

Photoluminescent Lighting Council Standard PLCS 101 - Photoluminescent Exit Signs

PART C - INSPECTION AND MAINTENANCE

SECTION 1 - PRINCIPLES

1.1 Scope

This standard sets out the periodic inspection and maintenance procedures necessary to ensure that Photoluminescent Exit Signs continue to meet the requirements of the Relevant Building Code. The standard applies to all Photoluminescent Exit Signs installed to meet the Relevant Building Code.

1.2 Objective

The objective of this standard is to define the frequency and process for the periodic maintenance of Photoluminescent Exit Signs to ensure that exits and paths to exits are identified.

1.3 Application

This standard details the periodic inspection and maintenance procedures required for Photoluminescent Exit Signs, and requires that inspection outcomes are recorded accordingly.

1.4 Referenced Documents

This standard refers to the following regulations or codes:

- a. National Construction Code 2016, Volume 1 “Building Code of Australia, Class 2 to Class 9 Buildings” (NCC).
- b. New Zealand Building Code Clause F8 Signs, 2nd edition, amendment 4, 1 January 2017 (NZBC).
- c. ASTM G155-2013 Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.
- d. ASTM E2073-10 Standard Test Method for Photopic Luminance of Photoluminescent (Phosphorescent) Markings.

1.5 Definitions

All defined terms are contained in Part A of this standard.

SECTION 2 - FUNDAMENTAL REQUIREMENTS

2.1 Installation Documentation

The following documents are required to be collated by a Qualified Person and/or the Managing Entity on or before the initial installation of any Photoluminescent Exit Sign(s):

- a. Plan detailing the location, brand and model number of the Photoluminescent Exit Sign(s), the installation date of the Photoluminescent Exit Sign(s), the location and type of each luminaire in a Dedicated Light Source and detail of the location of any Emergency Visibility Enhancements.

- b. Details of any Lighting Control Systems.
- c. Luminance Test report(s) traceable to the Photoluminescent Exit Signs as new.
- d. UV Durability Test reports (if available).

The UV Durability Test reports can be provided as an addition to Installation Documentation after installation.

A Qualified Person and/or the Managing Entity shall update the Installation Documentation if any Photoluminescent Exit Signs are replaced or any Dedicated Light Source is Modified or any Lighting Control Systems are Modified.

2.2 Periodic Inspection and Maintenance

Photoluminescent Exit Signs shall be inspected and maintained by a Qualified Person in accordance with the relevant provisions of this standard.

2.3 Periodic Inspection and Maintenance Records

Inspection and maintenance records, as detailed in Section 3 Required Reporting and Records, shall be kept up to date and be accessible at the installation site.

2.4 Frequency of Inspection and Maintenance Procedures

The date of the periodic inspection and maintenance may be advanced or extended by agreement in writing between the Managing Entity and the Qualified Person. However, such advance or extension shall not exceed 14 days for a six month inspection, 21 days for a one year inspection, and 30 days for a 5 year inspection.

SECTION 3 - REQUIRED REPORTING AND RECORDS

3.1 Summary Report

At the completion of the inspection the Qualified Person or representative of the Managing Entity shall provide the Managing Entity with a summary report detailing any unresolved Serious Defects for immediate remedy.

3.2 Detailed Report

Within 72 hours of the inspection the Qualified Person shall provide the Managing Entity with a detailed report containing the following:

- a. Name and/or address of the installation.
- b. Inspection frequency
- c. Inspection date
- d. Applicable building code reference
- e. Serious Defects
- f. Minor Defects
- g. Outstanding Defects
- h. Managing Entity details
- i. Qualified Person details

(NOTE: Example of Detailed Report is contained in Appendix 1.)

SECTION 4 - INSPECTION AND MAINTENANCE PROCEDURES

4.1 Required Inspection and Maintenance Procedures

The inspection and maintenance procedures shall be carried out by a Qualified Person at the frequency and as detailed in Section 4 of this standard.

4.2 Six-monthly Procedures

- a. Refer to the Installation Documentation and check whether the Photoluminescent Exit Signs are in place, legible, not materially damaged, and not obstructed. Fix or report all Minor Defects and all Serious Defects.
- b. Refer to the Installation Documentation and check whether all Dedicated Light Sources are operational and have had no unauthorised alterations. Fix or report all Minor Defects and all Serious Defects.
- c. If there is any visible accumulation of dust or other deposits on the face of the Photoluminescent Exit Sign then clean in accordance with manufacturers cleaning instructions.
- d. Refer to the Installation Documentation and check whether all Lighting Control Systems are operating as designed. Fix or report all Minor Defects and all Serious Defects.

(NOTE: Example of Six-monthly Inspection is contained in Appendix 2.)

