

2	FIRE DETECTION AND ALARM SYSTEM	2
2.1	GENERAL	2
2.1.1	Scope.....	2
2.1.2	References	2
2.1.3	Fire Detection and Alarm System.....	6
2.1.4	Authority Having Jurisdiction.....	6
2.1.5	Company Registration.....	6
2.1.6	Engineer Registration.....	7
2.1.7	Contractor's Responsibility	7
2.1.8	Quality Assurance.....	7
2.1.9	Plan Review	7
2.2	PRODUCTS	7
2.2.1	Product Approval	7
2.2.2	Control Unit.....	8
2.2.3	Control Unit Accessories	8
2.2.4	Power Supplies	8
2.2.5	Initiating Devices.....	8
2.2.6	Notification Devices	9
2.2.8	Fire Rated Cables	11
2.2.10	Other / Advance Fire Detection and Alarm System	12
2.3	INSPECTION, TESTING, COMMISSIONING & MAINTENANCE	13

ARAB ENCLERPIW BUR

2 FIRE DETECTION AND ALARM SYSTEM

2.1 GENERAL

2.1.1 Scope

- 1 This Section specifies the minimum requirements of construction, material, installation, testing and commissioning for Fire Detection and Alarm System.

2.1.2 References

- 1 All supplies and services offered in response to this specification shall conform to the latest local regulations, codes and standards subject to the approval of The General Directorate of Civil Defence (Qatar Civil Defence).
- 2 The following Qatar Civil Defence (QCD) Guidelines and Regulations (latest editions) are referred to in this Section:

Qatar Civil Defence - Fire and Life Safety Requirements (latest edition approved by QCD)

Qatar Civil Defence - General Fire Safety Requirement – Guideline Annexes (latest edition approved by QCD)

Qatar Civil Defence - Product Evaluation, Company & Engineers Registration Guidelines (latest edition approved by QCD)

Qatar Civil Defence - Currently Recognized Product Certification Bodies and Testing Laboratories (latest edition approved by QCD)

Qatar Civil Defence – Acceptance Inspection & Testing (latest edition approved by QCD)

Qatar Civil Defence – Inspection, Testing and Maintenance Guidelines M&E (latest edition approved by QCD)

- 3 Other NFPA Codes/Standards and other International Codes/Standards are subject to QCD technical review, evaluation and final approval.

NFPA Codes and Standards

NFPA 1	Fire Code
NFPA 3	Standard for Commissioning of Fire Protection and Life Safety Systems
NFPA 4	Standard for Integrated Fire Protection and Life Safety System Testing
NFPA 70	National Electrical Code
NFPA 72	National Fire Alarm and Signaling Code
NFPA 101	Life Safety Code
ANSI/UL 38	UL Standard for Safety Manual Signaling Boxes for Fire Alarm Systems
ANSI/UL 217	UL Standard for Safety Smoke Alarms
ANSI/UL 268	UL Standard for Smoke Detectors for Fire Alarm Systems
ANSI/UL 268A	UL Standard for Smoke Detectors for Duct Application
ANSI/UL 484	UL Standard for Safety Room Air Conditioners
ANSI/UL 521	UL Standard for Safety Heat Detectors for Fire Protective Signaling Systems

