



# Athens-Clarke County Fire & Emergency Services



## 5.1.2. Fire Alarm System Acceptance Test Checklist

### General

This document is intended to inform contractors about the expectations and procedures for conducting an acceptance test of a fire alarm system by the Athens-Clarke County Fire Marshal's Office. It outlines the guidelines for this process and addresses the most common aspects of fire alarm acceptance tests. However, in cases where this document does not cover a specific device or operation related to the fire alarm system, it refers to the IFC (International Fire Code), NFPA (National Fire Protection Association) standards, and/or the manufacturer's specifications for determining the testing criteria.

In summary, the document serves as a reference and guide for contractors to understand how the Fire Marshal's Office will evaluate and approve a fire alarm system, and it directs them to established industry standards and manufacturer specifications when specific testing criteria are not outlined in the document.

Step 1: Preparation	Pass	Fail	N/A
1. Schedule Inspection - The contractor shall call (706) 613-3365 to schedule the inspection. An inspection will be scheduled for the next available appointment. <b>IMPORTANT</b> – the Fire Alarm System cannot be finalized until the building department has finalized the associated electrical permit.			
2. <b>Approved Plans</b> - Approved/Stamped set of plans showing how the system was installed.			
3. <b>Cut Sheets</b> - Manufacturer cut sheets indicating the proper method of testing for smoke and heat detectors.			
4. <b>Pretest</b> – Print out a pretest showing all devices have been tested and how each device annunciates at the FACP.			
5. <b>NFPA 72 Report</b> - NFPA 72 Record of Completion (not req'd for flow/tamper systems).			

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Step 1: Preparation Continued	Pass	Fail	N/A
6. <b>24-hour Battery Test</b> - At the time of the inspection/test, provide proof verifying that the panel has been operating on secondary power (battery) for 24 hours. No other problems shall be indicated on the panel.			
<b>Tools, Equipment, and Personnel:</b>			
7. <b>Staffing</b> - A minimum of two fire alarm contractors with 2 two-way radios.			
8. <b>Contractors</b> - The following contractors may need to be present during the acceptance test depending on the systems provided in the building: sprinkler contractor, mechanical contractor, elevator contractor, general contractor, and special suppression system contractor.			
9. <b>Ladder</b> - A ladder shall be provided to gain access to devices for testing.			
10. <b>Smoke/Aerosol Tester</b> - Smoke detectors will be tested in place using a Smoke Detector Tester Aerosol Dispenser with a Telescoping Pole to ensure smoke entry into the sensing chamber and an alarm response. No magnets will be allowed.			
11. <b>Laptop</b> - Laptop with appropriate software to make program changes if necessary.			
12. <b>Manufacturer's Testing</b> - Any equipment required by the manufacturer's published testing instructions.			
<b>Step 2: Signage and Markings</b>			
1. <b>FACP Room</b> - An approved sign shall be posted on the door to the room containing the FACP. The sign shall be constructed of durable materials, permanently installed, readily visible, and have a red background and white lettering that reads "FIRE ALARM CONTROL PANEL INSIDE" or "FIRE ALARM ROOM" or "FACP ROOM" or similar language.			

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Step 2: Signage and Markings Continued	Pass	Fail	N/A
2. <b>Contact Information</b> - An approved sign shall be posted at the control panel and states the name of the monitoring company and the 24-hour phone number of the Central Station. It shall also state that the Central Station shall be called before doing any work or testing on any system being monitored.			
3. <b>Instructions</b> - Reset instructions and reset code shall be clearly posted at the FACP			
4. <b>Floor Plan</b> - A laminated floor plan (11"x17" minimum) for each building floor shall be posted adjacent to the FACP in the Fire Control Room. It shall indicate the location of all initiating devices, inspector's test valve, monitored valves and main corridors, stairwells, and elevators.			
5. <b>Dedicated Circuit</b> - The fire alarm control panel shall be on its own dedicated circuit that is labeled FACP, red in color, and locked in the ON position.			
6. <b>J-Boxes</b> - It is required that all fire alarm J-boxes are painted red or labeled FIRE ALARM.			
7. <b>Documentation Cabinet</b> - A documentation cabinet labeled "SYSTEM RECORD DOCUMENTS" shall be installed at the system control unit or at another approved location accessible only to authorized personnel.			

