

# TESTING AND INSPECTION FREQUENCIES FOR

## FIRE DETECTION AND ALARM SYSTEMS

RFI has organized the following information regarding testing frequencies for fire detection and alarm systems. All of the following information can be found in the 2016 edition of the National Fire Alarm and Signaling Code (NFPA-72). For definitions, details, and procedures, please refer to the 2016 edition of NFPA-72. The recommended test means are not intended to exclude equivalent means, such as self-diagnostic testing. Methods for testing are in accordance with NFPA 72 Table 14.4.3 Test Methods and Manufacturers' Requirements. Frequency of device testing will be in accordance with NFPA 72 Table 14.3.1 Visual Inspection Frequencies and NFPA 72 Table 14.4.3.2 Testing Frequencies. Please note that the following table summarizes the requirements of NFPA-72, some of which may not be applicable to all systems or sub-systems.

Testing requirements of NFPA-72:

- 14.3.4 Initial and reacceptance inspections shall be made to ensure compliance with approved design documents and to ensure installation in accordance with this Code and other required installation standards.
- 14.3.5 Periodic visual inspections in accordance with Table 14.3.1 shall be made to assure that there are no changes that affect equipment performance.

Table 14.3.1 Visual Inspection

Component	Initial Acceptance	Quarterly	Semi-Annually	Annually	Reference
1. All Equipment	X			X	14.3.4
2. Control Equipment – Monitored Fire Alarm Systems					
a) Fuses	X			X	
b) Interfaced equipment	X			X	
c) Lamps and LEDs	X			X	
d) Primary (main) power supply	X			X	
e) Trouble Signals	X		X		
3. Control Equipment – Unmonitored Fire Alarm Systems					
a) Fuses					
b) Interfaced equipment					
c) Lamps and LEDs					
d) Primary (main) power supply					
e) Trouble Signals					
4. Supervising station alarm systems – transmitters					
a) Digital alarm communicator transmitter (DACT)	X			X	
b) Digital alarm radio transmitter (DART)	X			X	
c) McCulloh	X			X	
d) Radio alarm transmitter (RAT)	X			X	
e) All other types of communicators	X			X	
5. In-building fire emergency voice/alarm communications equipment	X		X		
6. Batteries					10.6.10
a) Lead-acid type					
1) Charger test (replace battery as needed)	X			X	
2) Discharge test (30 minutes)	X		X		
3) Load voltage test	X		X		
4) Specific gravity	X		X		

Component	Initial Acceptance	Quarterly	Semi-Annually	Annually	Reference
b) Nickel-cadmium type					
1) Charger test (replace battery as needed)	X			X	
2) Discharge test (30 minutes)	X			X	
3) Load voltage test	X		X		
c) Primary type (dry cell)					
1) Load voltage test	X			X	
d) Sealed lead-acid type					
1) Charger test (replace battery within 5 years)	X			X	
2) Discharge test	X			X	
3) Load voltage test	X		X		
7. Remote annunciators	X		X		
8. Notification appliance circuit power extenders	X			X	10.6
9. Remote power supplies	X			X	10.6
10. Transient suppressors	X		X		
11. Fiber-optic cable connections	X			X	
12. Initiating devices					
a) Air sampling	X		X		17.7.3.6
b) Duct Detectors	X		X		17.7.5.5
c) Electromechanical releasing devices	X		X		
d) Fire extinguishing system(s) or suppression (s) switches	X		X		
e) Manual fire alarm boxes					
f) Heat detectors					
g) Radiant energy fire detectors		X			17.8
h) Video image smoke and fire detectors		X			17.7.7; 17.11.5
i) Smoke detectors (excluding one and two family dwellings)			X		
j) Projected beam smoke detectors			X		
k) Supervisory signal devices		X			
l) Waterflow devices		X			
13. Combination systems					
a) Fire extinguisher electronic monitoring device/ systems			X		
b) Carbon monoxide detectors/ systems			X		
14. Fire alarm control interface and emergency control function interface			X		
15. Guard's tour equipment	X		X		
16. Notification appliances					
a) Audible appliances	X		X		
b) Audible textual notification appliances	X		X		
c) Visible appliances					
1) General	X		X		18.5.5
2) Candela rating	X				
17. Exit marking audible notification appliances	X		X		

