ICEL

Guide

For ICEL Members

MAY 99

ICEL 1006 :

EMERGENCY LIGHTING DESIGN GUIDE

Contents

Foreword

This Guide has been prepared by the Industry Committee for Emergency Lighting (ICEL) to promote a wider understanding of the different types of emergency lighting and to give guidance on their correct application.

The Guide considers the requirements of the new European draft standards as well as the current legislation and codes of practice. Although some new standards are still in draft form, the content of these documents is reasonably well established. When the harmonised European standards are available, they will replace many of the current requirements of BS 5266: Pt 1: 1988 Information is provided on the difference between the current requirements and those of the new European standards. The new harmonised European standards may be retrospectively introduced after a transitional period. ICEL recommends therefore that emergency lighting is designed and installed to the new standards to avoid costly modifications at a later stage.

A reasonable working knowledge of emergency lighting is assumed on the part of the reader. Further information can be obtained from ICEL at the address below:

The Industry Committee for Emergency Lighting
Swan House
207 Balham High Road
London SW17 7BQ

Most ICEL member companies can also provide detailed information and guidance about both current and future emergency lighting requirements and many offer a free scheme design service. The addresses of ICEL member companies can be found at the back of this document.

Throughout this document, the most up-to-date information available has been used by ICEL. Some documents referred to, and some requirements, are still undergoing review, so please contact ICEL for advice on any changes that may affect the guidance contained in this document.

Compliance with this Guide does not of itself confer immunity from legal obligations.

May 1999

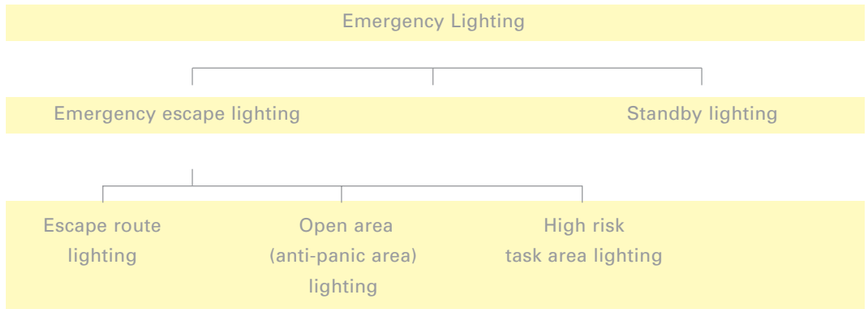
Press Flash - EN 1838

The European Standard for Emergency Lighting Applications was voted positive!

Emergency Lighting Terminology

For the purposes of the European standard EN 1838, emergency lighting is regarded as a generic term of which there are a number of specific forms, as shown in the figure below:

Specific Forms of Emergency Lighting



Emergency escape lighting

That part of emergency lighting provided to enable safe exit in the event of failure of the normal supply.

Standby lighting

That part of emergency lighting provided to enable normal activities to continue in the event of failure of the normal mains supply.

Escape route lighting

That part of emergency lighting provided to enable safe exit for building occupants by providing appropriate visual conditions and direction finding on escape routes and in special areas/locations, and to ensure that fire fighting and safety equipment can be readily located and used.

Open area (or anti-panic area) lighting

That part of emergency escape lighting provided to reduce the likelihood of panic and to enable safe movement of occupants towards escape routes by providing appropriate visual conditions and direction finding.

High risk task area lighting

That part of emergency lighting provided to ensure the safety of people involved in a potentially dangerous process or situation and to enable proper shut down procedures to be carried out for the safety of other occupants of the premises.

Definitions

BALLAST

Controls the operation of a fluorescent lamp from a specified AC or DC source (typically between 12 and 240 volts). It can also include elements for starting the lamp, for power factor correction or radio frequency interference suppression.

BALLAST LUMEN FACTOR (BLF)

The ratio of the light output of the lamp when the ballast under test is operated at its design voltage, compared with the light output of the same lamp operated with the appropriate reference ballast supplied at its rated voltage and frequency.

BATTERY

Secondary cells providing the source of power during mains failure.

BATTERY SEALED (RECOMBINATION)

A battery that is totally sealed, or constructed so that no provision is made for replacement of electrolyte.

BATTERY UNSEALED (VENTED)

A battery that requires replacement of electrolyte at regular periods.

BATTERY CAPACITY

The discharge capability of a battery, being a product of average current and time, expressed as ampere hours over a stated duration. Note that a shorter total discharge period gives rise to a smaller available capacity.

CENTRAL BATTERY SYSTEM

A system in which the batteries for a number of luminaires are housed in one location, usually for all the emergency luminaires in one lighting sub-circuit, sometimes for all emergency luminaires in a complete building.

COMBINED EMERGENCY LUMINAIRE (SUSTAINED)

Contains two or more lamps at least one of which is energised from the emergency supply and the remainder from the normal supply. The lamp energised from the emergency supply in a combined emergency luminaire is either maintained or non-maintained.

DESIGN VOLTAGE

The voltage declared by the manufacturer to which all the ballast characteristics are related.

EMERGENCY EXIT

A way out which is intended to be used any time that the premises are occupied.

'F' MARK

Shows the luminaire can be mounted on combustible surfaces. It does not show that the luminaire is fire retardant.

FINAL EXIT

The terminal point of an escape route, beyond which persons are no longer in danger from fire or any other hazard requiring evacuation of the building.

FIRE RETARDANT HOUSING 850°C TEST

All emergency luminaires on escape routes must pass this test as specified in EN 60 598-2-22.

ILLUMINANCE

The luminous flux density at a surface, i.e. the luminous flux incidence per unit area. The unit of illuminance is lux.

LUMINAIRE

An apparatus which distributes, filters and transforms the lighting given by a lamp or lamps and includes all the items necessary for fixing and protecting these lamps and for connecting them to the supply circuit. Note that internally illuminated signs are a special type of luminaire.

