

Registered Fire Engineer Scheme

Requirements for Self-contained Luminaires Emergency Lighting Systems

A. Definition

1. Luminaire means an apparatus which distributes, filters and transforms the light given by a lamp or lamps and which includes all the items necessary for fixing and protecting these lamps and for connecting them to the supply circuit. It shall conform to the requirements of BS 5266-1: 2016 and BS EN 1838: 2013 unless otherwise specified below.
2. Self-contained emergency lighting luminaire means a luminaire providing maintained or non-maintained emergency lighting in which all the elements, such as the battery, the lamp, the control unit and the test and monitoring facilities, where provided, are contained within the luminaire or adjacent (i.e. within 1 metre) to it.

B. Specification

3. Emergency lighting luminaires shall be compliant with the glow wire test as stated in sub-clause 13.3.2 of IEC 60598-1 but at a temperature of 850°C.
4. All power cables extended outside the enclosure of a self-contained emergency lighting luminaire, other than the wiring connecting the luminaire to normal supply shall conform to:
 - (a) BS EN 50200: 2015 (PH60) and Annex E of BS EN 50200: 2015 (a duration of survival time of 30 minutes) and one of the following standards:
 - (i) BS EN 60702-1: 2002 + A1 : 2015 & BS EN 60702-2: 2002 + A1 : 2015
 - (ii) BS 7629-1 : 2015 (Cat. Standard 60)
 - (iii) BS 7846: 2015 (Cat. F2 for cables of overall diameter not exceeding 20mm);
or
 - (b) BS 6387: 2013 Cat. CWZ.

Remark: The use of fire resisting cables may be exempted under the relevant conditions stipulated in FSD Circular Letter No. 2/2017 - Minimum Fire Resisting Cable Requirements for Fire Service Installations.

5. An automatic trickle charger with a 220-volt input and suitable output and fitted with pilot lights or other indicating device shall be provided for the batteries. The charger shall be capable of re-charging the battery to 100% of the rated capacity in not more than 12 hours.
6. The self-contained luminaires emergency lighting system shall be capable of maintaining the stipulated lighting levels for a minimum period of 2 hours (rated duration).
7. Upon failure of the normal lighting system or in the event of power failure, the emergency lighting shall automatically light up to at least 90% of the stipulated illumination level within 5 seconds.
8. Each unit shall be provided with a properly labeled "TEST" switch and charge monitor light. A low voltage cut out shall also be provided to disconnect the batteries when fully discharged.

C. Other Requirements

9. At least two sets of emergency lighting luminaire shall be provided in the premises so that the premises will not be plunged into total darkness in the event of luminaire failure. However, if the area of the premises is less than 16m² and a hazardous situation will not occur in the event of luminaire failure, only one set of emergency lighting luminaire will be required. The luminaires shall be permanently fixed in position.
10. The minimum illumination provided at floor level by the emergency lighting systems shall be:

Staircase/exit route	not less than 2 lux
Nightclub, restaurant, dance hall, or premises where people have freedom of movement and there are loose fixtures and fittings	not less than 1 lux

The measurements shall be taken at the mid-point between any two emergency lighting luminaires. All readings shall be taken by an illuminance meter and a discretionary tolerance of minus 10% is permitted.

11. Facilities exceeding 8m² gross floor area and facilities of less than 8m² without borrowed light should be provided with escape lighting complying as if they were part of an escape route. For clarity, escape route means a route forming part of the means of escape from a point in a building to a final exit. Borrowed light means the light obtained from an adjacent reliable source such as emergency lighting luminaires, exit signs and directional signs that is available at all material times. Escape lighting means part of emergency lighting which is provided to ensure the escape route is illuminated at all material times.
12. The emergency lighting system shall be installed/ inspected and certified by a Registered Fire Service Installation Contractor.
13. The self-contained lighting luminaires of the emergency lighting system conforming to the requirements as stipulated in paragraphs B.3 to B.8 above shall be tested and certified by a testing organization recognized by the Fire Services Department or a local university laboratory competent to carry out the relevant tests and certification.
14. Periodic tests shall be carried out to each luminaire according to the following procedures:
 - (a) Once every month a functional test in accordance with BS EN 50172:2004 not longer than 10% of rated duration should be carried out
 - (b) Once twelve-month a full rated duration test should be carried out and result should be entered in a register.
 - (c) The luminaire should be functioning properly to maintain the stipulated lighting level and the normal power supply should be restored after the test.
 - (d) If automatic testing devices are used, Paragraphs C.14 (a) to C.14 (c) above should be complied with.

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