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Step 3: Maximum Load Test – Secondary Power	Pass	Fail	N/A
1. <b>Manual Fire Alarm box</b> - While on battery power, initiate an Alarm by pulling the manual fire alarm box located at the FACP.			
2. <b>90 Second Alarm Signal</b> - Verify that the remote Central Station has received a fire alarm signal within ninety (90) seconds. Let the alarm continue during the next step.			
3. <b>5 - 15 Minute Test</b> - Let the alarm continue for a minimum of 5 minutes for general occupant notification and 15 minutes for voice Evacuation. This will give enough time to verify the operation of all notification appliances throughout the facility.			
<b>Audible Alarm Notification Appliances</b>			
4. <b>Per Plans</b> - Verify annunciators are installed per approved plans			
5. <b>Audible Sound</b> - Audible alarm devices must be 15 dBA above normal ambient sound level in all occupiable areas of the building and a minimum of 75 dBA at pillow level.			
6. <b>Signal Pattern</b> - The audible signal pattern used to notify building occupants of the need to evacuate shall be the standard alarm evacuation signal consisting of a three-pulse temporal pattern.			
7. <b>Mounting</b> - Wall-mounted appliances shall have their tops above the finished floor at heights of not less than 90 inches and below the finished ceilings at distances of not less than 6 inches. Ceiling-mounted or recessed appliances shall be permitted.			
8. <b>Combination Audible/Visible</b> - Combination audible/visible appliances shall be installed as per the requirements for a visible alarm notification appliance.			
9. <b>Environment</b> - Verify that all appliances are listed for the environment in which they are located. (walk-in coolers/freezers, etc.)			
10. <b>Guards/Cover/ Lenses</b> - Appliances subject to mechanical damage shall be suitably protected by a guard, cover, or lenses that is listed for use with the appliance.			

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Step 3: Maximum Load Test – Secondary Power Continued	Pass	Fail	N/A
<b>Visible Alarm Notification Appliances</b>			
<b>11. Flashing Notifications</b> - Indoor strobes must flash 60-120 times/minute, and in spaces such as corridors where more than two visible notification appliances are in any field of view, they shall flash in synchronization.			
<b>12. Lights</b> - Lights used for fire alarm signaling only or to signal the intent for complete evacuation shall be clear or nominal white.			
<b>13. Wall Mount</b> - Wall-mounted appliances shall be mounted such that the entire lens is not less than 80 inches and not greater than 96 inches above the finished floor.			
<b>14. Ceiling Mount</b> - Ceiling-mounted appliances shall be permitted. If ceiling heights exceed 30 feet, ceiling-mounted visible notification appliances shall be suspended at or below 30 feet or at the mounting height of wall-mounted visible notification appliances.			
<b>15. Environment</b> - Verify that all appliances are listed for the environment in which they are located. (walk-in coolers/freezers, etc.)			
<b>16. Step 4: Power Supplies &amp; Trouble Signals</b>			
<b>Reset</b> - Once all notification appliances have been verified and the minimum alarm time has elapsed, silence the signal and ensure horns and strobes cease.			
<b>1. Clear Panel</b> - Have primary power turned back on and verify that the panel has been cleared.			
<b>2. Battery Lead</b> - Unplug one battery lead; the panel shall indicate a trouble within 200 seconds.			
<b>3. Battery Date</b> - Also, ensure the battery manufacture date is written on the batteries.			
<b>4. Batterie Size</b> - Compare the calculated size of batteries in the submittal to the actual batteries installed.			
<b>5. Ground Fault</b> - Have the installer create a ground fault on the system to ensure that the trouble condition and ground fault are annunciated on the FACP.			
<b>6. DACT</b> - Have the alarm technician disconnect the primary line from the DACT to confirm a trouble signal on-site and transmission of a trouble signal to the supervision station within 4 minutes. Repeat this process with the secondary line.			

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Step 4: Power Supplies & Trouble Signals Continued	Pass	Fail	N/A
7. <b>Notification Appliance</b> - Remove a wire from a notification appliance. The system shall go into trouble at the FACP within 200 seconds.			
8. <b>Smoke Detector</b> - Remove a smoke detector from its base and ensure trouble is shown on the panel within 200 seconds.			
9. <b>Remote Annunciator</b> - If a remote alarm annunciator is provided, verify operations and that the correct information is being received.			
Step 5: Fire Suppression System			
<b>Fire Sprinkler System</b>			
1. <b>Contractors</b> - All sprinkler devices shall be tested with both the sprinkler and fire alarm contractors present.			
2. <b>Flow Test</b> - Test the water flow alarm by flowing water from the Inspectors Test Valve. The alarm should sound no earlier than 30 seconds and no later than 90 seconds. (Wet and dry systems)			
3. <b>Dry-Type Sprinkler Systems</b> – Have the constrictor demonstrate that both high and low air pressure are supervised as required. The off-normal signal shall be initiated when the pressure increases or decreases by ten psi.			
4. <b>Exterior Horn/Strobe</b> - Verify that a listed horn/strobe device is located on the front exterior of the building in an approved location in close proximity to the building address. The water flow actuation of the automatic sprinkler system shall activate such a device.			
5. <b>Control Valves</b> - Close all electrically supervised sprinkler control valves to verify the supervisory alarm at the FACP within 2 turns of the control wheel or, for the Post Indicator Valve (PIV) within 1/5 of valve control mechanism's travel distance. Then reopen to verify "restore" signal.			
<b>Fire Pump</b>			
6. <b>Pump Running</b> - Verify that when the fire pump is running the fire alarm goes into alarm.			
7. <b>Control Valves</b> - Close all electrically supervised fire pump control valves to verify supervisory signal at the FACP.			