MAINTAINED EMERGENCY LUMINAIRE

A luminaire containing one or more lamps all of which operate from the normal supply or from the emergency supply at all material times.

MOUNTING HEIGHT

The vertical distance between the luminaire and the working plane. Note that the floor is taken to be the working plane for emergency lighting.

NON-MAINTAINED EMERGENCY LUMINAIRE

A luminaire containing one or more lamps, which operate from the emergency supply only upon failure of the normal mains supply.

NORMAL LIGHTING

All permanently installed artificial lighting operating from the normal electrical supply, that in the absence of adequate daylight, is intended for use during the whole time that the premises are occupied.

RATED DURATION

The manufacturer's declared duration, specifying the time for which the emergency lighting will provide the rated lumen output after mains failure. This may be for any reasonable period but is normally one or three hours.

RATED LOAD

The maximum load that may be connected to the system and will be supplied for the rated duration.

RE-CHARGE PERIOD

The time necessary for the batteries to regain sufficient capacity to achieve their rated duration.

ROOM INDEX

The relationship between the height, length and width of a room used for illuminance calculations.

SELF-CONTAINED EMERGENCY LUMINAIRE OR SINGLE POINT LUMINAIRE

A luminaire or sign providing maintained or non-maintained emergency lighting in which all the elements such as the battery, the lamp and the control unit are contained within the housing or within one metre of the housing.

SLAVE OR CENTRALLY SUPPLIED LUMINAIRE

An emergency luminaire without its own batteries designed to work with a central battery system.

Initial Considerations

Emergency lighting is an essential part of the building services installation.

To ensure the system is well designed and as reliable as possible, ICEL stresses the importance of planning through all phases of the project, from considering legal requirements to final commissioning and maintenance. Consultation between all interested parties at an early stage of the design cannot be overemphasised to avoid expensive modifications to the completed system. Considerable legislation and associated standards exist covering the various types of premises that involve the need to incorporate emergency lighting. These are referred to later in the Guide.

The first stage of system design is to gather the information needed on the project, normally by consultation with the Regulatory Authority and the user. This should cover legislative and likely operational requirements, and customer preferences.

Essential Pre-Design Information

Before designing an emergency lighting scheme the following information needs to be determined from the site drawings or from the specifier:

(I) The duration of the emergency lighting:

a) Three hour duration is required in places of entertainment and for sleeping risk;

b) Three hour duration is required if evacuation is not immediate, or early re-occupation is likely to occur;

c) One hour duration may be acceptable, in some premises, if evacuation is immediate and re-occupation is delayed until the system has recharged.

(II) Emergency lighting should be of the maintained type in areas in which the normal lighting can be dimmed. In addition, the draft standard prEN 50172 stipulates that emergency lighting is of the maintained type in common areas within shopping malls where a build-up of smoke could reduce the effectiveness of normal lighting.

(III) The draft standard prEN 50172 requires that exit signs are of the maintained type where the premises are used by people who are unfamiliar with its layout.

(IV) Building plans need to be assembled showing the location of the fire alarm call point positions, the positions of fire fighting equipment, and fire and safety signs.

(V) Emergency escape routes should be established, and potential hazards investigated.

(VI) Open areas larger than 60m² floor area should be identified.

(VII) High risk task areas should be identified and normal lighting levels established.

(VIII) The need for external illumination outside final exit doors and on a route to a place of safety should be determined.

(IX) Other areas that need illumination, although not part of the escape route, should be located, e.g. lifts, moving stairways and walkways, plant rooms and toilet accommodation over 8m² gross area.

(X) If a central system is being used, the locations of central battery units and cable runs should be established in areas of low fire risk.

(XI) For non-maintained applications the area covered by the final circuit of the normal lighting has to be determined as it must be monitored by the central system. Non-maintained self-contained luminaires must be fed from that final circuit.

(XII) Standby lighting requirements should be established if activities need to continue during a failure of the normal lighting supply.

(XIII) The customer's preference and operating considerations should be ascertained, e.g. ceiling heights, mounting heights or wall mounting.

Design of New Installations

System design to meet BS 5266: Pt 1: 1988 and requirements of European and draft European standards.

Design Objective

When the supply to any part of the normal lighting fails, the requirements of BS 5266 and EN 1838 apply and escape lighting is required to fulfil the following functions:

(I) Show clearly and unambiguously the escape routes.

(II) Provide illumination along such routes to allow safe movement towards and through the exits provided.

(III) Ensure that fire alarm call points and fire fighting equipment provided along escape routes can be readily located.

(IV) Allow operations concerned with safety measures to continue.

Stage 1

Design procedure

Locate luminaires at points of emphasis. These are mandatory locations to cover specific hazards and to highlight safety equipment and signs.

This should be performed regardless of whether the area is an emergency escape route or defined as an open area. Only when this is accomplished should the type of luminaire or its light output be considered.

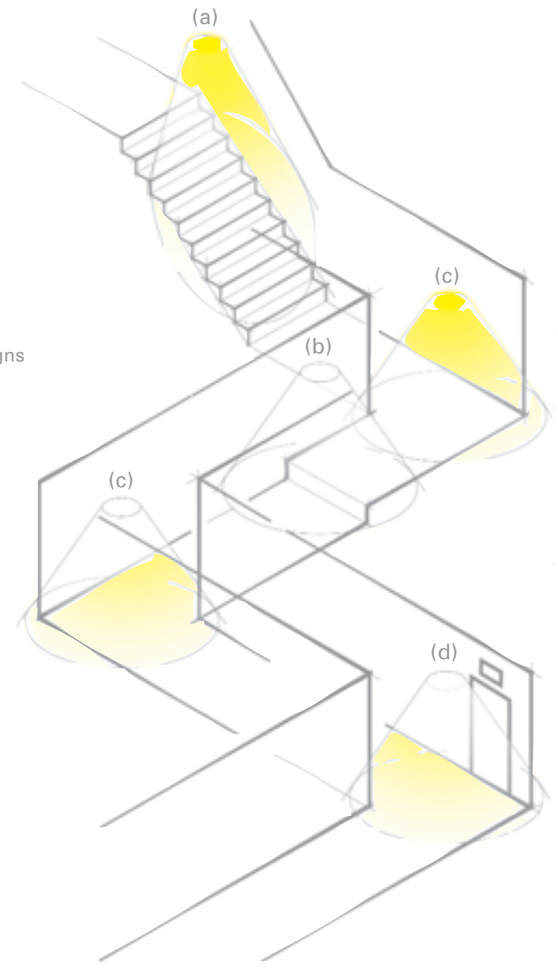
SITING OF LUMINAIRES

(a)
Near stairs
Note: on long flights of stairs more than one luminaire will be required so that each tread receives direct light.