ANSI/UL 864	UL Standard for Standard for Safety for Control Units and Accessories for Fire Alarm Systems
ANSI/UL 1424	UL Standard for Safety Cables for Power-Limited Fire-Alarm Circuits
ANSI/UL 1480	UL Standard for Safety Speakers for Fire Alarm and Signaling Systems, Including Accessories
ANSI/UL 1971	UL Standard for Safety Signaling Devices for the Hearing Impaired
ANSI/UL 2572	UL Standard for Safety Mass Notification Systems
BS 5446-2	Fire detection and fire alarm devices for dwellings - Specification for heat alarms
BS 5446-3	Fire detection and fire alarm devices for dwellings - Specification for smoke alarm kits for deaf and hard of hearing people (Detection and alarm devices for dwellings - Specification for fire alarm and carbon monoxide alarm systems for deaf and hard of hearing people)
BS 5839-1	Fire detection and alarm systems for buildings - Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises
BS 6387	Test method for resistance to fire of cables required to maintain circuit integrity under fire conditions
BS 7629-1	Electric cables. Specification for 300/500 V fire resistant, screened, fixed installation cables having low emission of smoke and corrosive gases when affected by fire - Multicore cables
BS 7846	Electric cables. Thermosetting insulated, armoured, fire-resistant cables of rated voltage 600/1 000 V for fixed installations, having low emission of smoke and corrosive gases when affected by fire. Specification
BS 8434-2	Methods of test for assessment of the fire integrity of electric cables - Test for unprotected small cables for use in emergency circuits. BS EN 50200 with a 930° flame and with water spray
BS 8491	Method for assessment of fire integrity of large diameter power cables for use as components for smoke and heat control systems and certain other active fire safety systems
BS 8519	Selection and installation of fire-resistant power and control cable systems for life safety, fire-fighting and other critical applications. Code of practice
CSA C22.2	General requirements — Canadian Electrical Code, Part II
EN 54-2	Fire detection and fire alarm systems - Part 2: Control and indicating equipment
EN 54-3	Fire detection and fire alarm systems - Part 3: Fire alarm devices - Sounders
EN 54-4	Fire detection and fire alarm systems - Part 4: Power supply equipment
EN 54-5	Fire detection and fire alarm systems - Part 5: Heat detectors - Point heat detectors
EN 54-7	Fire detection and fire alarm systems - Part 7: Smoke detectors - Point smoke detectors that operate using scattered light, transmitted light or ionization
EN 54-10	Fire detection and fire alarm systems - Part 10: Flame detectors - Point detectors
EN 54-11	Fire detection and fire alarm systems - Part 11: Manual call points
EN 54-16	Fire detection and fire alarm systems - Part 16: Voice alarm control and indicating equipment
EN 54-17	Fire detection and fire alarm systems - Part 17: Short-circuit isolators

QCS 2024	Section Part	23: Fire Protection and Life Safety Systems 02: Fire Detection and Alarm System	Page 4
	EN 54-18	Fire detection and fire alarm systems - Part 18: Input/output devices	
	EN 54-20	Fire detection and fire alarm systems - Part 20: Aspirating smoke detectors	
	EN 54-22	Fire detection and fire alarm systems - Part 22: Resettable line-type heat detectors	
	EN 54-23	Fire detection and fire alarm systems - Part 23: Fire alarm devices - Visual alarm devices	
	EN 54-24	Fire detection and fire alarm systems - Part 24: Components of voice alarm systems – Loudspeakers	
	EN 54-25	Fire detection and fire alarm systems - Part 25: Components using radio links	
	EN 54-26	Fire detection and fire alarm systems - Part 26: Carbon monoxide detectors - Point detectors	
	EN 54-27	Fire detection and fire alarms systems - Part 27: Duct smoke detectors	
	EN 54-28	Fire detection and fire alarm system - Part 28: Non-resettable line-type heat detectors	
	EN 54-29	Fire detection and fire alarm systems - Part 29: Multi-sensor fire detectors - Point detectors using a combination of smoke and heat sensors	
	EN 54-30	Fire detection and fire alarm systems - Part 30: Multi-sensor fire detectors - Point detectors using a combination of carbon monoxide and heat sensors	
	EN 54-31	Fire detection and fire alarm systems - Part 31: Multi-sensor fire detectors - Point detectors using a combination of smoke, carbon monoxide and optionally heat sensors	
	EN 45544-1	Workplace atmospheres - Electrical apparatus used for the direct detection and direct concentration measurement of toxic gases and vapours - Part 1: General requirements and test methods	
	EN 45544-2	Workplace atmospheres - Electrical apparatus used for the direct detection and direct concentration measurement of toxic gases and vapours - Part 2: Performance requirements for apparatus used for exposure measurement	
	EN 45544-3	Workplace atmospheres - Electrical apparatus used for the direct detection and direct concentration measurement of toxic gases and vapours - Part 3: Performance requirements for apparatus used for general gas detection	
	EN 14604	Smoke alarm devices	
	EN 50104	Electrical equipment for the detection and measurement of oxygen - Performance requirements and test methods	
	EN 50194-1	Electrical apparatus for the detection of combustible gases in domestic premises - Part 1: Test methods and performance requirements	
	EN 50194-2	Electrical apparatus for the detection of combustible gases in domestic premises - Part 2: Electrical apparatus for continuous operation in a fixed installation in recreational vehicles and similar premises - Additional test methods and performance requirements	
	EN 50200	Method of test for resistance to fire of unprotected small cables for use in emergency circuits	
	EN 50267-2-1	Common test methods for cables under fire conditions - Tests on gases evolved during combustion of materials from cables - Part 2-1: Procedures - Determination of the amount of halogen acid gas	
	EN 50291-1	Gas detectors - Electrical apparatus for the detection of carbon monoxide in domestic premises - Part 1: Test methods and performance requirements	
	EN 50291-2	Electrical apparatus for the detection of carbon monoxide in domestic premises - Part 2: Electrical apparatus for continuous operation in a fixed installation in recreational vehicles and similar premises including recreational craft - Additional test methods and performance requirements	

