150

Permit Period- 1 Year

Where Required

In accordance with Rutherford County's enacted permitting requirements. A construction permit is required for the installation of or modification to fire alarm and detection systems and related equipment. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

Permit Application

- Must be submitted online (<https://cityworks.rutherfordcountyttn.gov/PublicAccess>)
- No work may be performed until plans have been reviewed and approved.
- Inspections are required for all permits.

Plan Review Submittal Requirements

1. Completed permit application signed by licensed alarm contractor.
2. Scope of work to be performed.
3. Type of system to be installed.
4. Detailed system plans (signed and sealed) shall include:
 - a. Type and number of all devices to be installed.
 - b. Square footage of the building indicated on the plans.
 - c. Cut sheets for all components to be installed.

***Installation/Inspection Records are required to be submitted to The Compliance Engine**

- d. Specific details regarding the monitoring of the system including type of transmission means and name/location of receiving station.
- e. All wiring information shown on the plans including size, type, and all point-to-point wire runs.
- f. Complete battery calculations that clearly note the battery size to be provided.
- g. Voltage drop calculation for notification devices shall be provided.
- h. Letter of design certification indicating that the system design as submitted meet all local requirements and standards set forth by NFPA.

Required Inspections

1. Fire Alarm Rough-in

- a. Verify the following:
 - i. Proper wiring being used
 - ii. Proper wire gauge
 - iii. Verify support of all conduit and boxes, including protective bushings in conduit
 - iv. Verify support of all wiring is per NFPA 72 and National Electric Code (NEC)
 - v. Verify location all fire alarm system devices
 - vi. Verify location of fire alarm control panel
 - vii. Verify location of remote annunciator panel(s)
 - viii. Verify proper separation of wiring. (A minimum of four feet separation on horizontal runs and one-foot separation on vertical runs shall be provided.)
- b. Verify that fire alarm wiring has not been painted or damaged during installation
- c. Duct Detectors (required in units that exceed 2000 cfm or units that share an area that exceeds 2000 cfm collectively) shall provide the following:
 - i. Unit shut down on activation of the duct detector.
 - ii. On activation of the duct detector a fire alarm signal shall be sent to the fire alarm control panel.

***Installation/Inspection Records are required to be submitted to The Compliance Engine**

- iii. A ceiling remote annunciator shall be installed with a LED at ceiling level that will light up when the duct detector is activated.
- iv. All devices shall be marked with their appropriate address at the FACP.
- d. Verify hood suppression system wiring has been installed from kitchen exhaust hood system to FACP (where applicable).

2. Fire Alarm System Final and Acceptance

- a. Verify the proper location and type of all fire alarm devices.
- b. Observe fire alarm system functional tests of all alarm devices, including duct detectors.
- c. Observe activation of the fire alarm notification devices, including electric bell on fire sprinkler system water flow (via inspector's test valve). Alarms shall activate within 90 seconds of full flow.
- d. Observe action tests of fire sprinkler control valves. ON activation of a tamper switch, a supervisory signal (audible and visible) shall be indicated at the FACP.
- e. Observe activation of notification appliances upon activation of kitchen hood suppression system.
- f. Verify the following during the tests:
 - i. Decibel reading of notification appliances shall be 15dB above ambient noise level.
 - ii. Verify proper size batteries installed
 - iii. Verify duct detectors provide the following:
 - iv. Unit shut down on activation of the duct detector.
 - v. On activation of the duct detector a fire alarm signal shall be sent to the fire alarm control panel.
 - vi. A ceiling remote annunciator shall be installed with a LED at ceiling level that will light up when the duct detector is activated.
 - vii. All devices shall be marked with their appropriate address at the FACP.
 - viii. Observe a 24-hour battery standby test. Electrical breaker that provides power to the FACP shall be shut off for 24 hours prior to the fire alarm test. At the end of the 24 hours, an audible

***Installation/Inspection Records are required to be submitted to The Compliance Engine**

- ix. alarm shall be allowed to sound for at least 5 minutes. Also verify that electrical breaker is indicated as FACP, marked in red, and serves no other circuits.
 - x. Verify that all signals are received at the FACP.
 - xi. Verify that all signals are received at the remote annunciator panels.
 - xii. Verify that all signals were received at the off-site monitoring agency.
 - xiii. Monitoring report shall be e-mailed to Fire Marshal's Office at fireprevention@rutherfordcountyttn.gov after completion of final testing.
- g. Fire Alarm Zone maps shall be located at each FACP and remote annunciator if these panels are not fully addressable. Maps shall include:
- i. Floor plan of the occupancy being protected.
 - ii. All detection device locations
 - iii. Indicate type of detection device
 - iv. "Address" or zone of the detection device
 - v. The map shall be properly mounted to the wall and measures shall be taken to protect the map from physical damage or vandalism.

***Installation/Inspection Records are required to be submitted to The Compliance Engine**