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Step 5: Fire Suppression System Continued	Pass	Fail	N/A
<b>Other Suppression Systems</b>			
<b>8. Type 1 Commercial Kitchen System</b> - shall initiate an alarm signal by alarm-initiating devices installed in accordance with their individual listings.			
<b>9. Pre-Action Suppression System</b> – If installed and if it has an independent control panel, it will require a separate NFPA 72 certificate from the building FACP.			
<b>10. Clean Agent Suppression System</b> – If installed and if it has an independent control panel, it will require a separate NFPA 72 certificate from the building FACP.			
<b>Step 6: Elevators</b>			
<b>1. Elevator Technician</b> - The elevator technician must be on site for the following test to take place.			
<b>2. FACP</b> - Actuation from the elevator hoistway, elevator machine room, elevator machinery space, elevator control space, or elevator control room smoke detectors, or other automatic fire detection shall cause a separate and distinct visible annunciation at the building FACP and remote annunciators to alert firefighters that the elevators are no longer safe to use.			
<b>3. Recall</b> - Test detector(s) located at the elevator lobby that will initiate elevator recall: (Elevator lobby detectors must be within 21 feet of each elevator door.) <ul style="list-style-type: none"><li>• Verify recall to a primary floor</li><li>• Verify recall to alternate floor</li><li>• Verify illumination of “Fire Hat”</li></ul>			
<b>4. Machine Room Detector</b> - Test detector(s) located in shaft & elevator machine room: <ul style="list-style-type: none"><li>• Verify recall to the designated floor</li><li>• Verify flashing illumination of “Fire Hat”</li></ul>			
<b>5. Heat Detectors</b> - Heat Detectors installed in a shaft or machine room and used for shunt trip (shut down elevator power) activation shall be located within 2 feet of each sprinkler head and have both a lower temperature rating and a higher sensitivity as compared to the sprinkler.			

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Step 7: Initiation Devices	Pass	Fail	N/A
1. <b>FACP</b> - Test individual devices to ensure proper operations and annunciation at the panel with the correct device location.			
<b>Smoke Detectors</b>			
2. <b>Sample Test</b> - The fire inspector will select a sample of Smoke Detectors at random to be tested by using smoke or a listed aerosol. ( <u>Minimum of one per floor, and no less than 10% of the devices shall be tested</u> )			
3. <b>Trouble</b> - The fire inspector will select a minimum of one smoke detector at random to be disconnected to verify a trouble signal is received at the FACP.			
4. <b>Addressable</b> - All smoke detectors are addressable models.			
5. <b>Wall Mount</b> - Wall-mounted smoke detectors must be installed between 4 and 12 inches from the ceiling measured to the nearest edge of the detector.			
6. <b>Ceiling Mount</b> - Ceiling-mounted smoke detectors shall be at least 4 inches from a wall or ceiling obstruction.			
7. <b>Supply/Return Air Diffuser</b> - Smoke detectors shall not be located within 3 feet of a supply or return air diffuser, nor in a strong air stream from a supply diffuser at any distance.			
8. <b>Listings</b> - All smoke detectors shall be located in conditioned space or be listed for non-conditioned spaces (outside, parking decks, areas with low or high temperatures).			
9. <b>Dust Covers</b> - Verify all dust covers have been removed.			
<b>Duct Smoke Detectors</b>			
10. <b>Sample Test</b> - The fire inspector will select a sample of Duct Smoke Detectors at random to be tested by using smoke or a listed aerosol. <u>Minimum of one per floor and no less than 10% of the devices shall be tested.</u> (Duct Smoke Detectors shall be programmed to be a supervisory condition at the FACP.)			
11. <b>HVAC Shutdown</b> - Verify that the HVAC shutdown is operational. After the initial test and verification, it is acceptable to activate the HVAC bypass to avoid excessive restarting.			
12. <b>Close Upon Activation</b> - All remaining duct smoke detectors not tested shall be inspected to verify that they close upon activation of the fire alarm system.			