EN 50267-2-3	Common test methods for cables under fire conditions - Tests on gases evolved during combustion of materials from cables - Part 2-3: Procedures - Determination of degree of acidity of gases for cables by determination of the weighted average of pH and conductivity
EN 60079-29-1	Explosive atmospheres - Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases
EN 60079-29-4	Explosive atmospheres - Part 29-4: Gas detectors - Performance requirements of open path detectors for flammable gases
EN 60332-3	Tests on electric and optical fibre cables under fire conditions - Part 3: Test for vertical flame spread of vertically-mounted bunched wires or cables; (IEC 60332-3-10 Tests on electric and optical fibre cables under fire conditions - Part 3-10: Test for vertical flame spread of vertically-mounted bunched wires or cables – Apparatus; IEC 60332-3-21 Tests on electric and optical fibre cables under fire conditions - Part 3-21: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A F/R; IEC 60332-3-22 Tests on electric and optical fibre cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A; IEC 60332-3-23 Tests on electric and optical fibre cables under fire conditions - Part 3-23: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category B; EN 60332-3-24 Tests on electric and optical fibre cables under fire conditions - Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category C; IEC 60332-3-25 Tests on electric and optical fibre cables under fire conditions - Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D)
EN 60702-1	Mineral insulated cables and their terminations with a rated voltage not exceeding 750 V - Part 1: Cables
EN 61034-2	Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements
FM 3010	Fire Alarm Signaling Systems
FM 3150	Audible Notification Appliances for Automatic Fire Alarm Signaling
FM 3155	Public Mode Visible Signaling Appliances for Automatic Fire Alarm Signaling
FM 3210	Heat Detectors for Automatic Fire Alarm Signaling
FM 3232	Video Image Fire Detectors for Automatic Fire Alarm Signaling
FM 3260	Radiant Energy-Sensing Fire Detectors for Automatic Fire Alarm Signaling
FM 6320	Combustible Gas Detectors
FM 6325	Open Path Detectors for Flammable Gases
FM 6340	Toxic Gas and Oxygen Depletion Detectors
IEC 60079-29-1	Explosive atmospheres - Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases
IEC 60079-29-4	Explosive atmospheres - Part 29-4: Gas detectors - Performance requirements of open path detectors for flammable gases
ISA 60079-29-1	Explosive Atmospheres – Part 29-1: Gas detectors – Performance requirements of detectors for flammable gases
ISA 92.00.01	Performance Requirements for Toxic Gas Detectors
ISA 92.04.01	Performance Requirements for Instruments Used to Detect Oxygen-Deficient/ Oxygen-Enriched Atmospheres

