

## Photoluminescent Lighting Council Standard PLCS 101 - Photoluminescent Exit Signs

### PART A - DEFINITIONS

**Charging Illuminance Level:** means the level of illuminance required to charge a Standard PL Sign, being a minimum illuminance of 100 lux on the face of the sign, either from a Dedicated Light Source (with a colour temperature not less than 4000 K) or otherwise.

**Dedicated Light Source:** means a new or existing designated light source or designated group of light sources that are assigned to charge one or more Photoluminescent Exit Signs when natural daylight is below the Charging Illuminance Level.

**Emergency Visibility Enhancement:** means any arrangement of photoluminescent products that enhances emergency visibility and is included in the Installation Documentation. Examples include, but are not limited to, directional signs, low level signs, exit door marking.

**Emergency Visibility System:** means any system, photoluminescent, electrical or otherwise, that provides visibility in an emergency during failure of the normal lighting system.

**Hybrid PL Exit Sign:** means a type of Photoluminescent Exit Sign that incorporates an integrated electrical Dedicated Light Source.

**Hybrid PL Luminance Test:** has the same meaning as defined in ASTM E2073-10 except that Clause 6.1 is replaced with "Method of sampling - for each of 3 representative signs select an area of at least 30mm diameter of the visible photoluminescent portion of the sign that receives the least charging light or produces the least luminance", and Clause 8.3 is replaced with "Activation - activate the 3 samples by connecting to the manufacturer recommended electricity supply for 60 minutes +/- 10 seconds". A pass shall be a minimum luminance of 30 mcd/m<sup>2</sup> at 90 minutes.

**Installation Documentation:** means the documentation detailed in Part C, clause 2.1.

**Lighting Control Systems:** means any system, whether automatic, semi-automatic, or manual, that is designed to ensure that the necessary lighting to charge the photoluminescent materials/components is turned on when required, so that the photoluminescent system is sufficiently charged whenever the building is lawfully occupied.

**Luminance Test:** means either Standard PL Luminance Test or Hybrid PL Luminance Test as appropriate to the type of Photoluminescent Exit Sign.

**Managing Entity:** means the individual or entity managing the building.

**Minor Defect:** means a defect which does not cause the entire system to be ineffective. For example, an unclean or obstructed Photoluminescent Exit Sign or failure of a Dedicated Light Source.

**Modified:** means changed in a way that affects its functionality. For example, a luminaire included in a Dedicated Light Source is moved or replaced with a different type of luminaire.

**Outstanding Defects:** means those defects recorded from the previous inspection which remain unresolved.

**Photoluminescent Exit Sign:** means a sign intended to be used as an exit sign as required by the Relevant Building Code, comprising visually contrasting elements, specifically green or black elements and photoluminescent elements, whereby the photoluminescent elements continue to provide visual contrast with the green or black elements when the normal building lighting fails.

**Qualified Person:** means a person or entity qualified to carry out inspections of Photoluminescent Exit Signs and/or Emergency Visibility Systems.

**Relevant Building Code:** means the National Construction Code (Australia), the New Zealand Building Code or any applicable building code that specifies Photoluminescent Exit Signs.

**Representative Sample:** means 1 of 10, 3 of 50 or 4 of 100 or part thereof for each applicable environment.

**Serious Defect:** means a defect which causes the entire system to be ineffective. For example a failed Luminance Test on a Representative Sample.

**Standard PL Exit Sign:** means a type of Photoluminescent Exit Sign that does not incorporate an integrated electrical Dedicated Light Source.

**Standard PL Luminance Test:** has the same meaning as defined in ASTM E2073-10 except that the activation illumination in clause 8.3 thereunder is replaced with 54 lux. A pass shall be a minimum luminance of 30 mcd/m<sup>2</sup> at 90 minutes.

**UV Durability Test:** is defined as,

*ASTM G 155-2004, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials.*

1. Test the luminance performance of only 2 Representative Samples of the photoluminescent material used in the installed Photoluminescent Exit Sign(s) as per Luminance Test. (This is an exception to ASTM E2073-10 which stipulates 3 or more samples to be tested.)
2. The 2 specimens shall be exposed for a period of 1000 hours in accordance with ASTM G 155. The specimens shall be subjected to Cycle 1 exposure condition noted in Table X3.1 of such standard.
3. After conclusion of the weathering exposure, such laboratory shall directly send the specimens to the luminance performance testing laboratory.
4. The luminance performance testing laboratory shall perform a Luminance Test. The specimens shall both indicate a luminance of at least 30 mcd/m<sup>2</sup> at 90 minutes.

**1000 Hour UV Durability Test:** means the tests defined by UV Durability Test.

**2000 Hour UV Durability Test:** means the tests defined by UV Durability Test but the exposure time is 2000 hours OR the same samples are subjected to two consecutive 1000 Hour UV Durability Tests.

**3000 Hour UV Durability Test:** means the tests defined by UV Durability Test but the exposure time is 3000 hours OR the same samples are subjected to three consecutive 1000 Hour UV Durability Tests.