Building Emergency Escape Lighting & Exit Signs Visual Inspection and Testing

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EQUIPMENT COVERED BY THIS TASK LIST

Emergency escape lighting and exit signs.

QUALIFICATIONS

The inspection and testing of emergency lighting and exit signs shall be carried out only by persons having the appropriate qualifications for the work being undertaken. This shall comprise of either ;
• Certificate II in Fire Protection Inspection and Testing CPP20511 including the unit of competency: CPPFES2026A – Inspect and Test Emergency and Exit Lighting Systems, or
• a qualification the Queensland Building & Construction Commission considers is at least equivalent to the course mentioned above; or
• possession of an electrical mechanic licence.
Note that the fire protection technician is not permitted to undertake any functions restricted to licensed trades or occupations.

INSTRUCTIONS

1 **Load** button to start and save form.
2 Complete tasks and tests listed in the Task List.
3 Enter the results of the tests in the appropriate box on the Equipment Schedule of Results and complete the Emergency Lighting Log Book located on site.
4 Enter a condition score that reflects the condition found through both the visual and any tests that have been completed.
5 The inspection shall include completion of the on site log book. If further tasks or tests are required, these shall be communicated to a QUU representative and detailed on the checklist for approval.
6 Ensure that following the inspection, the normal lighting system is restored to it's original condition.
7 Record the condition on the Equipment Schedule of Results.
8 Provide additional comments on all equipment with a score of 2,3,4, or 5.
9 Ensure a line is through all unused boxes. If the test was required and could not be completed a score of 3 and the reason must be given in limitations.
10 Records shall be submitted by the end of each week from the date of completion.
11 Submit Record.

Building Emergency Escape Lighting & Exit Signs Visual Inspection and Testing

The objective is to carry out inspection and tests to ensure the emergency escape lighting and exit sign systems comply with relevant codes and standards.

General

All test results shall be recorded in the site log book.
Any emergency luminaire, exit sign or battery which fails to operate satisfactorily shall be either repaired or replaced after obtaining the appropriate corrective work approval for the additional work.

Any corrective action deemed necessary shall be recorded in the site log book and noted in the Schedule of Results "Observations" section.

The names of persons responsible for carrying out the maintenance work and the date the work was completed shall be recorded.

Single Point Systems

Six Monthly Tasks

Discharge Test

Where manual faciltites are provided

- Visually inspect relays, contactors, timers and pushbuttons/key-switches associated with the manual testing facilities for any condition that could cause a malfunction.
- Check all connections on manual discharge test facilities for tightness and remove any dust or dirt that may have accumulated within control equipment enclosures.
- Ensure the correct operation of the manual testing facilities (in particular the abort and auto-reset facilities)
- Isolate the coil circuits of all sensing relays or contactors (where installed) from the a.c. supply and observe correct operation to bring on the emergency lighting.
- Operate the emergency luminaires and exit signs from their battery supply by simulating failure of the monitored supply. The luminaires and exit signs shall remain illuminated for not less than the required in-service duration of 90 minutes. Where manual discharge testing facilities are provided, the simulation of supply failure must be effected by the manual test facility.
- At the end of the discharge test period, ensure that the emergency luminaires and exit signs have been returned to their normal operational status.

Automatic discharge facilities

- Visually check the operational status of each unit either by means of the indicator at each unit, where self-contained facilities are provided, or by means of the relevant controller or indicator panel where centralized testing facilities are provided.

Additional check for indirect lighting systems

- Check that the finish of the major reflecting surfaces (e.g. walls, ceilings) have reflectances of not less than those on which the design of the system was based.
- Check that emergency luminaires of the directional beam type, if used, are aimed in such a manner that the beam will not be directed into the eyes of persons moving through the designated area.

Additional 12 monthly tasks

- Clean all light-emitting and reflecting surfaces of emergency luminaires and exit signs to restore luminous intensity.
- A visual check shall be made to ensure that the emergency luminaires and exit signs operate in correct relationship to the normal lighting in the designated area.

