

Photoluminescent Lighting Council Standard

PLCS 102H(NZ) Hybrid Photoluminescent Exit Signage: Inspection and Maintenance

SECTION 1 - PRINCIPLES

1.1 Scope

This standard sets out the periodic inspection and maintenance procedures necessary to ensure that *hybrid PL exit signs* installed to meet the New Zealand Building Code continue to meet the requirements of the New Zealand Building Code.

1.2 Objective

The objective of this standard is to define the process for the periodic inspection and maintenance of *hybrid PL exit signs* to ensure ongoing compliance with the New Zealand Building Code, so that the *hybrid PL exit signs* continue to meet their required function of identifying escape routes under all conditions of foreseeable use.

1.3 Application

This standard details the periodic inspection and maintenance procedures required for *hybrid PL exit signs*, and requires that inspection outcomes are recorded accordingly.

1.4 Referenced Documents

This standard refers to the following specifications and regulations:

- a. Standards Australia Technical Specification (SA TS) 5367: 2021, Photoluminescent exit signage: Hybrid photoluminescent signage — Product specification, installation and operation.
- b. New Zealand Building Code Clause F8 Signs, 2nd edition, amendment 4, 1 January 2017.

1.5 Definitions

Conformance defect: means missing (or incorrect) information that would be required to facilitate inspection and maintenance. For example, missing *installation documentation*.

Hybrid PL exit sign: means an exit sign consisting of photoluminescent elements and contrasting elements where the photoluminescent elements are maintained in a charged state by an integrated light source.

Independent qualified person: means a person or entity qualified to carry out inspections of *hybrid PL exit signs* and/or emergency visibility systems.

Installation documentation: means the documentation detailed in clause 2.2.

Light source life expectancy: means the manufacturer declared light source life for *hybrid PL exit signs* calculated using projection methodology as described in SA TS 5367: 2021, Appendix A.

Luminance, contrast and luminance uniformity test: means testing as described in SA TS 5367: 2021, Clause 2.4.

Managing entity: means the building owner or their appointed agent.

Minor defect: means a physical defect which does not cause the entire system/sign to be ineffective. For example, an unclean or obstructed *hybrid PL exit sign*.

Outstanding defect: means any defect recorded from the previous inspection which remains unresolved.

Photoluminescent performance test: means testing as described in SA TS 5367: 2021, Clause 2.3.

PL: means photoluminescent

Serious defect: means a defect which causes the entire system/sign to be ineffective. For example, a non-operational exit sign where it is the only available sign in a space.

SECTION 2 - FUNDAMENTAL REQUIREMENTS

2.1 Relevant Performance Standard

The relevant performance standard for *hybrid PL exit signs* is:

- New Zealand Building Code Clause F8.3.1, F8.3.3 and F8/AS1 4.5.4, 2nd edition, amendment 4, January 2017.

2.2 Installation Documentation

The *installation documentation* provides evidence that the installed *hybrid PL exit signs* meet the relevant performance standard: New Zealand Building Code Clause F8.3.1, F8.3.3 and F8/AS1 4.5.4 January 2017.

The *installation documentation* also assists the inspection and maintenance processes by confirming the physical location of all *hybrid PL exit signs*, and confirms when a sign will need to be replaced due to gradual degradation of the light source, even if the sign shows no obvious signs of failure.

The following documents form the *installation documentation* and should have been collated by the *managing entity* on or before the initial installation of any *hybrid PL exit signs*:

- a. Plan detailing the location, brand and model number of the *hybrid PL exit signs*, and their installation date.
- b. *Photoluminescent performance test* report(s) traceable to the *hybrid PL exit signs* as new.

- c. *Luminance, contrast and luminance uniformity test* report(s) traceable to the *hybrid PL exit signs* as new.
- d. *Light source life expectancy* data traceable to the *hybrid PL exit signs* as new.

An *independent qualified person* and/or the *managing entity* shall update the *installation documentation* if any changes are made to the system design or any *hybrid PL exit signs* are replaced.

SECTION 3 - REQUIRED REPORTING AND RECORDS

All (hard/soft copy) records and written reports must be kept and maintained confirming inspections and maintenance have been carried out by the individuals responsible for inspecting and maintaining the systems or features (including but not limited to owners, service technicians and *independent qualified persons*) for a period of 2 years.

3.1 Summary Report

At the completion of the inspection the *independent 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 *independent 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. *Conformance defects*
- f. *Serious defects*
- g. *Minor defects*
- h. *Outstanding defects*
- i. *Managing entity* details
- j. *Independent qualified person* details

SECTION 4 - INSPECTION AND MAINTENANCE PROCEDURES

4.1 Required Inspection and Maintenance Procedures

The inspection and maintenance procedures shall be carried out as detailed in Clauses 4.2 and 4.3 of this standard.

4.2 Monthly Procedures

Monthly inspections and maintenance of *hybrid PL exit signs* are to be carried out by the *managing entity*.

If the *installation documentation* is available, it shall be used as the template for inspection and maintenance procedures.

If the *installation documentation* is not available, this shall be noted in the detailed report as a *conformance defect*.

Inspection is to be carried out to check the following:

- All signs are still configured as at installation and there is no material damage to any of these products.
- 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 signs are still illuminated (see Note 1 below).

Planned preventative maintenance and responsive maintenance is to be carried out to ensure the following:

- All signs are still configured as at installation and there is no material damage to any of these products.
- All signs are clean from general dust build up and any other specific obscuring deposits (see Note 2 below).
- All signs are clearly visible and have not been covered up.
- All signs are still illuminated (see Note 1 below).

Note 1. It is recommended that inspection be carried out when the sign is electrically powered up. If the sign is viewed when its electrical supply is disconnected the sign's glow may not be apparent in a well-lit environment.

Note 2. If there is any visible accumulation of dust or other deposits on the face of a *hybrid PL exit sign*, clean it in accordance with manufacturer's cleaning instructions.

4.3 Annual Procedures

Annual inspections of *hybrid PL exit signs* are to be carried out by an *independent qualified person*.

If the *installation documentation* is available, it shall be used as the template for the inspection procedures.

If the *installation documentation* is not available, this shall be noted in the detailed report as a *conformance defect*.

Inspection is to be carried out to check the following:

- No signs have reached the *light source life expectancy*.
- All signs are still configured as at installation and there is no material damage to any of these products.
- 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 signs are still illuminated (see Note 1 above).

SECTION 5 – REPLACEMENT OF SIGNS

Hybrid PL exit signs shall be replaced in the following situations:

- Physical damage has resulted in the sign not being clearly visible to occupants;
- The sign's integrated light source has failed, resulting in the sign not being illuminated when it is connected to the building's electrical supply;
- The sign has passed the *light source life expectancy*.

In order to ensure that replacement *hybrid PL exit signs* meet the relevant performance standard (New Zealand Building Code Clause F8.3.1, F8.3.3 and F8/AS1 4.5.4 January 2017), the signs shall be replaced with *hybrid PL exit signs* that meet the acceptance criteria set down in SA TS 5367: 2021, Clauses 2.3 and 2.4. This includes luminance performance, contrast, and luminance uniformity requirements.