(b)
Near changes of level

(c)
Near each change of direction

(d)
To illuminate Exit doors and safety signs



Note: 'Near' is defined as being within 2m of horizontal height.

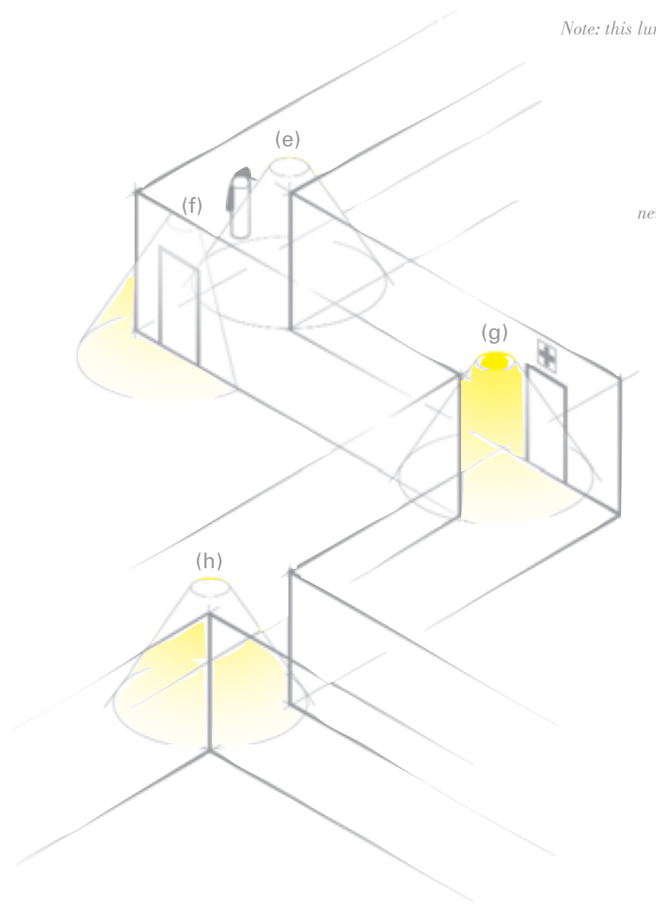
SITING OF LUMINAIRES

(e)
Near each piece of fire fighting equipment or call point
Note: this luminaire also illuminates change of direction.

(f)
Outside and near to each final exit

(g)
Near each First Aid point
new category not previously covered in BS5266
Note: this luminaire also illuminates change of direction.

(h)
Near each intersection of corridors



Stage 2

The location of exit signs

Section 5.6 of BS 5266 and EN 1838 state that:

"Signs are required at all exits, emergency exits and escape routes, such that the position of any exit or route to it is easily recognised and followed in an emergency . Where direct sight of an exit or emergency exit is not possible and doubt may exist as to its position, a directional sign (or series of signs) should be provided, placed such that a person moving towards it will be progressed towards an exit or emergency exit."

The format of signs

1975

To be replaced by 24 December 1998

1990

Deemed to comply with Signs Directive for existing installations

1996

HSE Signs Directive Format

The following advice is based on the Health and Safety Executive guidance on the Regulations (L64):

BS 2560 SIGNS

These signs should have been replaced by 24 December 1998. ICEL recommends that care should be taken as the new pictogram formats with larger areas of green colour will significantly reduce luminaire light output and installations may require additional emergency illumination to compensate for the change.

BS 5499: PT 1: 1990

These signs - already installed - are of a similar pattern to the Signs Directive and are considered to comply with the regulations and do not need to be replaced.

SIGNS DIRECTIVE

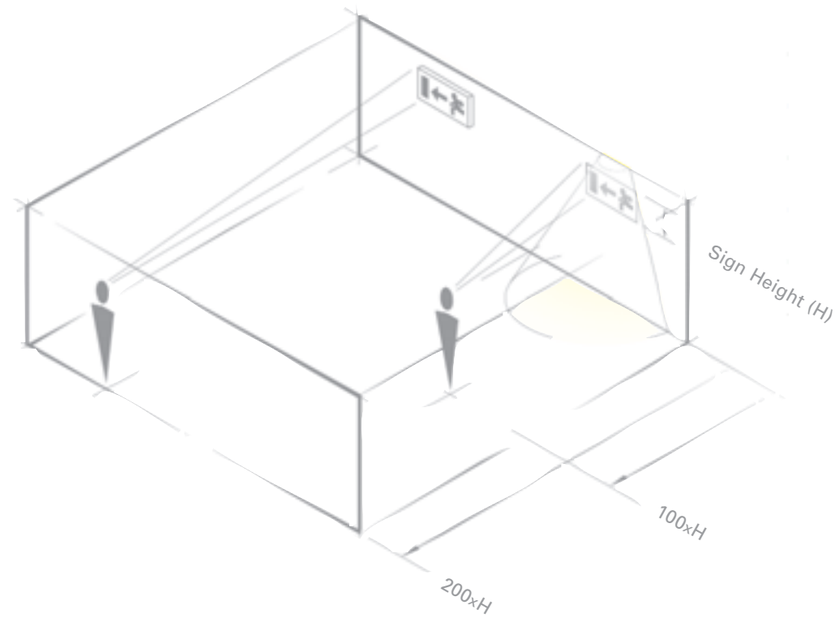
Implemented as a legal requirement in the UK by Statutory Instrument 1996 No. 341 on 1 April 1996.

