



## Emergency Lighting Design Guide

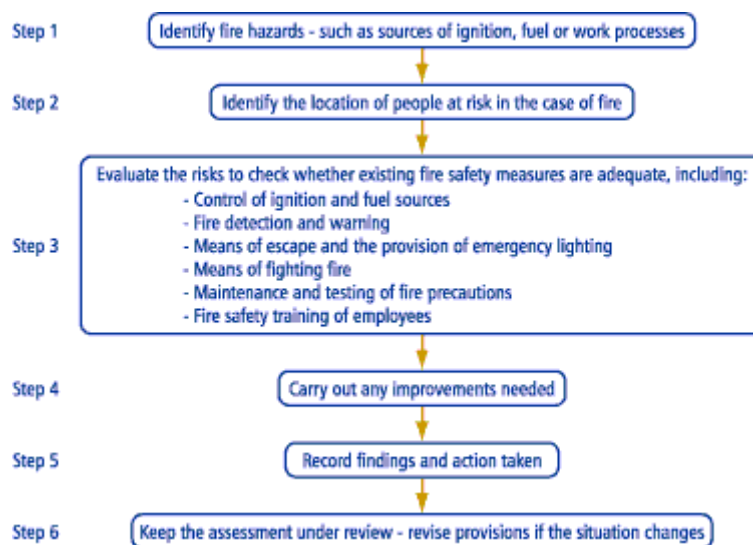
### Legal Requirements

The main reason for installing an emergency lighting system is to enable the building to meet fire safety legislation in a way that is visually acceptable and meets the user's needs for ease of operation and maintenance. Consequently it is important to establish all the relevant legal requirements for emergency lighting and fire alarm systems before commencing the design these should ideally be agreed between the system designer, user, fire authority, building control officer and system installer.

The main legislative requirements are:

### 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 60m<sup>2</sup> 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

From this directive there are a number of points that are of major importance to emergency lighting system design.

- 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 60m<sup>2</sup> 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,

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gives evidence of this. The standard for luminaires is BS EN 60598-2-22. ICEL 1001

registration endorses the spacing data of these luminaires. 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 Part 1 2005 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

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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](http://www.bsi-global.com) for the latest information.