

## Benchmarking emergency luminaires brings many benefits

**ICEL - the emergency lighting arm of the Lighting Industry Federation (LIF) – takes the risk out of specifying emergency lighting and ensures that, through compliance, luminaire performance has been independently verified.**

*Monday 19 June 2010, London* - ICEL's benchmarking of emergency lighting luminaires gives peace of mind to manufacturers, lighting designers, installers and end-users. However, ICEL does a great deal more than this because, as a leading technical authority in emergency lighting, it publishes luminaire spacing tables, provides associated training and, uniquely, benchmarks emergency lighting batteries. These benefits bring complete confidence that emergency lighting installations are fully fit for purpose in protecting people and property.

### **Legislative requirements**

Under the Fire Safety Order (FSO), which concerns non-domestic premises having employees or guests in England and Wales (Scotland and Northern Ireland have equivalent legislation), Fire Protection Officers (FPOs) can use their powers of enforcement where fire protection and emergency lighting systems have been found wanting. This is now happening, more people are being prosecuted, and sentences are becoming increasingly severe.

The responsible person has to risk assess premises by checking fire safety equipment.

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He or she must identify any upgrades required, and must also either obtain third party assurance for fire safety equipment (including emergency lighting), or must demonstrate - possibly in a court of law - that the fire safety equipment is of 'equivalent quality'.

### **The benefits of benchmarking**

The benefits of benchmarking are, therefore, clear - the equipment is fit for purpose. As a leading technical authority in emergency lighting, including standards development, ICEL provides such independent third party benchmarking (registration). If an ICEL member company supplies an emergency lighting luminaire for benchmarking, it means that upon successful completion of the BS EN 60598-2-22 tests, the submitted emergency luminaire, its manufacturer and the manufacturer's performance claims have been independently approved. It can then be demonstrated to inspecting fire authorities that the equipment is of the quality required. So, even though benchmarking is not a legal requirement, by specifying ICEL approved luminaires, clients can be certain that their professional reputations are protected.

Most importantly, benchmarking will help protect people's lives because, in an emergency, the equipment will operate correctly, allowing safe evacuation of the building and providing light for emergency services.

In particular, use of ICEL registered emergency lighting products ensures that:

- Emergency luminaire lighting performance has been independently verified, supports good installation design, and has been manufactured according to requirements.
- Associated electronic components will last at least eight years, and the batteries will provide the full rated duration for at least four years at rated ambient temperature.

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- The photometric spacing tables are authenticated to ensure that luminaire locations can be easily determined.
- There is direct access to technical support, the emergency lighting manufacturer concerned receives ISO 9001:2008 accreditation, is experienced, reliable and will provide a full after sales service.

So, although benchmarking has a financial cost, the end result is usually a lower total cost of ownership over the product lifespan - a significant benefit in itself.

It is still essential to regularly test emergency lighting luminaires manually or automatically according to the recommended test schedule specified in BS 5266 Pt 8/EN 50172. Any required maintenance must be carried out.

### **Benchmarking emergency lighting batteries**

Batteries can overheat dangerously under fault conditions, yet must always be available to power emergency lighting lamps when required. ICEL, therefore, provides a third party battery certification and registration service scheme called ICEL 1010. It is thought that this is the only such testing carried out anywhere in the world, and it ensures that batteries operate within prescribed temperature limits over the full charge /discharge cycle and that the luminaire meets its performance claims. Benchmarked batteries will work properly for at least the required four years under worst-case conditions – this too means peace of mind.

### **Testing procedures**

BS EN 60598-2-22 photometric performance and other tests ensure that all emergency luminaire components operate correctly. Tests check minimum light output and

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distribution in five degree steps around the fitting and at 0 and 90 degrees. The data obtained is used to design systems complying with BS EN 1838/BS 5266-7, which require that luminaire rated performance is available through, and to the end of the rated discharge. Testing also proves that all electrical safety and EMC limits are met, and that each luminaire will operate at elevated temperature to assist evacuation during fire conditions.

### **Other ICEL benefits**

Installers may have considerable problems with emergency lighting spacing, so ICEL publishes its Authenticated Spacing Tables. These provide the information installers need to help them decide whether or not extra fittings are needed. For specific mounting heights, as long as the spacings derived from the Authenticated Spacing Tables are complied with, the minimum light level on the centre line will be correctly provided.

ICEL also provides de-rating guidance if the photometric performance data is used as input for CAD design of emergency lighting. Without it, reliable, accurate system design is not possible. EN 1838 promotes the use of these forms of authenticated data, because it is a lengthy and difficult procedure to obtain accurate results using light meters.

### **Training benefits**

ICEL maximises its great expertise in all things emergency lighting by holding one-day Emergency Lighting Competent Engineer courses. These, comprising the essential aspects of BS5266, Parts 1,7,8,10, refer to the test and servicing recommendations. Upon passing the tests, delegates qualify for an ICEL Certificate. There are no entry requirements but applicants should be working in some aspect of lighting relevant to the course. Contact John Hugill on 07968 400 820 or email [john@lif.co.uk](mailto:john@lif.co.uk). All of the above benefits provide a responsible approach to good lighting, with best sustainable results to clients, bringing complete confidence that emergency lighting installations are fully fit for purpose in protecting people and property.

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## Notes for editors

### 1) Effects of legislation

The Fire Safety Order (FSO), which concerns non-domestic premises having employees (such as businesses), or guests (such as hotels) in England and Wales, has resulted in significant alterations to the ways in which all premises are assessed and made safe. The main effect has been a greater emphasis on fire prevention in such premises, which include the voluntary sector and self-employed people having premises separate from their homes.

An important change is that no longer is it the Fire Service's duty to make sure the workplace is safe. That duty lies with the 'responsible person', who is held accountable under the new legislation. This is a profound cultural change with major practical implications.

Although the Government has given responsible persons the authority to oversee their premises' fire safety, Fire Protection Officers (FPO) will audit Fire Risk Assessments and associated documentation relating to any premises. The responsible persons will then be informed of their compliance or otherwise. If there are concerns, FPOs can and do use their powers of enforcement.

### 2) Emergency lighting under BS EN 60598-2-22

**Self-contained luminaires** - These provide maintained or non-maintained emergency lighting in which all the elements (such as the battery, lamp, control unit, and test and monitoring facilities where provided) are contained within the luminaire or adjacent to it (within 1m cable length).

**Centrally supplied (slave fittings)** - In these fittings, the lamp and some of the control gear is located in the luminaire, but the charger and battery (and often the changeover device) is located remotely, providing the supply to a number of luminaires. Central power units may supply the luminaires with a range of DC voltages, or at 230V AC from an inverter. To operate on DC, some are specifically designed as emergency luminaires; others are converted mains luminaires.

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