FUTURE DEVELOPMENTS

BS 5499 Pt 1 is being revised to take account of the Signs Directive and to resolve the difficulties in use of the variants - "Exit", "Fire Exit", and "Exit for Emergency Use Only" - and to standardise the use of arrows.

Maximum viewing distances

Viewing distances are given in the draft standard EN 1838 as 200 x H for internally illuminated signs, and 100 x H for externally illuminated signs where H is the height of the pictogram.



Stage 3

Additional emergency lighting

Additional emergency lighting should be provided at these locations:

(I) Lift cars. Although they may be part of the escape route in exceptional circumstances, they may present a problem if the public are trapped in them in the event of a supply failure.

(II) Toilet facilities and other open tiled areas exceeding 8m² floor area and all toilets for the disabled.

(III) Escalators, to enable users to get off them safely.

(IV) Motor generator, control or plant rooms require battery supplied emergency lighting to help any maintenance or operating personnel.

(V) Covered car parks along the normal pedestrian routes.

Stage 4

Illuminance requirements for escape routes

In addition to luminaires at the points of emphasis, it may be necessary to provide extra luminaires to ensure that minimum light (illuminance) levels are met along the whole escape route. For 2m wide escape routes, the illuminance is specified along the centre line with 50% of that illuminance over the 1 metre wide central band. Wider routes should be treated as open areas or as multiple routes.

The European standard EN 1838 requires 1 lux along the centre line of escape routes including those with minor obstructions such as hotel trolleys. The UK has a National Exception which recommends 1 lux but accepts 0.2 lux along the centre line for permanently unobstructed escape routes, with the points of emphasis illuminated to 1 lux. BS 5266: Pt 1: 1988 will be amended to reflect this requirement.

BS 5266 and prEN 50172 recommend using a larger number of low power luminaires rather than a few high power units. In this way, no part of the escape route is lit by just one luminaire. Thus, if a luminaire fails, the route will not be plunged into darkness.

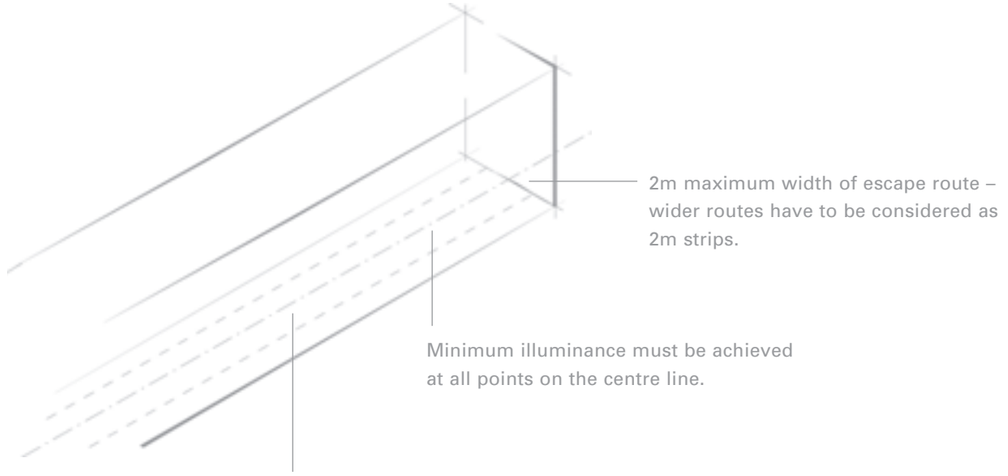
Spacing tables

Spacing tables provide the information to help you decide whether or not additional fittings are needed besides those required for the points of emphasis. ICEL registered luminaires have been independently tested to photometric performance and the tables generated have been third party inspected.

SPACING TABLE FOR TYPICAL LUMINAIRE

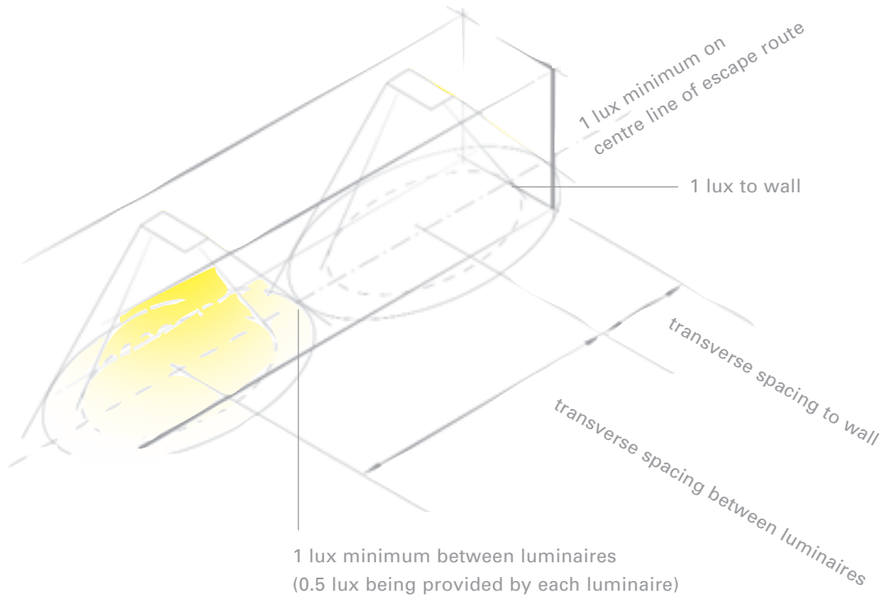
	Escape routes 1 lux minimum along centre line				**Open (anti-panic) areas 0.5 lux minimum Luminaires arranged in a regular array**			
Ceiling mounting height (m)	Transverse to wall	Transverse spacing	Axial to wall	Axial spacing	Transverse to wall	Transverse spacing	Axial to wall	Axial spacing
2.5	1.8	5.6	1.5	4.7	2.1	5.6	1.7	4.6
3	1.5	5.5	1.2	4.6	2.0	5.8	1.7	4.8
4	-	-	-	-	1.7	5.8	1.5	4.9
5	-	-	-	-	0.8	5.4	0.6	4.6

ESCAPE ROUTES – REQUIREMENTS



ESCAPE ROUTES – COMPLIANCE

Verified values are given in ICEL registered spacing tables.