Table 14.4.3.2 Testing

Component	Initial Acceptance	Quarterly	Semi-Annually	Annually	Reference
1. All equipment	X				14.3.1
2. Control equipment and transponder	X			X	
a) Functions	X			X	
b) Fuses	X			X	
c) Interfaced equipment	X			X	
d) Lamps and LEDs	X			X	
e) Primary (main) power supply	X			X	
3. Fire alarm control unit and trouble signals					
a) Audible and visual	X			X	
b) Disconnect switches	X			X	
c) Ground-fault monitoring circuit	X			X	
d) Transmission of signals to off-premise location	X			X	
4. Supervising station alarm systems-transmission equipment					
a) All equipment	X			X	
b) Digital alarm communicator transmitter (DACT)	X			X	
c) Digital alarm radio transmitter (DART)	X			X	
d) McCulloh transmitter	X			X	
e) Radio alarm transmitter (RAT)	X			X	
f) Performance-based technologies	X			X	
5. Emergency communications equipment					
a) Amplifier/ tone generators	X			X	
b) Call-in signal silence	X			X	
c) Off-hook indicator (ring down)	X			X	
d) Phone jacks	X			X	
e) Phone set	X			X	
f) System performance	X			X	
6. Engine-driven generator	X				
7. Secondary (standby) power supply	X			X	
8. Uninterruptible power supply (UPS)	X			X	
9. Battery tests					
a) Lead-acid type					
1) Battery replacement	X			X	
2) Charger test	X			X	
3) Discharge test	X			X	
4) Load voltage test	X		X		
5) Specific gravity	X		X		
b) Nickel-cadmium type					
1) Battery replacement				X	
2) Charger test				X	
3) Discharge test				X	
4) Load voltage test			X		
c) Sealed lead-acid type					
1) Battery replacement				X	
2) Charger test				X	
3) Discharge test				X	
4) Load voltage test			X		
10. Public emergency alarm reporting system – wired system	X				
11. Remote annunciators	X			X	
12. Initiating devices					



a)	Electromechanical releasing device					
1)	Nonrestorable-type link				X	
	<b>Component</b>	<b>Initial Acceptance</b>	<b>Quarterly</b>	<b>Semi-Annually</b>	<b>Annually</b>	<b>Reference</b>
2)	Restorable-type link				X	
b)	Fire extinguishing system(s) or suppression system				X	
c)	Fire-gas and other detectors				X	
d)	Heat detectors					
1)	Fixed-temperature, rate of rise, rate of compensation, restorable line, spot type				X	
2)	Fixed-temperature nonrestorable line type				X	
3)	Fixed-temperature nonrestorable spot type					
4)	Nonrestorable				X	
5)	Restorable line type, pneumatic tube only				X	
6)	Single and multiple-station heat alarms	X			X	
e)	Manual fire alarm boxes	X			X	
f)	Radiant energy fire detectors	X		X		
g)	Smoke detectors – functional test					
1)	In other than one and two family dwellings, system detectors	X			X	
2)	Single and multiple station smoke alarms connected to protected premises systems				X	
3)	System smoke detectors used in one and two family dwellings				X	
4)	Air sampling				X	
5)	Duct type				X	
6)	Projected beam type				X	
7)	Smoke detector with built-in thermal element				X	
8)	Smoke detectors which control output functions				X	
h)	Smoke detectors – sensitivity testing					14.4.4.3
i)	Carbon monoxide detectors/ carbon monoxide alarms for the purposes of fire detection				X	
j)	Initiating devices, supervisory					
1)	Control valve switch			X		
2)	High or low-air pressure switch				X	
3)	Room temperature switch				X	
4)	Water level switch				X	
5)	Water temperature switch				X	
k)	Mechanical, electrosonic, or pressure-type waterflow device			X		
l)	Multi-sensor fire detector or multi-criteria fire detector or combination fire detector				X	
13.	Special hazard equipment					
a)	Abort switch (dead-man type)				X	
b)	Abort switch (recycle type)				X	
c)	Abort switch (special type)				X	
d)	Cross-zone detection circuit				X	
e)	Matrix-type circuit				X	
f)	Release solenoid circuit				X	
g)	Squibb release circuit				X	
h)	Verified, sequential, or counting zone circuit				X	
i)	All above devices or circuits or combinations thereof				X	
14.	Combination systems					
a)	Fire extinguisher electronic monitoring device/system				X	
b)	Carbon monoxide device/system				X	
15.	Interface equipment	X				14.4.4.4
16.	Guard's tour equipment	X			X	

17. Alarm notification appliances					
a) Audible	X			X	
b) Audible textual notification appliances	X			X	
<b>Component</b>	<b>Initial Acceptance</b>	<b>Quarterly</b>	<b>Semi-Annually</b>	<b>Annually</b>	<b>Reference</b>
c) Visible	X			X	
18. Exit marking audible notification appliance	X			X	
19. Emergency control functions	X			X	
20. Area of refuge two-way communication system	X			X	
21. Special procedures					
a) Alarm verification	X			X	
b) Multiplex systems	X			X	
22. Supervising station alarm systems – receiving equipment					
a) All Equipment	X				
b) Digital alarm communicator receiver (DACR)	X				
c) Digital alarm radio receiver (DARR)	X				
d) McCulloh systems	X				
e) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X				
f) Private microwave radio systems	X				
g) Performance-based technologies	X				
23. Public emergency alarm reporting system transmission equipment					
a) Publicly accessible alarm box			X		
b) Auxiliary box				X	
c) Master box					
1) Manual operation			X		
2) Auxiliary operation				X	
24. Low-power radio (wireless systems)					
25. Mass notification systems					
a) Functions				X	
b) Fuses				X	
c) Interfaced equipment				X	
d) Lamps and LEDs				X	
e) Primary (main) power supply				X	
f) Audible textual notification appliances				X	
g) Visible				X	
h) Control unit functions and no diagnostic failures are indicated				X	
i) Control unit reset				X	
j) Control unit security				X	
k) Audible/visible functional test				X	
l) Software backup				X	
m) Secondary power test				X	
n) Wireless signals				X	
o) Antenna				X	
p) Transceivers				X	