Battery Replacement

Replacement of batteries shall only be preformed after obtaining the appropriate approval.

- Where more than one cell is utilized, the complete battery pack shall be replaced.
- Replacement batteries shall be of the same type and ampere-hour capacity.
- A discharge test shall be conducted for 120 minutes.

Central Systems

Six Monthly Tasks

Batteries

- Check the electrolyte level in each cell. Top up as required.
- Inspect all cell containers for electrolyte leakage. Neutralize and mop up any spilt liquid as necessary.
- For all types of batteries, inspect cell connections for signs of corrosion and tighten any loose joints. Treat all exposed metal surfaces with a coating of petroleum jelly or other suitable battery terminal preservative.

Battery Chargers

- Visually inspect all components for any condition which could cause a malfunction. Pay particular attention to indicating lamps, relays and contactors.
- Remove any dust or dirt that may have accumulated within the cubicle.
- Note the battery voltage and check the reading against data in the operating and maintenance manual to ensure that, when corrected for temperature, the reading lies within the normal float voltage limits.
- Check all connections for tightness.

Central Inverters

- Visually inspect components for any condition which could cause a malfunction.
- Note d.c. input voltage and current, and record in the logbook. Check the readings against data in the operating and maintenance manual to ensure that they are within the tolerance limits of the inverter.
- Note a.c. output voltage and current, and record in the logbook. Check the readings against data in the operating and maintenance manual to ensure that they are within the output tolerances given for the inverter.

Distribution & Control Equipment

- Visually inspect relays, contactors, circuit-breakers and fuses for any condition that could cause a malfunction.
- Check all connections for tightness.
- Remove any dust or dirt that may have accumulated within distribution and control equipment enclosures.
- Isolate the coil circuits of all sensing relays or contactors from the a.c. supply and observe correct operation to bring on the emergency lighting.

Emergency luminaires and exit signs

- All emergency luminaires and exit signs shall be checked to ensure that they function satisfactorily.

  For indirect lighting systems, carry out the following checks:

  - Check that the finish of the major reflecting surfaces (e.g. walls, ceilings) have reflectances of not less than those on which the design of the system was based.
  - Check that emergency luminaires of the directional beam type, are aimed so that the beam will not be directed into the eyes of persons moving through the designated area.

System check

When carrying out the following system checks, the effect isolating a battery charger has on other systems, must be considered.

Manual discharge test faciltiy

- Turn the battery charger off, simulate a mains failure and carry out a partial discharge test at 100 percent of the installed emergency lighting load. Allow the test to continue until the operation of all emergency luminaires and exit signs has been checked. During the discharge test, check that the charger-failure alarm operates satisfactorily.
- Restore the system to normal operation, turn the battery charger on and recharge the battery.

Automatic discharge test facility

- Where automatic discharge test facilities are provided, a visual check shall be made of the operational status of all emergency luminaires and exit signs by means of the indications given at the controller or associated indicator panel.

Additional 12 monthly tasks

Batteries

Lead Acid Batteries

- Confirm the state of charge of batteries from the electrolyte density and OEM data.

All types of batteries (including lead-acid batteries)

- With the battery on float-charge, measure and record the overall battery voltage and individual cell voltages with an instrument having an accuracy of Class 1.5 or better in accordance with AS 1042. Check the readings to the second decimal place.

Battery Charger Assembly

- Check the calibration of voltmeters with an instrument having an accuracy of Class 1.5 or better, in accordance with AS 1042.
- Check that the battery earth-fault detection system, if provided, operates satisfactorily.
- Check that the battery low-voltage alarm, if provided, operates satisfactorily. This may be carried out either by extending the discharge test or by simulating a low-voltage condition.

Inverters

- Check the calibration of voltmeters with an instrument having an accuracy of Class 1.5 or better in accordance with AS 1042.

Emergency luminaires and exit signs

- Inspect fittings and clean reflective surfaces as necessary to restore luminous intensity.
- Visually check to ensure that emergency luminaires and exit signs operate in correct relationship to the normal lighting in the designated area

Discharge test

When carrying out the following checks, the effect isolating a battery charger has on other systems, must be considered.

