BS EN 1838:2024

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Lighting applications — Emergency lighting for buildings

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National foreword

This British Standard is the UK implementation of EN 1838:2024. It supersedes BS EN 1838:2013, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EL/1/1, Emergency lighting.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Lighting applications - Emergency lighting for buildings

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Angewandte Lichttechnik - Notbeleuchtung für bauliche Anlagen

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European foreword

This document (EN 1838:2024) has been prepared by Technical Committee CEN/TC 169 “Light and lighting”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2025, and conflicting national standards shall be withdrawn at the latest by June 2027.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1838:2013.

EN 1838:2024 includes the following significant technical changes with respect to EN 1838:2013:

— Requirements for emergency escape route lighting have been amended to cover the width of the escape route;

— Greater detail has been included for the requirements for emergency lighting of points of emphasis and specific areas of hazard;

— Considerations for emergency lighting systems during and after a premises lockdown or prolonged periods where power is disconnected have been added as Annex C.

This document is read in conjunction with EN 50172.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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Introduction

Emergency lighting for buildings is provided for use when the supply to the normal lighting fails and is therefore powered from a source independent of that supplying the normal lighting. It may provide lighting for both safety and operational tasks.

For the purposes of this document emergency lighting is regarded as a generic term of which there are a number of specific forms, as shown in Table 1.

Table 1 — Specific forms of emergency lighting

<table>
<tr><td colspan="5">Emergency lighting see Clauses 4, 5, 6 and 7</td></tr>
<tr><td colspan="3">Emergency escape lighting, see Clause 4 and 5</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>Escape route lighting

see 5.1</td><td>Open area (anti-panic) lighting

see 5.2</td><td>High-risk task area lighting

see 5.3</td><td>Local area lighting

see 7.1</td><td>Standby lighting

see 7.2</td></tr>
<tr><td colspan="4">Safety signs including adaptive safety signs
see Clause 6</td><td></td></tr>
</table>

Emergency lighting can be provided by maintained luminaires and maintained safety signs when the normal lighting is available. Maintained luminaires and maintained exit and safety signs shall operate when the normal lighting is required but fails. (Refer to EN 50172 for further details on normal lighting failures.)

Adaptive emergency escape lighting (AEEL) is a technique that can be used as a supplement to emergency escape lighting and, when applied to escape routes in addition to emergency escape lighting, can enhance their effectiveness in an emergency. These techniques are included in CEN/TS 17951.

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1 Scope

This document specifies the luminous requirements for emergency lighting systems, including adaptive emergency escape lighting systems, electric emergency lighting, installed in premises or locations where such systems are required or needed and which are principally applicable to locations where the public or workers have access.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12665:2024, *Light and lighting - Basic terms and criteria for specifying lighting requirements*

EN 50172:2024, *Emergency escape lighting systems*

EN IEC 60598-1, *Luminaires - Part 1: General requirements and tests (IEC 60598-1)*

EN 60598-2-22, *Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting*

EN ISO 7010, *Graphical symbols - Safety colours and safety signs - Registered safety signs (ISO 7010)*

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 3864-3, *Graphical symbols — Safety colours and safety signs — Part 3: Design principles for graphical symbols for use in safety signs*

ISO 3864-4, *Graphical symbols — Safety colours and safety signs — Part 4: Colorimetric and photometric properties of safety sign materials*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12665:2024 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
emergency lighting
lighting provided for use when the power supply to the normal electric lighting fails

[SOURCE: EN 12665:2024, 3.5.6]

3.2
place of safety
designated place normally outside the building where escaping people can assemble safely and are not at risk of the emergency status

[SOURCE: EN 12665:2024, 3.5.100]

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3.3
escape route
designated route, used to evacuate in case of an emergency, to a place of safety

[SOURCE: EN 12665:2024, 3.5.43]

3.4
escape route lighting
part of emergency escape lighting provided to ensure that the escape route can be effectively identified and safely used when the location is occupied

[SOURCE: EN 12665:2024, 3.5.44]

3.5
emergency escape lighting
part of emergency lighting that provides illumination for visibility of the escape route and of safety signage for fire-fighting and safety equipment and for the guidance and the safety of people leaving a location to a place of safety or attempting to terminate a potentially hazardous process or situation before doing so