ISO 12239	Smoke alarms using scattered light, transmitted light or ionization
UL 268B	Outline of Investigation for Video Image Smoke Detectors
UL 1711	UL Standard for Safety Amplifiers for Fire Protective Signaling Systems
ULC S386	FLAME DETECTORS
ULC S525	STANDARD FOR AUDIBLE SIGNALING DEVICES FOR FIRE ALARM SYSTEMS
ULC S526	VISIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES
ULC S527	STANDARD FOR CONTROL UNITS FOR FIRE ALARM SYSTEMS
ULC S529	SMOKE DETECTORS FOR FIRE ALARM SYSTEMS
ULC S531	STANDARD FOR SMOKE ALARMS
ULC S541	Standard for Speakers for Fire Alarm Systems
ULC / ORD C529A	VIDEO IMAGE SMOKE DETECTION SYSTEM DEVICES

Other related NFPA Codes / Standards and other equivalent International Codes / Standards

2.1.3 Fire Detection and Alarm System

- 1 Fire Detection and Alarm System
 - (a) Control Unit
 - (b) Control Unit Accessories
 - (c) Power Supplies
 - (d) Initiating Devices
 - (e) Notification Devices
 - (f) Smoke, Heat and Gas Alarms
 - (g) Fire Rated Cables
 - (h) Mass Notification Systems / Emergency Communication System
 - (i) Other / Advance Fire Detection and Alarm System

Other products related Fire Detection and Alarm System not included in this list shall be referred to QCD Safety Systems Division for review and evaluation.

2.1.4 Authority Having Jurisdiction

- 1 All works, regulatory requirements and approvals related to Fire Detection and Alarm System in Qatar shall be under the jurisdiction of Qatar Civil Defence.

2.1.5 Company Registration

- 1 The Company responsible for the supplies & trading, installation & maintenance of Fire Detection and Alarm System shall be registered and on the approved list of Qatar Civil Defence and Ministry of Commerce and Industry. For details on the updates of the latest licensing and registration requirements, consult Qatar Civil Defence.

2.1.6 Engineer Registration

- 1 The Engineer in charge for the Design, Supervision of Installation, Testing, Commissioning and Maintenance of the Fire Detection and Alarm System shall be registered and licensed based on the latest regulatory requirements of Qatar Civil Defence. For details on the updates of the latest licensing and registration requirements, consult Qatar Civil Defence.

2.1.7 Contractor's Responsibility

- 1 The Contractor shall arrange for a QCD Registered Specialty Contractor to supply, install, test, commission and maintain the Fire Detection and Alarm System based on approved plan, products and installation subject to the approval of Qatar Civil Defence.

2.1.8 Quality Assurance

Products, equipment and materials in this part shall obtain QCD Product Approval thru the Safety Systems Division of Qatar Civil Defence. An approved and registered Fire Detection and Alarm System Contractor that employs QCD Registered Engineers shall be in charge for the installation, testing and commissioning of the project.

2.1.9 Plan Review

- 1 The Engineering Design for Fire Detection and Alarm System shall be submitted to Qatar Civil Defence for evaluation, technical review and approval. Refer to the latest guidelines of Plan Review Section for further details.

2.2 PRODUCTS

2.2.1 Product Approval

- 1 Products for Fire Detection and Alarm Systems shall be QCD Approved. It shall meet listing requirements, appropriate standards, technical specifications, certified and tested by a QCD Recognized Product Certification Body and Testing Laboratory as per the latest Qatar Civil Defence Regulations.
- 2 The following Fire Detection and Alarm System products, equipment and materials shall be required to obtain QCD Approval.
 - (a) Control Unit
 - (b) Control Unit Accessories
 - (c) Power Supplies
 - (d) Initiating Devices
 - (e) Notification Devices
 - (f) Smoke, Heat and Gas Alarms
 - (g) Annunciators, Graphic Displays, Mimic Panels
 - (h) Fire Rated Cables
 - (i) Mass Notification Systems / Emergency Communication System
 - (j) Other / Advance Fire Detection and Alarm System
- 3 Other related Fire Detection and Alarm System / Products / Materials and new innovations not included in this list shall be referred to QCD Safety Systems Division for review and evaluation.