Stage 5

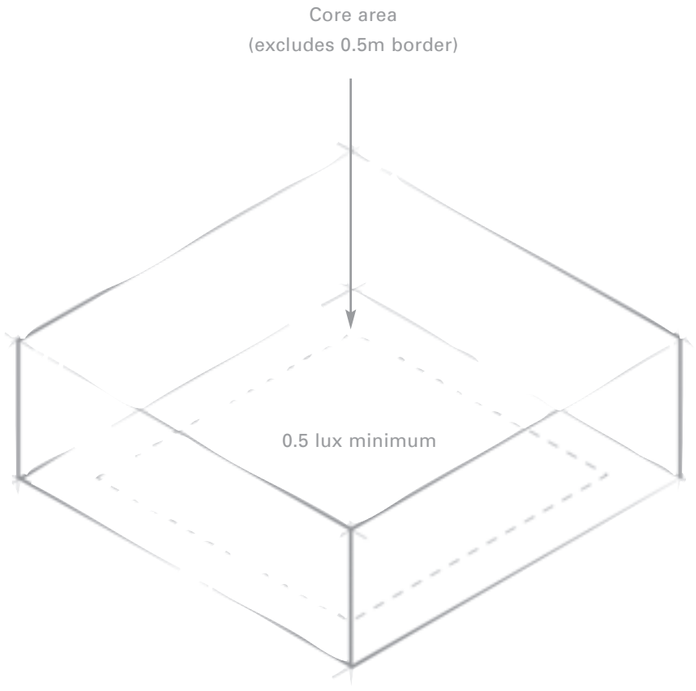
Illuminance levels for open areas

Emergency lighting is required for areas larger than 60m² or open areas with an escape route passing through.

Illuminance

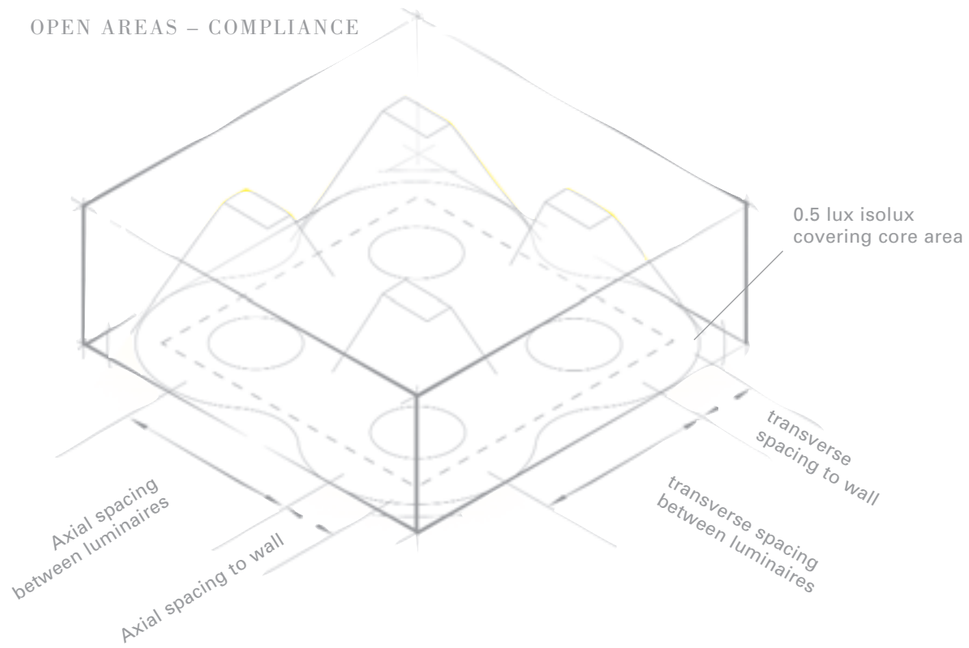
BS 5266 requires 1 lux average over the floor area.
The European standard EN 1838 requires 0.5 lux minimum anywhere on the floor level excluding the shadowing effects of contents. The core area excludes the 0.5m to the perimeter of the area.

OPEN AREAS – REQUIREMENTS



Spacing tables (see stage 4) provide simple and accurate data that can easily be used. These assume a regular array of emergency luminaires.

OPEN AREAS – COMPLIANCE



Summary of Illuminance Requirements

	EN 1838	BS 5266: Pt 1: 1988
Escape routes	1 lux minimum *There is a UK National Exception allowing 0.2 lux in permanently unobstructed escape routes. Due to the possible difficulties in keeping escape routes permanently unobstructed, ICEL recommends that the 1 lux minimum from prEN 1838 is used.*	0.2 lux minimum *Higher levels are required for routes with obstructions or used by older people but the lighting level is not defined.*
Open areas	0.5 lux minimum in core area	1 lux average over total area
Additional areas (e.g. lifts, escalators)	0.5 lux minimum	not specified
High risk task areas	10% of normal illuminance	not specified

All values are with zero reflectance

ICEL recommends that specifiers check that spacing tables are available and that manufacturers prove authenticated photometric data as available from the ICEL Registration Scheme. ICEL offers a scheme of product registration to provide assurance to the user that those products have been previously certified to the appropriate national and international standards, that the manufacture of the product is carried out in a facility operating a recognised scheme of quality assurance, and that performance claims made for the product are valid.

