SLOVENSKI STANDARD
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Sistemi za zasilno razsvetljavo evakuacijskih poti

Emergency escape lighting systems

Sicherheitsbeleuchtungsanlagen

Systèmes d'éclairage de sécurité

Ta slovenski standard je istoveten z: **EN 50172:2024**

ICS:

91.160.10 Notranja razsvetljava Interior lighting

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Emergency escape lighting systems

Systèmes d'éclairage de sécurité

Sicherheitsbeleuchtungsanlagen

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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European foreword

This document (EN 50172:2024) has been prepared by CLC/TC 34" Lighting".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2025-05-27
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2027-05-27

This document supersedes EN 50172:2004 and all of its amendments and corrigenda (if any).

EN 50172:2024 includes the following significant technical changes with respect to EN 50172:2004:

— Requirements for emergency escape lighting equipment have been added

— Requirements for the initial verification have been added

— Requirements for the handover documentation have been added

— Requirements to the logbook have been added

— Requirements to maintenance and verification of emergency escape lighting systems have been modified

— Guidance for the selection of appropriate system durations and activation times for various use cases have been added as Annex A

— Recommendations how the onsite measurement should be carried out have been added as Annex B

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

— Requirements how the system wiring should be carried out have been added as Annex D

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

This document is read in conjunction with EN 1838.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Introduction

Table 1 shows an overview of the different forms of emergency lighting. For more details see EN 1838.

Table 1 — Forms of emergency lighting

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<tr><th colspan="5">Emergency lighting</th></tr>
<tr><th colspan="3">Emergency escape lighting</th><td rowspan="2">Local area lighting</td><td rowspan="2">Standby lighting</td></tr>
<tr><td>Escape route lighting</td><td>Open area (anti-panic) lighting</td><td>High-risk task area lighting</td></tr>
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While EN 1838 includes luminous requirements for emergency escape lighting systems (and stand-by lighting systems), this document provides electrical installation requirements specific for emergency escape lighting systems together with verification, operation and maintenance documentation and test requirements for such systems. Emergency lighting is a key element of building safety and of utmost importance to prevent harm and save lives in emergency situations. Such situations are rare, but their rarity is also the reason why issues may remain undetected and the functionality of the emergency lighting system may thus be impaired just in the very moment that emergency lighting is actually required. Such issues may be related to building layout updates or changes in use pattern, or simply the ageing of emergency lighting equipment over time, for instance. Therefore, maintenance of emergency lighting systems is just as essential as its initial proper installation.

Hence, this document does contain detailed requirements not only for the initial verification of emergency escape lighting systems, but also for its continuous monitoring and maintenance which is the only way to ensure that emergency escape lighting will adequately be provided whenever required.

Note that legal requirements throughout Europe are not limited to the initial installation of emergency lighting, but also comprise requirements related to continuous monitoring and maintenance.

1 Scope

This document specifies electrical installation requirements specific for emergency escape lighting systems together with verification, operation and maintenance documentation and test requirements for such systems.

NOTE 1 Emergency escape lighting includes escape route lighting, open area (anti-panic) lighting and high-risk task area lighting. Escape route safety signs are part of emergency escape lighting.

NOTE 2 Emergency escape lighting systems include adaptive and non-adaptive systems, as well as high and low-mounted systems.

This document does not cover stand-by lighting requirements.

NOTE 3 Systems used for stand-by lighting can also be used for emergency escape lighting, given the corresponding requirements are fulfilled, see EN 1838.

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 1838:—,[1] *Lighting applications - Emergency lighting*

ISO 8528-12, *Reciprocating internal combustion engine driven alternating current generating sets — Part 12: Emergency power supply to safety services*

EN 50171:2021, *Central safety power supply systems*

HD 60364-5-51:2009,[2] *Electrical installations of buildings - Part 5-51: Selection and erection of electrical equipment - Common rules*

HD 60364-5-56:2018, *Low-voltage electrical installations - Part 5-56: Selection and erection of electrical equipment - Safety services*

HD 60364-6:2016, *Low-voltage electrical installations - Part 6: Verification*

EN IEC 60598-2-22:2022, *Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting (IEC 60598-2-22)*

