WHY SAVING A FEW EXTRA POUNDS ON EMERGENCY LIGHTING CAN BE DANGEROUS

When it comes to designing emergency lighting, there are many factors to consider. Peter Adams, Mackwell’s Central Service and Training Manager explains more.

Not only must the emergency lighting system be fit for purpose, but it must also meet stringent safety and compliance standards. Meeting these standards can impact financially, both in terms of the design and specification, through to the installation, and the ongoing maintenance of the system. Often portrayed as a necessary but unattractive part of the lighting scheme, emergency lighting is, in fact, a safety critical system and is a legal requirement within commercial premises. It is provided to help facilitate the immediate and safe evacuation of occupants from the premises in times of emergency and, as such, must be afforded the same importance and diligence of other such systems. Short cuts and corner cutting such as the specification of sub-standard components and ineffective maintenance schedules, brought about by budgetary constraints can all result in non-compliances, compromising the safety of the building occupants.

One of the most fundamental aspects of building safety, the provision of an adequate emergency lighting system can often be overlooked. Its importance, however, is critical in ensuring the safety of employees and members of the public. Emergency lighting provides guidance and illumination of a sufficiently high level to enable all occupants to evacuate the premises safely at times of emergency. The consequences of a non-compliant emergency lighting system can impact severely on the health and safety of occupants, resulting in prosecutions such as fines and custodial sentences depending on the level of non-compliance.

British Standards
With the extensive revision of BS 5266 – 1: Code of practice for the emergency lighting of premises (released May 2016 and brought into force in June 2017), the way designers approach emergency lighting has fundamentally changed. Despite better defined responsibilities and more detail on emergency safety lighting and standby lighting requirements, the area is now more complex with greater scope for confusion between parties responsible for the design, installation, testing/commissioning and ongoing performance of the emergency lighting system.

As with most aspects of health and safety, there are many national and international standards in place to ensure that such systems can perform the tasks demanded of them. It is, therefore, imperative that the constituent components of the emergency lighting system are selected, designed and installed to the specific criteria within these standards, ensuring compliance and performance of both the components and the system as a whole. The Code of practice, BS 5266:1999-2016, is an essential point of reference. Its accompanying standard, BS 5266 Part 7 – EN 1838: 2013, defines the minimum lux levels and photometric requirements when designing the emergency lighting scheme. Also in place is the standard, BS EN 60598-2-22: 2014, for luminaires used in emergency lighting and ensures that they achieve the performance required whilst remaining electrically and mechanically safe.

In addition, the European Application Standard with improved testing regimes, EN 50172: 2004, is a vital supporting part of the BS 5266 series.

The design objective for any emergency lighting system is established by BS 5266 Section 5.2.1 which says that, when the supply to the normal lighting fails, emergency lighting is required to:

- indicate clearly the escape routes
- provide illumination along such routes to allow safe movement through the exits
- ensure that fire-alarm and fire-fighting equipment can be readily located.

British and European Standards provide guidance on the implementation of requirements and solutions, on sustainability and energy use, guidance on required equipment, lighting for specific specialist areas as well as guidance on the installation process, testing and commissioning – all of which need to be considered at the start of the design process.

It is also important for the manufacturer to understand the intended environment for the luminaire in order to specify the correct safety components. Although there is currently no legislation covering the use of LS ZH (low smoke, zero halogen) components, it is recommended that LS ZH be used in fittings specified for use in large public areas where there is a risk of fire. This will minimise the risk from the after-effects of an electrical fire, such as gas and smoke inhalation. For example, after the King’s Cross fire in 1987, LS ZH sheathing became mandatory for all electrical wiring in London Underground Stations.

Compliance
In order for the emergency lighting system to remain compliant throughout its lifetime, structured and effective maintenance is essential. The system requires testing in line with the requirements specified in BS EN 50172, together with any remedial action which is identified by these tests. Routine visual inspection of the system is also fundamental to check for any changes to décor, colour schemes, fabric and structure together with any reparations which may impact the designed scheme. Unlike a fire alarm system which is generally