Stage 6

High risk task area lighting

BS 5266 requires that higher levels of emergency lighting are provided in areas of particular risk, although no values are defined.

The European standard EN 1838 says that the average horizontal illuminance on the reference plane (note that this is not necessarily the floor) should be as high as the task demands in areas of high risk. It should not be less than 10% of the normal illuminance, or 15 lux, whichever is the greater. It should be provided within 0.5 seconds and continue for as long as the hazard exists. This can normally only be achieved by a tungsten or a permanently illuminated maintained fluorescent lamp source.

The required illuminance can often be achieved by careful location of emergency luminaires at the hazard and may not require additional fittings.

Stage 7

Choice of appropriate emergency lighting systems

DURATION

See earlier section on Essential Pre-Design Information.

TYPE OF SYSTEM

The type of system used depends on the size and function of the premises. See section 9 of BS 5266: Pt 1: 1988

Stage 8

Design Control Procedures

The illuminance of the installation depends as much on the light distribution as it does on the light output available from the chosen luminaire. Consequently, luminaire types specified for a particular design must not be changed without a reappraisal of the photometric design.

Testing and Log Book

The system should include adequate facilities for testing and recording the system condition. These need to be appropriate for the specific site. It might be feasible to test the installation in an office block by isolating the total supply. This would be inappropriate, however, in a hotel occupied 24 hours a day. A test system able to operate alternate fittings would be more suitable to eliminate the risk of having all the luminaires discharged while the building is occupied.

The model Commissioning Certificates as shown in BS 5266: Pt 1: 1988 and the European standard EN 50172 both require written declarations of compliance to be available on site for inspection.
These consist of:

(I) Installation quality. The wiring installation must conform to the HD 384 regulations, and suitable cable, with adequate support and protection, must be used.

(II) Photometric performance. Evidence of compliance to the design criteria has to be obtained. ICEL 1002 registered fittings are photometrically tested and their spacing data is registered by the ICEL scheme. Copies of this data provide the verification required so long as the spacing is not exceeded.

(III) A declaration of a satisfactory test of operation and compliance to BS 5266.

(IV) A log book should be kept readily available for inspection. It should record the date and brief details of completion, any alterations, periodic inspections and test certificates, each service, inspection or test carried out, defects and remedial action.

Stage 9

Maintenance

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

Checklist for Assessing an Existing Installation

Records

Are the entries made in the log book correct?
Are up-to-date drawings available and correct?
Are routine tests completed according to the requirements in BS 5266?

Emergency Luminaires and Escape Route Signs

Are the fittings supplied with the correct operating voltage?
Are the fittings cleaned and sited in their correct operating environment, e.g. for temperature and I.P. rating?
Do the luminaires operate in the correct mode, e.g. maintained for sleeping accommodation?
Do the luminaires operate for the required emergency duration?

Location of Signs

Are there signs that clearly show the emergency escape route from any position within the premises?
Are all exits marked and directions of travel indicated?
Are the signs illuminated internally or from an external source when the normal lighting supply fails?
Is the size of each sign correct for the viewing distances?
Do the sign legends comply with the Health and Safety (Safety Signs and Signals) Regulations, S.I. No. 341, 1996?

Siting of Luminaires

Are the luminaires positioned at all points of emphasis?
Are the luminaires positioned along the escape routes at the correct spacing to ensure that the required illuminance levels are achieved? The ICEL mark is the best means of assuring that the luminaires meet the photometric performance claims.
Are the luminaires positioned in open areas (anti-panic areas) at the correct spacing to ensure that the minimum illuminance level is achieved?
Are the non-maintained luminaires fed from the same final circuits as the local lighting?
Are there at least two luminaires in each “lighting compartment” to ensure that the area is not plunged into darkness if a luminaire fails?
Are additional luminaires provided in lift cars, escalators, toilets, etc?
Are hazardous areas illuminated at 10% of normal illuminance?

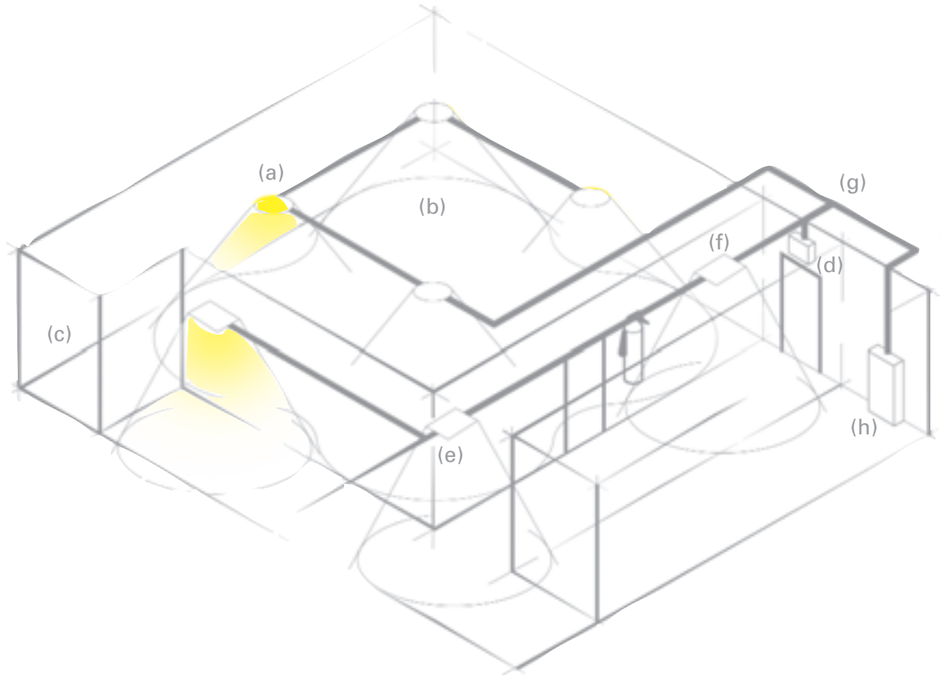
Central Battery Systems

Does the central battery system comply with prEN 50171 and HD 384?
Is the battery charger functioning?
Where applicable, are the battery electrolyte levels and specific gravities satisfactory?

