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ARAB ENGINEER

4 EMERGENCY LIGHTING & EMERGENCY POWER SYSTEM

4.1 GENERAL

4.1.1 Scope

- 1 This Section specifies the minimum requirements of construction, material, installation, testing and commissioning for Emergency Lighting System.

4.1.2 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 (QCD) - 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 101 Life Safety Code

NFPA 110 Standard for Emergency and Standby Power Systems

NFPA 111 Standard on Stored Electrical Energy Emergency and Standby Power Systems

ANSI/UL 924 Emergency Lighting and Power Equipment

BS 6387 Test method for resistance to fire of cables required to maintain circuit integrity under fire conditions

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
CAN/ULC-S572	Standard for Photoluminescent and Self-Luminous Exit Signs and Path Marking Systems.
EN 50171	Central power supply systems
EN 50200	Method of test for resistance to fire of unprotected small cables for use in emergency circuits
EN 60598-2-22	Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting.
EN 61347-2-7	Lamp controlgear - Part 2-7: Particular requirements for battery supplied electronic controlgear for emergency lighting (self-contained); (IEC 61347-2-7:Lamp controlgear - Part 2-7: Particular requirements for electric source for safety services (ESSS) supplied electronic controlgear for emergency lighting (self-contained))
IEC 60598-2-22	Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting

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

4.1.3 Emergency Lighting & Emergency Power Supply System

- 1 Emergency Lighting & EPSS
 - (a) Emergency Lighting Units & Components
 - (b) EPSS & Components - Central Battery System
 - (c) Cables (Fire Rated / Fire Classified - Electrical) & Accessories
 - (d) Other - Emergency Lighting & EPSS Products / Components / Accessories
- 2 Other products related Fire Fighting System not included in this list shall be referred to QCD Safety Systems Division for review and evaluation.

4.1.4 Authority Having Jurisdiction

- 1 All works, regulatory requirements and approvals related to Emergency Lighting and Emergency Power Supply System in Qatar shall be under the jurisdiction of Qatar Civil Defence.

4.1.5 Company Registration

- 1 The Company responsible for the supplies & trading, installation & maintenance of Emergency Lighting and Emergency Power Supply 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.

4.1.6 Engineer Registration

- 1 The Engineer in charge for the Design, Supervision of Installation, Testing, Commissioning and Maintenance of the Emergency Lighting and Emergency Power Supply 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.

4.1.7 Contractor's Responsibility

- 1 The Contractor shall arrange for a qualified Specialty Contractor to supply, install, test, commission and maintain the Emergency Lighting and Emergency Power Supply System based on approved plan, products and installation subject to the approval of Qatar Civil Defence.

4.1.8 Quality Assurance

Products, equipment and materials in this part shall obtain QCD Product Approval thru the Safety Systems Division of Qatar Civil Defence. A qualified Emergency Lighting and Emergency Power Supply System Contractor that employs QCD Registered Engineers shall be in charge for the installation, testing and commissioning of the project.

4.1.9 Plan Review

- 1 The Engineering Design for Emergency Lighting & Emergency Power Supply 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.

4.2 PRODUCTS

4.2.1 Product Approval

- 1 Products for Emergency Lighting and Emergency Power System shall be QCD Approved. It shall meet listing requirements, appropriate standards, technical specifications and certified / tested by a QCD Recognized Product Certification Body or Testing Laboratory as per Qatar Civil Defence Regulations.
- 2 The following Emergency Lighting System products, equipment and materials shall be required to obtain QCD Approval.
 - (a) Emergency Lighting Units & Components
 - (b) EPSS & Components - Central Battery System
 - (c) Cables (Fire Rated / Fire Classified - Electrical) & Accessories
 - (d) Other - Emergency Lighting & EPSS Products / Components / Accessories
- 3 Other related Fire Fighting 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 Emergency Lighting & Emergency Power Supply System are indicated from 4.2.2 to 4.2.3 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.

4.2.2 Emergency Lighting and Power Equipment & all its components

Product	Standard
(a) Emergency Lighting Units & Components (Emergency luminaires, Inverter/charger packs, Combination exit lights/unit equipment, emergency ballasts, Lighting controllers, Emergency LED driver etc.)	<p>ANSI/UL 924, "Emergency Lighting and Power Equipment".</p> <p>EN 60598-2-22 "Luminaires. Particular requirements. Luminaires for emergency lighting"</p> <p>EN 61347-2-7 "Lamp control gear. Particular requirements for d.c. supplied electronic ballasts for emergency lighting"</p> <p>CAN/ULC-S572, "Photoluminescent and Self-Luminous Exit Signs and Path Marking Systems."</p>

4.2.3 EPSS & Components - Central Battery System

Product	Standard
EPSS & Components - Central Battery System	<p>ANSI/UL 924, "Emergency Lighting and Power Equipment".</p> <p>IEC 60598-2-22</p> <p>EN 50171:2001 "Central power supply systems"</p>

4.2.4 Cables (Fire Rated / Fire Classified - Electrical) & Accessories

Product	Standard
Cables (Fire Rated / Fire Classified - Electrical) & Accessories	<p>BS 6387 (Category CWZ)</p> <p>EN 50200 (Class PH120)</p> <p>BS 8434-2+A2 (120 mins)</p>

4.2.5 Other Emergency Lighting & EPSS products & components

Standards used to evaluate other products/components for Emergency Lighting & EPSS shall be reviewed and subject to the final approval of Qatar Civil Defence.

4.3 INSPECTION, TESTING, COMMISSIONING & MAINTENANCE

- 1 The UPDA Certified Supervising Consultant that oversees the qualified Contractor shall arrange inspection, testing and commissioning Emergency Lighting and Emergency Power 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 Emergency Lighting and Emergency Power System of the existing

buildings / premises / structures with Qatar Civil Defence done by a qualified 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 Emergency Lighting and Emergency Power 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 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 101.....Life Safety Code

NFPA 110.....Standard for Emergency and Standby Power Systems

NFPA 111.....Standard on Stored Electrical Energy Emergency and Standby Power Systems

Manufacturer's Listing Instructions

Manufacturer's Recommendation / Published Instructions

- 5 The final approval for works related to Emergency Lighting and Emergency Power Supply System shall be as per the acceptance of the Authority Having Jurisdiction known as Qatar Civil Defence.

END OF PART