EN 62034, *Automatic test systems for battery powered emergency escape lighting*

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

EN IEC 62485-2, *Safety requirements for secondary batteries and battery installations - Part 2: Stationary batteries (IEC 62485-2)*

EN IEC 62485-5, *Safety requirements for secondary batteries and battery installations - Part 5: Safe operation of stationary lithium ion batteries*

[1] A new edition of EN 1838 is under preparation by CEN TC 169. Stage at the time of publication: FprEN 1838:2024.
[2] As amended by HD 60364-5-51:2009/A11:2013 and HD 60364-5-51:2009/A12:2017.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1838:— and the following apply.

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

[SOURCE: IEC 60050-845:2020, 845-29-010, modified: Note 1 to entry has been deleted]

3.2
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]

3.3
emergency escape lighting system
set of items functioning together in order to provide emergency escape lighting

Note 1 to entry: This includes luminaires, controlgear, central safety power supply systems, wiring etc.

3.4
stand-by lighting
part of emergency lighting provided to enable normal activities to continue substantially unchanged

[SOURCE: IEC 60050-845:2020, 845-29-013, modified]

3.5
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]

3.6
escape route
designated route, used to evacuate in case of an emergency, to a place of safety

[SOURCE: EN 12665:2024, 3.5.43]

3.7
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]

3.8
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]

3.9
high-risk task area lighting
part of emergency escape 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]

3.10
emergency luminaire
luminaire for emergency lighting

Note 1 to entry: Emergency luminaires include internally illuminated safety signs and luminaires providing light for externally illuminated safety signs.

Note 2 to entry: Emergency luminaires can be supplied by an internal or external electrical source for safety services.

3.11
self-contained emergency luminaire
luminaire providing maintained or non-maintained emergency lighting in which all the elements, such as the electric source for safety services (ESSS), the lamp, the control unit and the test and monitoring facilities, where provided, are contained within the luminaire or adjacent to it (that is, within 1 m cable length)

[SOURCE: EN IEC 60598-2-22:2022]

3.12
safety sign
sign that gives a general safety message, conveyed 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]

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
central safety power supply system
central power supply system which supplies the required power to essential safety equipment with any rated power output

[SOURCE: EN 50171:2021]

3.16
electrical source for safety services
ESSS
electrical source intended to be used as part of an electrical supply system for safety services

[SOURCE: IEC 60364-5-56:2018, modified – “ESSS” has been added as admitted term.]

3.17
automatic test system
ATS
automated test system that may be manually initiated, consisting of parts (such as timers, current detectors, light detectors, changeover switches) which, when connected together, make a system that can carry out the routine testing requirements of emergency luminaires, and indicate the test results

[SOURCE: IEC 62034:2012, modified – “emergency lighting luminaires” was replaced by “emergency luminaires”]

3.18
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.

[SOURCE: EN 1838:—]

3.19
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

[SOURCE: EN 1838:—]

4 General

4.1 Normal lighting failures

Emergency escape lighting shall be provided promptly, automatically and for a suitable time in a specified area when the power supply to the normal lighting fails.

This further includes:

— operation/tripping of circuit protection devices. However, where an area is served by multiple lighting circuits, monitoring of all circuits or circuit protection devices may not be required, if the failure of one or more circuits or operation of circuit protection devices is not expected to cause the normal lighting in this specified area to fall below the illuminance levels required for emergency escape lighting.

— Failures of the lighting control system where this is expected to cause the normal lighting in this specified area to fail.

NOTE 1 Normal lighting supply failures include interruptions of the power supply from the electricity supplier.

NOTE 2 Required illuminance levels are given in EN 1838.

NOTE 3 Lighting control system refers to a networked system of devices related to lighting control only, that incorporates communication between various system inputs and outputs, with the use of one or more central computing device(s).

4.2 Minimum requirements

To facilitate the evacuation of a building during emergency operation, sufficient minimum illuminance, an adequate system activation time and system duration are required.

NOTE According to EN 1838 a minimum system duration of 1 h is required for all emergency escape lighting installations. Furthermore, Annex A provides guidance for the selection of appropriate system durations and activation times for various use cases.