- 4 A guide (sample standards) regarding acceptable product standards for Fire Detection and Alarm System are indicated from 2.2.2 to 2.2.10 of this Section.
- 5 Products that complies to equivalent EN standards or other international standards are subject to QCD Engineers technical review and for the final approval of QCD Officers / Head of Section.

2.2.2 Control Unit

Product	Standard
Control Unit	ANSI/UL 864 "Control Units and Accessories" EN 54-2 "Control and Indicating Equipment" FM 3010 ULC S527

2.2.3 Control Unit Accessories

Product	Standard
Control Unit Accessories	ANSI/UL 864 "Control Units and Accessories" EN 54-17 "Short-circuit Isolators" EN 54-18 "Input/Output Devices"

2.2.4 Power Supplies

Product	Standard
Power Supplies	ANSI/UL 864 "Control Units and Accessories" EN 54-4 "Power Supply Equipment"

2.2.5 Initiating Devices

Product	Standard
Smoke Detector	ANSI/UL 268 "Smoke Detectors for Fire Alarm Signaling Systems". ANSI/UL 268A EN 54-27 "Duct Smoke Detector" EN 54-7 "Fire detection and fire alarm systems. Smoke detectors, Point detectors using scattered light transmitted light or ionisation". ULC S529
Heat Detector	ANSI/UL 521 "Heat Detectors for Fire Protective Signaling Systems". EN 54-22 "Resettable line type heat detectors" EN 54-28 "Non-resettable line type heat detector" EN 54-5 "Fire Detection and fire alarm systems. Heat detectors. Point detectors". FM 3210

Product	Standard
Flame Detector	ANSI FM 3260 EN 54-10 "Flame detectors - Point detectors"FM 3260 ULC S386
Multi Criteria Detector	EN 54-29 "Multi-sensor fire detector - Point detectors using a combination of smoke and heat sensors" EN 54-30 "Multi-sensor fire detector - Point detectors using a combination of carbon monoxide and heat sensor" EN 54-31 "Multi-sensor fire detector - Point detectors using a combination of smoke, carbon monoxide and optionally heat sensor"
Gas Detector	ANSI FM 6325 ANSI/ISA 60079-29-1 ANSI/ISA 60079-29-4 ANSI/ISA 92.00.01 ANSI/ISA 92.04.01 EN 54-26 "Point fire detectors using carbon monoxide sensors" CAN/CSA C22.2 No. 60079-29-1 EN 45544-1 EN 45544-2 EN 45544-3 EN 50104 EN 60079-29-1 EN 60079-29-4 FM 6320 FM 6325 FM 6340 IEC 60079-29-1 IEC 60079-29-4
Manual Call Point	ANSI/UL 38, "Manual Signalling Boxes for Fire Alarm Systems." EN 54-11 "Manual Call Points"

2.2.6 Notification Devices

Product	Standard
Notification Devices (Audible Alarm Devices, Visible Alarm Devices)	ANSI/UL 1971 ANSI/UL 484 EN 54-23 "Fire alarm devices - Visual alarm devices"EN 54-3 "Fire alarm devices - sounders" FM 3150 FM 3155 ULC S525 ULC S526 ULC S541

Product	Standard
Notification Devices for the Hearing Impaired	ANSI/UL 1971, "Signaling Devices for the Hearing Impaired". BS 5446-3 "Fire detection and fire alarm devices for dwellings. Specification for smoke alarm kits for deaf and hard of hearing people"
Loudspeakers	ANSI/UL 1480, "Speakers for Fire Alarm and Signaling Systems, Including Accessories ", EN 54-24 "Components of voice alarm systems - Loudspeakers" UL 1711, "Amplifiers for Fire Protective Signaling Systems."