Self-contained Emergency Luminaires and Signs

Are the batteries being charged (red LED - on)?
Are the luminaires marked ICEL to show compliance with all relevant product standards for escape routes?

Relevant Standards



(a)
Emergency Lighting
Product Standard
EN 60598.2.22

(b)
Open Area Lighting
EN 1838

(c)
Other Areas (eg lifts)
prEN 50172

(d)
Signage
Signs Directive
HSE Guide

(e)
Maintained or
Non-Maintained
Duration of Luminaires
(1 hr min)
prEN 50172

(f)
Escape Route Lighting
Fire Points
EN 1838

(g)
Wiring
HD384-5

(h)
Central System
prEN 50171

Legislation & Standards Affecting Emergency Lighting

UK Legislation

Fire Precautions Act 1971
Health and Safety at Work etc Act 1974
The Workplace (Health, Safety and Welfare) Regulations 1992
The Building Regulations 1991
The Cinematograph Act 1952
Cinematograph (Safety) Regulations Statutory Instrument 1955 No. 1129
Health and Safety (Safety Signs and Signals), Statutory Instrument No. 1996/341
Other legislation dealing with premises licensed or registered for public assembly or residential purposes, e.g. Licensing Act, Local Government (Miscellaneous Provisions) Act, Theatres Act, Residential Homes Act etc, the guides for which all contain a requirement for emergency lighting.

British Standards: General Series and Codes of Practice

BS 5266: Pt 1: 1988 Code of practice for the emergency lighting of premises other than cinemas and certain other specified premises used for entertainment
CP1007: 1955 Maintained lighting for cinemas
BS EN 60598-2-22: 1998 Specification for luminaires for emergency lighting
BS 5499: Pt 1: 1990 (1995) Specification for self-luminous fire safety signs
BS 5499: Pt 3: 1990 Specification for internally-illuminated fire safety signs

Harmonised European Standards

Electrical installation of buildings HD 384
Specification for luminaires for emergency lighting EN 60598-2-22: 1998
Lighting applications - emergency lighting EN1838

Draft European Standards

Central power supply systems prEN 50171
Emergency escape lighting systems prEN 50172
Measurement and presentation of photometric data for lamps and luminaires (doc. CEN/TC 169 WG7 N61D/E/F).

European Directives and Recommendations

Workplace Directive (89/654 EEC)
Construction Products Directive (89/106 EEC)
Safety Signs Directive (92/58 EEC)
Fire Safety in Hotels Recommendation - Requirements for Europe (86/666 EEC)

The Workplace Directive is partially implemented in the UK by The Workplace (Health, Safety and Welfare) Regulations 1992. It includes within its scope of premises most buildings where people are employed.

The Workplace Regulations apply to every workplace with certain exceptions such as ships, construction sites, mines, temporary workplaces, fields, woods or other agricultural or forestry land, aircraft, locomotive or rolling stock, trailers and some vehicles. The Regulations require a risk assessment and an emergency plan to be prepared. The supporting guidance stresses the need for cost benefit analysis and minimising burdens commensurate with saving lives and the safe evacuation of premises.

The Workplace Directive is retrospective, i.e. it requires that, over time, all places of work (with the above exemptions) are brought up to standard.

The Construction Products Directive covers both buildings and civil engineering works including domestic, commercial industrial, agricultural, educational and recreational buildings as well as roads and highways, bridges, docks and tunnels. It requires that such buildings or works are designed and built in such a way that they do not present unacceptable risks of accidents in service or in operation such as stumbling or tripping in poor visibility, and that the safety of occupants and rescue workers is ensured in the case of fire. Minimum standards of illumination are required so that people may move safely within the works, including if they have to escape. In addition, escape routes are required to provide secure and adequate lighting, capable of operating despite failure of the electrical supply.

The Safety Signs Directive is retrospective and was implemented in the UK on 1 April 1996. It calls for the provision of emergency signs in all places of work. These signs must be regularly cleaned, tested and maintained, and visible at all times. The traditional text EXIT signs must be replaced by the pictogram by December 1998. A guide to Statutory Instrument No. 341, The Health and Safety (Safety Signs and Signals) Regulations 1996, has been published by the Health and Safety Executive - No. L64.

The Fire Safety in Hotels Recommendation applies to all establishments with 20 or more paying guests. The Recommendation is intended to reduce the risk of fire breaking out, prevent the spread of flames and smoke, and ensure that all occupants can be evacuated safely. In particular the Recommendation requires that escape routes and doors are indicated by safety signs visible day and night, and that an emergency lighting system is provided with sufficient duration to enable evacuation for all occupants.

Note: the latest edition of documents (Directives, standards, guidance notes etc) should be referred to.

Confidence in ICEL

The Industry Committee for Emergency Lighting formulates and promotes standards for emergency lighting and provides guidance to specifiers, users and contractors. ICEL's aim is to direct users to products of assured reliability, quality and photometric performance that help to preserve life in an emergency. The guides and standards published by ICEL since 1978 have become well known and respected world-wide, and have formed the basis of many European standards.

