

Testing emergency and escape lighting systems

MOTIVATION

Emergency lighting is an essential safety system in buildings today; the occupants must be assured that it is fully operational at all times. This assurance can only be provided if the system is regularly tested and serviced

STANDARDS

The extent of existing and draft standards defining the requirements to provide effective emergency lighting are an indication of the importance of these vital safety systems. (Guidance on the provision of emergency lighting is included in the Emergency Section of this publication.)

It is clear that the standards are seeking increasing levels of illumination which requires the installation of greater numbers of emergency luminaires and exit signs.

The standards also require these systems to be tested along with the maintenance of accurate records of the installation, its performance, its servicing and any alterations. The more emergency fittings there are the more labour intensive and time consuming these responsibilities will become.

COMPLIANCE

As an example of the expected requirements to test an emergency lighting installation this information has been summarised from the draft European Standard: prEN 50172 covering Emergency escape lighting systems.

The testing required by BS5266 is essentially the same although an additional six monthly partial duration test is requested. Both standards emphasise the need for these tests to be carried out at a time of minimum risk – i.e. when the building is not occupied.

LEGAL OBLIGATIONS

The records to be kept include:

- full 'as fitted' installation drawings
- a detailed log containing at least,
 - date of commissioning
 - details of every test performed, including date
 - service dates with brief details
 - defect reports and remedial action
 - dates and details of alterations
- annual test certificates

The standard permits these records to be maintained and produced by an automatic testing device.

REGULAR TESTING

The minimum level is defined as:

Monthly: Carry out a full functional test on all emergency luminaires, exit signs and escape lighting. This test must be long enough for the correct operation of the lamps to be verified and must not exceed 25% of the rated battery duration. On completion of the test there is required to be confirmation at each point that the mains has been correctly restored. In addition any fault conditions must be indicated.

Annually: As an extension of the monthly test the emergency lights must remain ON for the full duration of the rated battery life. Indications at the end of the test are as those required monthly.

COST OF TESTING

Carrying out the record keeping, and regular testing, by traditional means is clearly going to be a substantial and potentially costly task.

Quantifying the cost of testing is not easy but a typical, conservative estimate follows.

Example costing

A business property containing some 200 self contained, 3 hour duration emergency escape lights which are located in fifteen zones each containing one test keyswitch.

Conducting tests to prEN 50172 using two staff, each costing £20.00 per hour to employ:

Monthly tests take both staff 45 minutes per location. Each monthly test therefore costs £450.00

Annual test (carried out when the building is unoccupied) takes both staff twelve hours to cover the building at premium 'time and half' rates. This test is carried out in phases and requires them to return to each location to check the 3 hour duration has been achieved; then they must reset all keyswitches and return to each fitting to check the 'charge healthy' indicators and log all results etc. Each annual test therefore costs £720.00

The result is that this routine testing – without any remedial work – costs the building operator at least £5,670.00 every year.

There is now a lower cost alternative. Whitecroft Lighting can provide a comprehensive emergency lighting test and monitoring system from their innovative LIGHTmaster range. (See LM20 and LM120: pages 122 and 123)