2.2.7 Smoke, Heat and Gas Alarms

Product	Standard
Smoke Alarm	ANSI/UL 217, "Single and Multiple Station Smoke Alarms". EN 14604 "Smoke alarm devices" CAN/ULC-S531, "Smoke Alarms." ISO 12239 "Smoke alarms using scattered light, transmitted light or ionization".
Heat Alarm	BS 5446-2 "Fire detection and alarm devices for dwellings. Specification for heat alarms"
Gas Alarm	ANSI/UL 2034, "Single and Multiple Station Carbon Monoxide Alarms". EN 50194 -1 & 2 Electrical apparatus for the detection of combustible gases in domestic premises or recreational vehicles EN 50291-1 "Electrical apparatus for the detection of carbon monoxide in domestic premises" EN 50291-2 "Electrical apparatus for continuous operation in a fixed installation in recreational vehicles"
Smoke Alarms for the Deaf and Hard of Hearing	BS 5446-3 Fire detection and fire alarm devices for dwellings. Specification for smoke alarm kits for deaf and hard of hearing people

2.2.8 Fire Rated Cables

Product	Standard
Fire Rated Cables	<p>ANSI/UL 1424, "Cables for Power-Limited Fire-Alarm Circuits".</p> <p>BS 6387:1994 Performance requirements for cables required to maintain circuit integrity under fire conditions</p> <p>BS 7629-1:1997 (Incorporating Amendment Nos.1 and 2) Thermosetting insulated cables with limited circuit integrity when affected by fire. Part 1: Multicore cables (The provisions introduced by amendment No.1: 2004 are effective from 1st April 2004)</p> <p>BS 7629-1:1997 Thermosetting insulated cables with limited circuit integrity when affected by fire. Part 1: Multicore cables</p> <p>BS 7629-1:2008 Electric cables - Specification for 300/500 V fire resistant screened cables having low emission of smoke and corrosive gases when affected by fire - Part 1: Multicore and multipair cables</p> <p>BS 7846:2000 Electric cables 600/1000V armoured fire-resistant cables having thermosetting insulation and low emission of smoke and corrosive gases when affected by fire</p> <p>BS 7846:2009 Electric cables - Thermosetting insulated, armoured, fire - resistant cables of rated voltage 600/1 000 V, having low emission of smoke and corrosive gases when affected by fire - Specification</p> <p>BS 8434-2:2003+A2:2009 Method of test for assessment of the fire integrity of electric cables - Part 2: test for unprotected small cables for use in emergency circuits- EN 50200 with a 930°C flame and with water spray</p> <p>BS 8491:2008 Method for assessment of fire integrity of large diameter power cables for use as components for smoke and heat control systems and other certain active fire safety systems</p> <p>BS 8519:2010 Selection and installation of fire-resistant power and control cable systems for life safety and fire-fighting applications - Code of practice</p> <p>EN 50200:2006 Method of test for resistance to fire of unprotected small cables for use in emergency circuits</p> <p>EN 50267-2-1:1999 Common test method for cables under fire conditions- tests on gases evolved during combustion of materials from cables - procedures - Determination of the amount of halogen acid gas</p> <p>EN 50267-2-3:1999 Common test methods for cables under fire conditions - Tests on gases evolved during combustion of materials from cables - Procedure 2-3: Procedures - Determination of degree of acidity of gases for cables by determination of the weighted average of pH and conductivity</p> <p>EN 60332-3:2009 Tests on electric and optical fibre cables under fire conditions - Part 3: Test for vertical flame spread of vertically mounted bunched wires or cables</p> <p>EN 60702-1:2002 Mineral insulated cables and their terminations with rated voltage not exceeding 750V - Part 1: Cables</p>