4.3 Annual Procedures

- a. Repeat six-monthly procedures detailed in 4.2.
- b. Photoluminescent Exit Signs installed outdoors:
 - i. If no UV Durability Test has been completed (check the Installation Documentation) then complete a Luminance Test on a Representative Sample.
 - ii. If the Photoluminescent Exit Sign(s) has passed the 1000 Hour UV Durability Test (but not a longer UV Durability Test) and the sign(s) has been installed for 5 years or more then complete a Luminance Test on a Representative Sample.
 - iii. If the Photoluminescent Exit Sign(s) has passed the 2000 Hour UV Durability Test (but not the 3000 Hour UV Durability Test) and the sign(s) has been installed for 10 years or more then complete a Luminance Test on a Representative Sample.
 - iv. If the Photoluminescent Exit Sign(s) has passed the 3000 Hour UV Durability Test and the sign(s) has been installed for 15 years or more then complete a Luminance Test on a Representative Sample.
 - v. If in (i) to (iv) above a Luminance Test is indicated but no Luminance Test is undertaken or the test result is a fail then replace the Photoluminescent Exit Sign(s).

(NOTE: Example of Annual Inspection is contained in Appendix 3.)

4.4 Five Yearly Procedures

- a. Repeat six-monthly procedures detailed in 4.2.
- b. Photoluminescent Exit Signs installed indoors:
 - i. If no UV Durability Test has been completed then complete a Luminance Test on a Representative Sample.
 - ii. If the Photoluminescent Exit Sign(s) has passed the 1000 Hour UV Durability Test and the sign(s) has been installed for 30 years or more then complete a Luminance Test on a Representative Sample.
 - iii. If in (i) or (ii) above a Luminance Test is indicated but no Luminance Test is undertaken or the test result is a fail then replace the Photoluminescent Exit Sign(s).

(NOTE: Example of Five Yearly Inspection is contained in Appendix 4.)

APPENDIX 1

Photoluminescent Exit Signs
Example of Detailed Inspection & Maintenance Report

Photoluminescent Exit Signs – Inspection and Maintenance Report

Building Details

Name of Building: Name of Owner:

Address: Managing Entity:

Inspector Details (Must be a Qualified Person as per 4.1 of Standard)

Name of Inspector: Position/Title:

Address of Inspector: Date of inspection:

Indoor/Outdoor Signs (circle which applies)

6 Monthly Check/Annual Check/5 Yearly Check (circle which applies)

Defects identified during inspection	Action required to rectify defect	Date action completed	Signature

APPENDIX 2

Six-monthly Inspection and Maintenance Checking Procedures for Photoluminescent Signs

Completed

- There has been no change to the configuration of the building which renders the marked escape routes unusable.
- All signs are still configured as at installation and there is no material damage to any of the signs.
- All signs are clean from general dust build up and any other specific obscuring deposits.
- All signs are clearly visible and have not been covered up.
- All dedicated light sources checked that the positions have not altered from design.
- All dedicated light sources are in working order and clean.
- All automated lighting control systems are operational as per design.


APPENDIX 3

Annual Inspection and Maintenance Checking Procedures for Photoluminescent Signs

Completed

- There has been no change to the configuration of the building which renders the marked escape routes unusable.
- All signs are still configured as at installation and there is no material damage to any of the signs.
- All signs are clean from general dust build up and any other specific obscuring deposits.
- All signs are clearly visible and have not been covered up.
- All dedicated light sources checked that the positions have not altered from design.
- All dedicated light sources are in working order and clean.
- All automated lighting control systems are operational as per design.

If signs are positioned outdoors, the following procedures also apply:

UV Durability Test completed? NO  Luminance Test performed
or
Sign replaced

YES



(Circle test which applies)

1000 hr UV Durability Test

Signs have been installed 5 years or more – luminance test performed

Not applicable

2000 hr UV Durability Test

Signs have been installed 10 years or more - luminance test performed

Not applicable

3000 hr UV Durability Test

Signs have been installed 15 years or more - luminance test performed

Not applicable



APPENDIX 4

Five Yearly Inspection and Maintenance Checking Procedures for Photoluminescent Signs

Completed

- There has been no change to the configuration of the building which renders the marked escape routes unusable.
- All signs are still configured as at installation and there is no material damage to any of the signs.
- All signs are clean from general dust build up and any other specific obscuring deposits.
- All signs are clearly visible and have not been covered up.
- All dedicated light sources checked that the positions have not altered from design.
- All dedicated light sources are in working order and clean.
- All automated lighting control systems are operational as per design.

If signs are positioned indoors, the following procedures also apply:

UV Durability Test completed? NO  Luminance Test performed
YES or Sign replaced


1000 hr UV Durability Test

Signs have been installed 30 years or more – Luminance Test completed

Not applicable