

Emergency Lighting Regulations

The Building Regulations 2000

These regulations detail the design and construction characteristics of a building. Approved Document B details the fire safety requirements for new buildings and the major refurbishment of existing premises. Table 9 of this document shows the locations that must be provided with emergency lighting. It now defines that in addition to escape routes, all open areas larger than 60m² must be illuminated in the event of the failure of the normal lighting supply. It also clarifies that emergency lighting is needed for all parts of schools that either do not have natural light or are used outside normal school hours. The regulations require that systems comply with BS 5266-1, the code of practice for emergency lighting.

The Fire Precautions (Workplace) Regulations 1997

This directive controls the way that the building will be used and the equipment and systems needed to safeguard the occupants. The legal requirement is that - "Emergency routes and exits requiring illumination must be provided with emergency lighting of adequate intensity in case the lighting fails". The law is explained and the rules for compliance are given in a joint Home Office and Health & Safety Executive document - "FIRE SAFETY - An employer's guide". Main points from the guide are:

- The employer has legal responsibility for compliance
- Although the legislation uses and modifies the Fire Precautions Act 1971, it now covers all premises where people are employed
- Any site with five or more employees must keep a formal record of Fire Risk Assessment. This should evaluate the site and detail the measures taken to ensure the safety of the premises
- If the premises already have a fire certificate to the latest standards the employer still needs to provide a risk assessment, but it is unlikely that they will need any additional equipment. If however the fire certificate was issued prior to 1999, when BS 5266-1 was revised, the risk assessment needs to check whether improvements are needed to meet the latest standard
- The evaluation of areas with a fire risk assists when deciding which areas need protection, e.g. a school chemical laboratory may be smaller than 60m² but still need emergency lighting, as combustible materials and sources of ignition would be present.
- The assessment of the location of employees and any visitors to the site assist in determining the most appropriate escape routes.
- The guidance to the directive gives detailed requirements for the suitability of escape routes and calls for the installation of emergency lighting to be in accordance with BS 5266-1
- It recommends that advice on the installation should be given by a competent person who specialises in emergency lighting systems.

- Continued maintenance and testing must be correctly carried out, to comply with the directive.
- The equipment used must be capable of being demonstrated as of adequate quality. Compliance with the appropriate British Standard, or other approved third party scheme, gives evidence of this. The standard for luminaries is BS EN 60598-2-22. ICEL 1001 registration endorses the spacing data of these luminaries. The standard for central battery systems is BS EN 50171

Note: When the premises are being assessed for risk, shortcomings in other areas of fire protection can be compensated for by improved levels of emergency lighting and fire alarms.

Compliance with BS5266-1:1999 is deemed to comply with these requirements.

The Health and Safety (Safety Signs and Signals) Regulations 1996

This regulation requires the adequate provision of signs protected by emergency lighting. It details that signs should be located at all final exits and also on the escape routes at any location where the route may be in doubt.

Other Requirements

In addition to fire safety legislation, some workplaces require a licence from the Local Authority, including theatres and cinemas, sport stadiums and premises for public entertainment, music, dancing, gambling and the sale of alcohol. Other premises must be registered with the Local Authority and be inspected by the Fire Authority, including nursing homes, children's homes, residential care homes and independent schools. Both licensed and registered premises have to pass a fire inspection to confirm that they have systems complying with BS 5266-1 for the emergency lighting and BS 5839 for fire equipment. Records of a system are now essential to maintain the validity of approvals and licences.

Emergency Lighting - System Design

This section provides guidance on system design to meet BS 5266 Parts 1 and 7: 1999 and so achieve compliance with legislation.

Design Objective

BS 5266, when referring to the provision of Escape Lighting in section 4.2, requires that when the supply to all or part of the normal lighting in occupied premises fails, escape lighting is required to fulfil the following function:

- (a) To indicate clearly and unambiguously the escape routes.
- (b) To provide illumination along such routes to allow safe movement towards and through the exits provided.
- (c) To ensure that fire alarm call points and fire fighting equipment provided

along escape routes can be readily located.
(d) To permit operations concerned with safety measures.

BS 5266-1 recommends that discussions should be held prior to commencing the design, to establish the areas to be covered, the method of operation, the testing regime and the most suitable type of system. These discussions should include the owner or occupier of the premises, the system designer, the installer, the supplier of the equipment and the fire authority.

Note: BS5266 will be revised during 2004 following the publication of EN50172. Visit the British Standards Institute website, at www.bsi-global.com for the latest information.

TESTING AND LOG BOOK

The Fire Precautions (Workplace) Regulations 1997 require that appropriate testing is performed to maintain compliance of the system. The system should include adequate facilities for testing and recording the system condition. These need to be appropriate for the specific site and should be considered as part of the system design. Discussions with the user or system designer should identify:

- The calibre and reliability of staff available to do the testing
- The level of difficulty in performing the test
- If discharge tests need to be done outside normal working hours, or phased so only alternate luminaires are tested in buildings that are permanently occupied

The testing requirements in the code of practice are:

• Function test

All emergency luminaires should be tested by breaking the supply to them and checking that they operate satisfactorily.

The supply must then be restored and the charging indicators must be seen to be operating correctly. This test must be performed at least once per month and the results logged

• Discharge test

The luminaires must be tested for their full rated duration period and checked for satisfactory operation. The supply must then be restored and the charging indicators rechecked. This test must be performed at least annually and the results logged

Note: BS 5266-1: 1999 allows a one hour test to be performed as an alternative every six months for the first 3 years of the system, but the guidance document to the Fire Precaution Regulations calls for the annual test at all stages of equipment life.

MANUAL TESTING

If manual testing is utilised, the following points should be considered:

- Is a single switch to be used? Unless the whole building is to be switched off, a separate switch should be used for each final circuit. As the feed to non-maintained circuits must be taken from the switch this will probably mean that the building will have to be walked around twice, once to check the luminaires and once to check that they are recharging
- Are luminaires to be individually switched? In practice, only a single walk around the building will be needed. However, the test switches could spoil the décor of the building and they must be of a type that is tamper proof.
- After the tests, the performance of the luminaires must be logged.

COMMISSIONING CERTIFICATE

BS5266 Pt 1: 1999 and the European Standard both require written declarations of compliance to be available on site for inspection. These consist of:

- Installation quality.
IEE regulations must have been conformed with and non-maintained fittings fed from the final circuit of the normal lighting in each, as required in BS 5266
- Photometric performance.
Evidence of compliance with light levels has to be supplied by the system designer. Photometric tests for Cooper Lighting and Security luminaires are performed at BSI and spacing data is registered by the ICEL scheme. Therefore copies of the spacing data in this catalogue provide the verification required.
- Declaration of a satisfactory test of operation.
A log of all system tests and results must be maintained. System log books, with commissioning forms, testing forms and instructions are available from Cooper Lighting and Security.

MAINTENANCE

Finally, to ensure that the system remains at full operational status, essential servicing should be defined. This normally would be performed as part of the testing routine, but in the case of consumable items such as replacement lamps, spares should be provided for immediate use.