

Daylight Charging Simulation Test Method for Photoluminescent Egress Path Marking Systems

Background

Photoluminescent path markings which are part of an Egress Path Marking System must continue to provide levels of luminance for a period of time sufficient to ensure safe evacuation of all persons from the building or facility. This test method will determine if the path marker has sufficient luminance for this purpose.

Aim

To determine if a path marker will provide sufficient luminance to be included in a Photoluminescent Egress Path Marking System.

Method

Path markers shall be independently tested as follows.

Three identical product samples measuring 100mm x 100mm are to be conditioned in the dark for a minimum of 72 hours to ensure the samples are fully discharged before exposure to a D65, 5000 lux light source for 60 minutes.

After the charging source is removed luminance is measured using a luminance meter at the following intervals: 120 minutes, 240 minutes, 300 minutes, 480 minutes and 600 minutes.

All testing shall be carried out at a third party test laboratory, with internationally recognised credentials.

Acceptance Criteria (Level 4)

After charging ceases, minimum luminance readings shall not be less than:

54mcd/m² after 120 minutes (2 hours)

23mcd/m² after 240 minutes (4 hours)

18mcd/m² after 300 minutes (5 hours)

10mcd/m² after 480 minutes (8 hours)

8mcd/m² after 600 minutes (10 hours)

Acceptance Criteria (Level 3)

After charging ceases, minimum luminance readings shall not be less than:

39mcd/m² after 120 minutes (2 hours)

17mcd/m² after 240 minutes (4 hours)

13mcd/m² after 300 minutes (5 hours)

7.5mcd/m² after 480 minutes (8 hours)
5.8mcd/m² after 600 minutes (10 hours)

Acceptance Criteria (Level 2)

After charging ceases, minimum luminance readings shall not be less than:

25.0mcd/m² after 120 minutes (2 hours)
10.4mcd/m² after 240 minutes (4 hours)
7.7mcd/m² after 300 minutes (5 hours)
4.5mcd/m² after 480 minutes (8 hours)
3.4mcd/m² after 600 minutes (10 hours)

Acceptance Criteria (Level 1)

After charging ceases, minimum luminance readings shall not be less than:

20.7mcd/m² after 120 minutes (2 hours)
8.7mcd/m² after 240 minutes (4 hours)
6.6mcd/m² after 300 minutes (5 hours)
3.7mcd/m² after 480 minutes (8 hours)
2.9mcd/m² after 600 minutes (10 hours)

Conclusion

All photoluminescent path markings that meet the appropriate level of acceptance criteria are deemed to have sufficient luminance to be included as a Level 1, 2, 3 or 4 component in a Photoluminescent Egress Path Marking System.