How ICEL Standards have formed the basis of European Standards:

ICEL 1001: Pt 1:1985 Construction and performance of equipment for central systems	Draft European standard prEN 50171 Central power supply systems
ICEL 1001: Pt 2:1986 Construction and performance of self-contained emergency lighting luminaires	EN 60598-2-22:1998 Specification for luminaires for emergency lighting
ICEL 1002:1980 The photometry of battery operated emergency lighting luminaires	prEN xxxx (CEN/TC 169 WG7) Measurement and presentation of photometric data for lamps and luminaires
ICEL 1003:1982 Emergency lighting applications guide	Draft European standard prEN 50172 Emergency escape lighting systems
ICEL 1004:1996 The use, or modification, of mains luminaires for emergency lighting applications	No corresponding European standard
ICEL 1005:1988 Operator initiated test devices for emergency lighting luminaires	Draft European standard prEN 50172 Emergency escape lighting systems

Emergency lighting - a life saving product

Emergency lighting luminaires and modules can help to save lives. They should be constructed in accordance with appropriate standards, assembled in a factory employing recognised and suitable quality assurance procedures, and correctly installed in accordance with correct performance data. ICEL offers a scheme of product registration to provide assurance to the user that those products have previously been certified to the appropriate

national and international standards, that the manufacture of the product is carried out in a facility operating a recognised scheme of quality assurance, and that performance claims made for the product are valid. Products registered under the ICEL scheme may be marked with the ICEL product registration mark:

ICEL
REGISTRATION SCHEME
Reg. no _____

ICEL Product Registration Scheme

Reputable manufacturers of self-contained emergency lighting luminaires, from any country, can register products through ICEL and be allowed to use the ICEL product registration mark on these products, if they meet the stringent requirements of the scheme.

National and international standards

ICEL registered products must have been satisfactorily tested and certified to the harmonised European standard EN 60598-2-22 or national equivalents. Certification must have been granted through a national testing body or acceptable equivalent. The scheme of quality assurance in the manufacturing facility must be in accordance with European standard EN 29000 (ISO 9000) or national equivalent and the manufacturing facility must be assessed and its systems found to be in compliance and accredited as such.

Verification of photometric performance claims

ICEL has devised a photometric performance verification procedure. This procedure describes the test methods that will be employed to validate the claims made by the manufacturer and describes the manner in which data should be presented to the user of the product. It also describes to the user how the photometric data presented should be used to calculate luminaire spacing and positioning or the result of using a module in a luminaire housing. This will ensure correct installation and achieve the required illuminance in accordance with specified requirements.

ICEL

Details of the ICEL product registration scheme, the photometric verification, the product registration mark and the lists of products registered may be obtained from this address:

Industry Committee for Emergency Lighting
Swan House
207 Balham High Road
London SW17 7BQ
Tel. 0181 675 5432

ICEL Membership

Atlas Lighting Components
King George Close
Eastern Avenue West
Romford
Essex RM7 7PP
Tel. 01708 766033
Fax. 01708 776376

Bradley Lomas Electrolok Limited
Manor House
Church Street
Eckington
Sheffield S21 4BH
Tel. 01246 436361
Fax. 01246 436726

Caradon Gent Limited
Hamilton Industrial Park
Waterside Road
Leicester LE5 1TN
Tel. 0116 246200
Fax. 0116 2462019

Channel Safety Systems Limited
9 Petersfield Business Park
Bedford Road
Petersfield
Hants GU32 3QA
Tel. 01730 268231
Fax. 01730 265552

Crompton Lighting Limited
Wheatley Hall Road
Doncaster
South Yorkshire DN2 4NB
Tel. 01302 321541
Fax. 01302 340998

Emergency Lighting Products Ltd
Unit 19 & 20, Huffwood
Brookers Road
Billingshurst
West Sussex RH14 9UR
Tel. 01403 786601
Fax. 01403 786602

Emergi-Lite Safety Systems Limited
Bruntcliffe Lane
Morley
Leeds LS27 9LL
Tel. 0113 2810600
Fax. 0113 2810601

Existalite Limited
Project House
18 Tallon Road
Hutton
Essex CM13 1TZ
Tel. 01227 263660
Fax. 01227 263592

Fern-Howard Ltd
5 Woolmer Way
Bordon
Hampshire GU35 9QE
Tel. 01420 487172
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Fitzgerald Lighting Limited
Walker Lines Industrial Estate
Normandy Way
Bodmin
Cornwall PL31 1HH
Tel. 01208 73062
Fax. 01208 78805

Gradus Lighting
Chapel Mill
Park Green
Macclesfield
Cheshire SK11 7LZ
Tel. 01625 428922
Fax. 01625 433949

Legrand Electric Limited
Woodside Park
Foster Avenue
Dunstable
Bedfordshire LU5 5TA
Tel. 01582 676767
Fax. 01582 676771

Luxonic Lighting plc
Unit 15
Moniton Trading Estate
West Ham Lane
Basingstoke
Hampshire RG22 6NQ
Tel. 01256 363090
Fax. 01256 842349

Mackwell Electronics Limited
Vigo Place
Aldridge
Walsall
West Midlands WS9 8UG
Tel. 01922 458255
Fax. 01922 451263

Marlin Lighting
Hanworth Trading Estate
Hampton Road West
Feltham
Middlesex TW13 6DR
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Fax. 0181 8944400

Menvier Ltd
Southam Road
Banbury
Oxfordshire OX16 7RX
Tel. 01295 256363
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Orbik Electronics Ltd
Orbik House
Northgate Way
Aldridge, Walsall
West Midlands WS9 8TX
Tel. 01922 743515
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P4 Ltd
Unit 4A, Stratton Park
Dunton Lane
Biggleswade
Bedfordshire SG18 8QS
Tel. 01767 600024
Fax. 01767 600808

Philips Lighting Limited
The Philips Centre
420-430 London Road
Croydon CR9 3QR
Tel. 0181 665 6655
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Protec Fire Detection plc
Protec House
Churchill Way
Nelson
Lancashire BB9 6RT
Tel. 01282 717171
Fax. 01282 717273

Thorn Lighting Limited
The Towers
Wilmslow Road
Didsbury
Manchester M20 8SE
Tel. 0161 4459988
Fax. 0161 4461079

Ventilux (UK) Limited
Systems House
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Whitecroft Lighting Ltd
Burlington Street
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INDUSTRY COMMITTEE FOR EMERGENCY LIGHTING

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