

# **FIRE ALARM SYSTEM GUIDELINES**



<b>FAS</b>	<b>FIRE ALARM SYSTEM</b>	
<b>G1</b>	<b>ANNEX_FAS GUIDELINES</b>	<b>Revisions_2021</b>
<b>Item</b>	<b>Provisions</b>	<b>Notes</b>
<b>1.0</b>	<b>Fire alarm systems shall be provided for buildings and structure that provide public access as applicable. See Guidelines for Fire Alarm System for reference.</b>	<b>Where and what required</b>
<b>2.0</b>	<b>Fire Alarm Systems shall be designed and installed in accordance with the latest edition of NFPA 72 except as clearly modified by these requirements. Where ambiguities in either these requirements of the NFPA 72 exist, it shall be the responsibility of the engineering endorsing the fire safety plans to obtain clarification from the Qatar Civil Defence.</b>	<b>NFPA 72</b>
<b>3.0</b>	<b>All fire alarm system shall have the following:</b>	<b>System Architecture</b>
3.1	Main fire alarm control unit/panel (addressable / conventional type)	
3.2	Main Indicating Mimic Panel shall use red colored Light Emitting Diode (LED) to indicate graphically the building, the floor, location and the initiating device that is in alarm; or if provided with PC based workstation, an information stating that graphic user interface (GUI) is integrated in the software/ application in lieu of the Main Indicating Mimic Panel.	
<b>4.0</b>	<b>Fire alarm control unit/panel shall be provided inside each building and located in any of the following:</b>	<b>Fire Alarm Control Panel</b>
4.1	Within a designated Fire Command Center	
4.2	In the ground floor level at main entrance/reception lobby	
4.3	In a continuous attended location where above mentioned are not available.	
<b>5.0</b>	<b>Zone Chart shall clearly depict the location of all fire zones, the type and location of all initiating devices with labels on that floor with a "YOU ARE HERE" indication and shall be provided on each floor of every building located within the firefighting lobby and smoke-stop lobby or common lobby in close proximity to the exit staircase.</b>	<b>Zone Chart</b>



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6.0	<b>Detector Coverage shall comply with NFPA 72 &amp; NFPA 101. REQUIRED Where building requires total (complete) detection coverage w/c includes inaccessible areas that are constructed of or contain combustible material, unless otherwise specified in NFPA 72: 17.5.3.1.2-2019.</b> <b>Detectors shall not be required in combustible blind spaces if any of the following conditions exist: (NFPA 72: 17.5.3-2019)</b>	<b>Detectors</b>
6.1	Where the ceiling is attached directly to the underside of the supporting beams of a combustible roof or floor deck.	
6.2	Where the concealed space is entirely filled with a noncombustible insulation. (In solid joist construction, the insulation shall be required to fill only the space from the ceiling to the bottom edge of the joist of the roof or floor deck.)	
6.3	Where there are small concealed spaces over rooms, provided that any space in question does not exceed 50 ft <sup>2</sup> (4.6 m <sup>2</sup> ) in area.	
6.4	In spaces formed by sets of facing studs or solid joists in walls, floors, or ceilings, where the distance between the facing studs or solid joists is less than 6 in. (150 mm).	
	Exemption: Void space less than or equal to 400mm in depth/height shall not require detection.	
7.0	<b>Manual call points shall be located within 1.5M of each fire exit. The initiating device shall be located such that no part of any floor is further than 30M from the nearest manual call point.</b>	<b>Manual Call Point</b>
8.0	<b>Fire alarm wiring shall be in accordance with the latest edition of NFPA 70 &amp; 72. Where fire alarm wires are exposed and subject to possible damage from normal use of the occupancy, they shall be provided with mechanical protection.</b>	<b>Fire Alarm Cables</b>
9.0	<b>Power Supplies:</b>	<b>Primary Power Supply</b>
9.1	Primary Power Supply shall be an alternating current (AC) supply from an authorized electricity provided and shall be exclusive to the alarm system.	
9.1.1	The primary power supply should be from the building emergency mains supply if such supply is available.	
9.1.2	The primary power supply shall be direct from the electrical distribution board and the circuit shall not be used for any other purpose.	
9.1.3	The protective isolating device controlling this circuit shall be clearly labeled to indicate that it controls the fire alarm system.	



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9.1.4	It shall terminate inside the fire alarm panel or its integral power supply unit. No external intermediary switch shall be provided between the protective isolation device at the electrical distribution board and the fire alarm panel/integral power supply unit.	
9.2	Secondary Power supply shall be in the form of the following:	Secondary power Supply
9.2.1	Storage batteries, with an automatic charge. It shall be capable of operating the alarm system in the event of failure of the primary power supply and vice versa.	
9.2.2	Emergency Power Supply System (EPSS), if provided, shall be compliant to the latest edition of NFPA 70, 72 and 110 complete with power line diagram to show the automatic transfer switch.	
9.3	A fault warning shall be given in the event of failure of either primary or secondary power supply	Fault Indication
9.4	A battery charger of appropriate type and rating shall be provided to keep the storage batteries under constant voltage charge.	Fire Alarm Cables
9.4.1	The charger shall incorporate automatic control features with output designed to charge and maintain the batteries within the limits specified by the battery manufacturer, taking into account any quiescent load imposed by the associated system.	
9.4.2	The charger shall be designed and rated to so that a battery discharged to its final voltage can be recharged to at least 80% of its rated capacity within 24 hours and its rated capacity within another 48 hours.	