Product	Standard
	<p>Notes:</p> <ol style="list-style-type: none"> 1. The rated voltages U_0/U recognised for BS 6387:1994 are, 300/500V and 450/750V, and for BS 7629-1 are 300/500V, where U_0 is the power-frequency voltage to earth and U is the power-frequency voltage between conductors. 2. Testing of single core cable to BS 6387:1994 is not recognised by the standard. This is because it requires the cable to have at least two metallic elements. Therefore LPCB approval of single core cable is based on the cable being tested in a stainless steel conduit. 3. All BS 6387 approvals must include EN 50267-2-1 (acid gas) and EN 61034-2 (smoke density) testing 4. MICC Cables approved to BS 5839-1:2002+A2:2008 Clause 26.2 must be sheathed with an overall polymeric covering. 5. EN 50200:2006 Annex E and BS 8434-2:2003+A2:2009 provide methods of test that meet the requirements for a special flame / mechanical shock / water spray sequences described in BS 5839-1:2013, Clause 26.2 d) and e), respectively. 6. BS 8491 does not cover cables with a voltage rating that exceeds 600/1000V or where the external cable diameter is less than 20mm. 7. BS 8519 standard covers both Power and Control cables; different test methods apply to each cable type. Control cables up to & including 4.0mm² can be approved to BS 8519. <p>Fire retardant cables</p> <p>This section lists fire retardant cables for use in fire safety, fire detection and fire alarm systems and other applications where specifications require cables with specific performance in the event of a fire.</p>

2.2.9 Mass Notification System

Product	Standard
Mass Notification System / Voice Alarm	ANSI/UL 2572, "Mass Notification Systems." EN 54-16 "Voice alarm control and indicating equipment"

2.2.10 Other / Advance Fire Detection and Alarm System

Product	Standard
Aspirating Smoke Detector	EN 54-20 "Aspirating smoke detector"
Video Image Smoke Detector	FM 3232 UL Subject 268B "Outline of Investigation for Video Image Smoke Detectors". ULC / ORD C529A

Product	Standard
Linear Type Detection & Alarm System	ANSI/UL 521, "Heat Detectors for Fire Protective Signaling Systems". FM Approved - Fire Detection, Heat Actuated
Wireless Fire Detection and Alarm System / Components using Radio	EN 54-25 "Components using radio links"

Standards used to evaluate other products/components for Fire Detection and Alarm System shall be reviewed and subject to the final approval of Qatar Civil Defence.

2.3 INSPECTION, TESTING, COMMISSIONING & MAINTENANCE

- 1 The UPDA Certified Supervising Consultant that oversees the Registered Contractor shall arrange inspection, testing and commissioning of the Fire Detection and Alarm System of the new buildings / premises / structures with Qatar Civil Defence during the building completion stage of the project as a prerequisite for the issuance of an Occupancy Permit.
- 2 The Owner or Owner's Representative shall arrange inspection, testing, commissioning and maintenance of the Fire Detection and Alarm System of the existing buildings / premises / structures with Qatar Civil Defence done by a Registered Contractor during the building maintenance stage as a requirement for the issuance of a Building Commercial Permit or License Renewal.
- 3 Inspection, Testing, Commissioning and Maintenance of Fire Detection and Alarm System shall be based on:
 - Qatar Civil Defence – Acceptance Inspection & Testing Guidelines (latest edition approved by QCD)
 - Qatar Civil Defence – Inspection, Testing and Maintenance Guidelines M&E (latest edition approved by QCD)
 - Qatar Civil Defence Guidelines (latest edition approved by QCD)
- 4 Reference to NFPA Codes/Standards and other International Codes/Standards are subject to QCD technical review, evaluation and final approval.
 - NFPA 72.....National Fire Alarm and Signalling Code
 - NFPA 70..... National Electrical Code
 - NFPA 101 Life Safety Code
 - NFPA 1 Fire Code
 - NFPA 3 Standard for Commissioning of Fire Protection and Life Safety Systems
 - NFPA 4 Standard for Integrated Fire Protection and Life Safety System Testing
 - Manufacturer's Listing Instructions
 - Manufacturer's Recommendation / Published Instructions
- 5 The final approval for works related to Fire Detection and Alarm System shall be as per the acceptance of the Authority Having Jurisdiction known as Qatar Civil Defence.

END OF PART