

# Emergency Escape Lighting

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The primary purpose of emergency escape lighting is to illuminate escape routes but it also illuminates other safety equipment. The size and type of your premises and the risk to the occupants will determine the complexity of the emergency escape lighting required. Borrowed lighting may be suitable in small premises where the light is from a dependable source, e.g. street lamps, and it will adequately illuminate escape routes. Where borrowed lighting is not suitable, then a number of torches, in strategic positions, can be considered. Single 'stand-alone' escape lighting units may be sufficient in small premises and these can sometimes be combined with exit or directional signs. The level of general illumination should not be significantly reduced by the sign.

In larger more complex premises a more comprehensive system of fixed automatic escape lighting is likely to be needed. This will be particularly true in premises with extensive basements or where there are significant numbers of staff or members of the public.

You will have identified the escape routes when carrying out your fire risk assessment and need to ensure that they are all adequately lit. If there are escape routes that are not permanently illuminated by normal lighting, such as external stairs, then a switch, clearly marked 'Escape lighting', or some other means of switching on the lighting should be provided at the entry to that area/stairs.

## **An emergency escape lighting system should normally cover the following:**

- Each exit door;
- escape routes;
- Intersections of corridors;
- Outside each final exit and on external escape routes;
- Emergency escape signs;
- Stairways so that each flight receives adequate light;
- Changes in floor level;
- Windowless rooms and toilet accommodation exceeding 8m<sup>2</sup>;
- Firefighting equipment;
- Fire alarm call points;
- Equipment that would need to be shut down in an emergency;
- lifts; and
- Areas in premises greater than 60m<sup>2</sup>.

## Maintained, non-maintained and switchable emergency lighting

"Emergency escape lighting can be both 'maintained', i.e. on all the time, or 'non-maintained', which only operates when the normal lighting fails. Systems or individual lighting units (luminaires) are designed to operate for durations of between one and three hours after the mains power supply fails. In practice, the three-hour design is the most popular and can help with maintaining limited continued use of the premises during a power failure (other than in an emergency situation)".

Maintained emergency lights usually have two values for lumens (the measure of luminous flux, i.e. light flow, from a light source) in their technical description: a value for the output when the light is powered by the mains supply and another for the output when the emergency light is powered by the back-up battery. The latter is usually around 10 per cent of the full output.

Maintained emergency lights are often available as switchable units. This means that they can be switched between maintained and non-maintained modes of operation using an ordinary, wall-mounted light switch. This is useful in areas where there is no requirement for constant lighting, e.g. stairwells in a high-rise block of flats, where the light is only required when somebody takes the stairs instead of the lift. The emergency lights will, of course, still come on in case of a power failure, even when the switch is in the 'off' position. However, as indicated above, the emergency light output will be about 90 per cent lower than usual.

A disadvantage of non-maintained emergency lighting is that the condition of the lamp can only be ascertained through regular testing; it is no good waiting for a power cut to discover that it isn't working. This problem can be overcome, however, by installing self-testing emergency lights.

Non-maintained operation is usually favoured wherever possible, being cheaper in terms of energy consumption and the life of the fitting's components. In some premises, however, such as theatres and cinemas, the luminaires must always be lit, i.e. in maintained mode, so there is sometimes no choice in the matter.

In respect of maintained emergency lighting in areas where high levels of light are normally required, for example in the corridors of office blocks, a combined or sustained emergency luminaire can be installed. This type of unit contains two or more lamps, at least one of which is energised by the emergency supply and the rest by mains electricity. The mains powered part of these lights can usually be controlled by ordinary light switches. Typically, all the lamps will be lit under normal circumstances, but if the electricity supply should fail just the emergency lamp(s) will come on, powered by the battery.

## Maintenance and testing of emergency escape lighting

Government guidelines (Fire safety risk assessment: offices and shops, p 101) state that all emergency escape lighting systems should be regularly tested and properly maintained to an appropriate standard (i.e. BS 5266 - Code of practice for the emergency lighting of premises). This testing has traditionally been undertaken manually although, as noted above, emergency luminaires are available with a self-test facility.

Depending on the type of installation, trained members of staff should be able to carry out most of the routine tests by themselves. As the test methods will vary, there may be some doubt, in which case it is recommended that advice is sought from the supplier or another competent person.

A typical test is via a key operated switch that is located either near the main fuse board or adjacent to relevant light switches. This is also known as a 'secret key' switch, as it designed to allow testing of emergency lights while preventing non-authorized operation of the test switch.

### **Testing would usually include the following:**

- A daily visual check of any central controls if a centrally powered system with slave luminaires is installed;
- A monthly function test by operating the test facility for a period sufficient to ensure that each emergency lamp illuminates; and
- An annual full discharge test to ensure that the lamps are lit for the full discharge period (usually 3 hours) and that the batteries are re-charging

Particular care needs to be taken following a full discharge test. Batteries typically take 24 hours to re-charge and the premises should not be re-occupied until the emergency lighting system is fully functioning, unless alternative arrangements have been made.

It is best practice to keep a record of all tests in the fire safety logbook.