[SOURCE: EN 12665:2024, 3.5.36]

3.6
open area (anti-panic) lighting
part of emergency escape lighting provided to avoid panic and provide illumination allowing people to reach a place where an escape route can be identified

[SOURCE: EN 12665:2024, 3.5.64]

3.7
local area lighting
part of emergency lighting that provides illumination for people allowed to remain temporarily in a premise during a mains supply failure if it is risk assessed for the activities that are allowed to be performed

[SOURCE: EN 12665:2024, 3.5.101]

3.8
high-risk task area lighting
part of emergency lighting that provides illumination for the safety of people involved in a potentially dangerous process or situation and to enable proper shut down procedures for the safety of the operator and other occupants of the building

[SOURCE: EN 12665:2024, 3.5.50]

3.9
standby lighting
part of emergency lighting provided to enable normal activities to continue substantially unchanged

[SOURCE: EN 12665:2024, 3.5.74, modified – spelling standby lighting is used]

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3.10
safety sign
sign that gives a general safety message, obtained by a combination of colour and geometric shape and which, by the addition of a graphical symbol, gives a particular safety message

[SOURCE: ISO 3864-1:2011, 3.12]

3.11
maintained safety sign
sign in which the integral lamps are energized at all times when normal or emergency mode of operation is required

[SOURCE: ISO 3864-4:2011, 3.8]

3.12
non-maintained safety sign
sign in which the integral lamps are in operation only when the power supply to the normal lighting fails

[SOURCE: ISO 3864-4:2011, 3.9]

3.13
internally illuminated safety sign
safety sign that is illuminated, when it is required, by an internal light source

[SOURCE: EN 12665:2024, 3.5.54]

3.14
externally illuminated safety sign
safety sign that is illuminated, when it is required, by an external emergency luminaire

[SOURCE: EN 12665:2024, 3.5.48]

3.15
emergency exit
way out marked with a safety sign that is intended to be used during an emergency leading to a defined place of safety

[SOURCE: EN 12665:2024, 3.5.37]

3.16
final emergency exit
termination of an escape route from a building or premises giving direct access to a street, passageway, walkway or open space, and sited to ensure the rapid dispersal of persons from the vicinity of a building or premises

3.17
adaptive emergency escape lighting system
AEELS
electrically operated escape lighting system which provides directional guidance and adequate illuminance by means of a set of emergency lighting luminaires and directional indication that can manually or automatically change the escape route direction and improve the conspicuity of the emergency signage and optionally adapt the lighting level on escape routes

[SOURCE: EN 12665:2024, 3.5.103]

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3.18
adaptive safety sign
internally illuminated escape route safety sign that interacts together with luminaires to change the information it displays to indicate an alternative escape route or to indicate that the route is closed or not available for use

[SOURCE: EN 12665:2024, 3.5.104]

3.19
system duration
<of an emergency lighting system> minimum period of time for which the luminous requirements of the emergency lighting system are met

Note 1 to entry: A system can consist of a single luminaire.

3.20
activation time
<of an emergency escape lighting system> time between failure of the supply to the normal lighting and emergency lighting reaching the required level of illuminance

3.21
identifiability
property of a graphical symbol which enables its elements to be perceived as the objects or shapes depicted

[SOURCE: ISO 9186-2:2008, 3.1]

3.22
maintenance factor
MF
DEPRECATED: light loss factor
DEPRECATED: depreciation factor
f_m
<of a lighting installation> quotient of illuminance produced by the lighting installation after a certain time interval and the illuminance produced by the installation when new

Note 1 to entry: The English term “light loss factor” and the French term “facteur de perte de lumière” are no longer used.

Note 2 to entry: The English term “depreciation factor” and the French term “facteur de dépréciation” were formerly used to designate the reciprocal of the above quotient.

Note 3 to entry: The maintenance factor takes into account light losses caused by dirt accumulation on luminaires and room surfaces (in interiors) or other relevant surfaces (in exteriors, where appropriate), and the decrease in the luminous flux of lamps.

Note 4 to entry: The maintenance factor has unit one.

[SOURCE: EN 12665:2024, 3.5.18]

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