Manual discharge test faciltiy

- Turn the battery charger off, simulate mains failure, and carry out a discharge test using 100 percent of the installed emergency lighting load. Allow the test to continue for 90 minutes.
- On completion of the discharge test, measure the battery voltage. If the battery voltage is below the limits set out by the OEM, the battery will require reservice or replacement.

Restore the system to normal operation, turn the battery charger on, and manually select the boost-charge mode, if provided. Carry out the following:

- Check that, after the batteries have been recharged, the battery charger has changed over automatically to the float-charge mode.
- For d.c. reticulated systems, measure the maximum voltage at the origin of the emergency lighting distribution system during boost charging. (The voltage measured shall be not more than 116% of the nominal system voltage.)

When it is necessary for the battery to be replaced, the emergency lighting system shall be recommissioned in accordance with the above procedure, except that the discharge test shall continue for 120 minutes.

Automatic discharge test facility

- Visually check the operational status of all emergency luminaires and exit signs by means of the indications given at the controller or associated indicator panel.

Reset

Queensland Urban Utilities

1. Load

Schedule of Results

Work Order			
Equipment Ref:		**MST No:**	
Description:			
Test Equipment			
Type & Model:			
Serial No:			
Codes and Standards			
Legislation	**Queensland Building & Construction Commission Regulation 2003**		
Standards	**AS2293.2:1995**		
Codes	**NCC 2015 Building Code**		

Detail in Obervations further information for all condition scores except "1"

Emergency Escape Lighting & Exit Signs Inspection & Test Item	**Inspection Results**	
	Yes / No	**Condition Score**
		1-5
Log Book is on site and date of last inspection (This book is used to record results of test) **Date :** _____		
Site layout diagrams are on site (Drawings or sketches of the emergency light installation)		
Type of Emergency Lighting System ;		
Single Point System		
Centrally Supplied System		
Type of maintenance being performed ;		
6 Month Maintenance		
12 Month Maintenance		
General Lighting Operational		

Comments

Verification Of Test Results

Having carried out an inspection and test of the Emergency Lighting and Exit Signs in accordance with the requirements of AS 2293.2 Emergency Escape Lighting and Exit Signs for Buildings, and the performance requirements of the Building Code of Australian EV4.1, subject to those Limitations and Observations listed below, the Emergency Lighting System is as stated within the Schedule of Results.

Limitations (Technician to detail any discrepancy from the planned activity)

Observations (Technician to detail observations and items requiring attention. Condition Score 2,3,4,5)

Inspected and Tested by:

Work Order

2. Crossout

3. Check

License/Qualification Type & Number

Signature

or

Print Name

Employee Number

Date

Planned Corrective (For Office Use. Receiving Officer to record reference numbers and comments):

Condition Score	
1	**Very Good Condition.** It is stable, no additional work required. Advise normal or extended maintenance interval.
2	**Good Condition.** Only used where repair/replacement work is completed as per job instructions Now it is stable and safe.
3	**Fair Good Condition.** Signs of degradation or uncompleted tasks. Schedule for re-inspection is recommended; or Part repair/replacement is required (Planned Corrective in 3-9 months); or Whole asset renewal/rehabilitation is recommended within a timeframe of 3-5 years. Work request notification shall be submitted.
4	**Poor Condition.** Likely to fail. Part repair/replacement is required (Planned Corrective in 1-3 months); or Whole asset renewal/rehabilitation is recommended within a timeframe of 1-3 years. Work request notification shall be submitted.
5	**Unserviceable or breach of regulation or business requirement - requires URGENT attention.** Repair/replacement is required as soon as possible (Planned Corrective in 1-4 weeks); or Whole asset renewal/rehabilitation is recommended within a timeframe of 6-12 months. Work request notification shall be submitted; or Make safe and report ASAP (arrange Responsive or Urgent Planned Corrective work order).