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Step 7: Initiation Devices Continued	Pass	Fail	N/A
<b>13. Access Door</b> - At each duct detector, a 12"x12" minimum access door, hinged or latched type, is provided to facilitate sampling tube inspection and cleaning. Doors shall have a label that reads: FIRE/SMOKE DAMPER, SMOKE DAMPER OR FIRE DAMPER.			
<b>14. Air Flow Decal</b> - The air flow direction is permanently indicated on the duct by stencil or decal to help ensure the sampling tubes are installed and maintained in the correct orientation.			
<b>15. Intake Tube</b> - The intake tube has its holes/slots facing into the air stream and a stopper installed to seal its far end.			
<b>Heat Detectors</b>			
<b>16. Sample Test</b> - The fire inspector will select a sample of Heat Detectors at random to be tested. ( <u>Minimum of one per floor, and no less than 10% of the devices shall be tested</u> )			
<b>17. Manufacture Specification</b> - It is important to follow the manufacturer's specification on the correct testing of the device. (Incorrect testing can damage devices)			
<b>Manual Fire Alarm Box (Pull Stations)</b>			
<b>18. 100% Activation</b> - 100% of the Manual Fire Alarm Box (Pull Stations) provided shall be tested by physical activation.			
<b>19. Location</b> - Manual fire alarm boxes shall be located as follows: <ul style="list-style-type: none"><li>• At a conspicuous, unobstructed, and assessable location.</li><li>• Within 60 inches of exit doorway openings.</li><li>• Mounted between 42 to 48 inches above the floor.</li></ul>			
<b>20. Addressable</b> - Verify that upon activation of a manual fire alarm box, the alarm signal to the main fire alarm panel is correctly addressed with an accurate description.			
<b>21. Color</b> - Manual fire alarm boxes shall be red in colors on a background of contrasting color.			
<b>22. Other Devices</b> - Combination Detector, Electrical Conductivity Heat Detector, Fire- Gas Detector, Flame Detector, Pneumatic Rate-of-Rise Tubing Heat Detector, Projected Beam-Type Detector, Radiant Energy-Sensing Fire Detector, Rate Compensation Detector, Spark/Ember Detector, Spot-Type Detector shall follow the manufactures specification on the correct testing of that device.			

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Step 8: Electrically Locking and Self Closing Doors	Pass	Fail	N/A
1. <b>Magnetic Door Hold</b> - Verify that all Magnetic Door Hold-Open Release Devices work when the system is in alarm. The doors shall close completely and latch.			
2. <b>Electrically Locked Doors</b> - Electrically locked doors that are part of the required means of egress shall comply with the following: <ul style="list-style-type: none"><li>• Unlock immediately upon loss of power.</li><li>• Unlock upon activation of the fire alarm system and remain unlocked until the fire alarm condition is manually reset.</li><li>• Unlock upon activation of the automatic sprinkler system.</li></ul>			
<b>Delayed Egress Locking System:</b>			
3. <b>Activation</b> - Verify that the delay electronics of the delayed egress locking system deactivates upon actuation of the automatic sprinkler system or automatic fire detection system, allowing immediate, free egress.			
Step 9: Area of Refuge Emergency Communication			
1. <b>100% Tested</b> - All devices associated with the Area of Refuge Emergency Communication shall be tested.			
2. <b>Operation</b> - The area of refuge station shall provide for hands-free, two-way communication, provide an audible and visible signal to indicate communication has occurred, and indicate to the receiver the location sending the signal.			
3. <b>Instructions</b> - Instructions for the use of the two-way communications system, instructions for summoning assistance via the two-way communications system, and written identification, including in braille, of the location shall be posted adjacent to the two-way communications system.			
4. <b>Response</b> - If the central control point is not constantly attended, it shall have a timed automatic communications capability to connect with a constantly attended monitoring location where responsible personnel can initiate the appropriate response.			
5. <b>Quality and Clarity</b> - Verify voice quality and clarity.			

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Step 10: Emergency Radio Communications	Pass	Fail	N/A
<b>1. Emergency Radio Communications</b> - Simulate the following trouble conditions: <ul style="list-style-type: none"><li>• Signal Booster Trouble</li><li>• Antenna Failure</li><li>• Loss of Normal AC Power</li><li>• Failure of Battery Charger</li><li>• Low Battery Capacity</li></ul>			
<b>Step 11: System in Full Operation</b>			
<b>1. Normal Condition</b> - Ensure all systems are normal			
<b>2. Off of Test</b> - Ensure the Fire Alarm is off of test with the monitoring company.			
<b>3. Record of Completion</b> - Have the company complete and submit the Record of Completion.			
<b>4. Document Box</b> - Have all manuals and the program placed in the document box.			
<b>5. Knox Box</b> - Keys for the FACP and pull station(s) shall be provided so they may be placed into the Knox Box.			

*The above is not an all-inclusive list – all buildings must meet all NFPA, International Fire Code, and State of Georgia requirements. Please refer to Chapter 120-3-3, Rules and Regulations of the Safety Fire Commissioners website.*

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