UL 1994

STANDARD FOR SAFETY

Luminous Egress Path Marking Systems

UL Standard for Safety for Luminous Egress Path Marking Systems, UL 1994

Fourth Edition, Dated May 29, 2015

Summary of Topics

This revision of ANSI/UL 1994 dated July 1, 2020 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated March 27, 2020.

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UL 1994

Standard for Luminous Egress Path Marking Systems

Prior to the February 14, 2005 revisions, this standard was titled Low Level Path Marking and Lighting Systems.

First Edition – May, 1991
Second Edition – January, 1997
Third Edition – January, 2004

Fourth Edition

May 29, 2015

This ANSI/UL Standard for Safety consists of the Fourth Edition including revisions through July 1, 2020.

The most recent designation of ANSI/UL 1994 as a Reaffirmed American National Standard (ANS) occurred on June 19, 2020. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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INTRODUCTION

1 Scope

1.1 These requirements cover floor proximity and other egress path marking and lighting systems that provide a visual delineation of the path of egress. These systems are also used to identify significant egress path features such as doors, door hardware, door frames, stairs, stair landings, stair banisters, obstacles, egress symbols, information placards, and similar elements of the egress path.

1.2 These systems are intended for installation and use as required by building and fire safety codes such as the Life Safety Code, NFPA 101; the Building Construction and Safety Code, NFPA 5000, and the International Building Code sponsored by the International Code Council.

1.3 These requirements cover photoluminescent egress path marking system materials such as sheeting and adhesive-backed laminates. They also cover paints, pigments or inks pre-applied to a substrate. They are intended for installation where the facility illumination is sufficient to activate the photoluminescent material.

1.4 These requirements do not address the mounting integrity of path markers intended to be secured by adhesive to a building element. The suitability of this form of mounting for any given application is outside the scope of this Standard.

1.5 Self-luminous systems include constructions as defined in 5.13.

1.6 Externally powered lighting systems include varying designs of electric lamps that may be intended for connection to any combination of normal power supply, emergency power supply, and battery backup.

1.7 These requirements do not cover egress signs and lighting to be used independent from a path marking system, such as EXIT signs or other legally required legends or graphical symbols that are within the scope of the Standard for Emergency Lighting and Power Equipment, UL 924.

1.8 These requirements do not address the text or graphical symbol content, or the configuration of path marker signs.

1.9 The term "product" as used in these requirements refers to egress path marking and lighting systems or any part thereof covered by these requirements unless specifically noted otherwise.

2 Components

2.1 Except as indicated in 2.2, a component of a product covered by this Standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components used in the products covered by this Standard.

2.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or

b) Is superseded by a requirement in this standard.

2.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

4 References

4.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

5 Glossary

5.1 For purposes of this Standard the following definitions apply.

5.2 DIRECTIONAL MARKER – A photoluminescent, self-luminous, or externally powered marker that is provided with a means of identifying the direction of emergency egress. A directional marker is intended only for use with and as part of a path marking and lighting system. See 1.7 for other limitations.

5.3 FLOOR PROXIMITY – A mounting location within 18 inches (45.7 cm) of grade. For stairs, the mounting location is measured relative to a line connecting the stair nosings.

5.4 HIGH-VOLTAGE CIRCUIT – A circuit involving a potential of more than 30 volts ac, 42.4 volts peak or dc, but not more than 600 volts.

5.5 HORIZONTAL LUMINOUS LENGTH – The length of the luminous segment parallel to the direction of travel in the path of egress, that is, the length a person would have to traverse to pass the luminous segment.

5.6 LOW-VOLTAGE CIRCUIT – A circuit involving a potential of not more than 30 volts ac, 42.4 volts peak or dc, and supplied by:

a) An energy limiting battery circuit,

b) A Class 2 transformer, or

c) A combination of a transformer and fixed impedance which, as a unit, complies with all performance requirements for a Class 2 transformer.

(See also Low-Voltage, Power-Limited Circuits, Section 31.)

5.7 LUMINOUS SEGMENT – The portion of the path marking system that is intended to be illuminated after activation of the system.

5.8 PATH MARKER – A luminous strip or sign intended only for use with a luminous egress path marking system to assist building occupants in finding an exit.

5.9 PATH MARKER SIGN – A path marker that includes text and/or one or more graphical symbols intended to provide information related to egress features or procedures.

5.10 PATH MARKER STRIP – A path marker without text or graphical symbols.

5.11 PATH MARKER SYSTEM – An integrated collection of path marker strips and/or path marker signs intended to assist building occupants and/or first responders to deal effectively with evacuation scenarios.

5.12 PHOTOLUMINESCENT – Having the property of emitting light that continues for a length of time after excitation by visible or invisible light has been removed.

5.13 SELF-LUMINOUS – Illuminated by a self-contained power source (other than batteries) and operated independently of external power sources.

5.14 VISUAL DELINEATION – The use of visual cues to identify the path of egress accurately.

CONSTRUCTION

6 General

6.1 Product assembly

6.1.1 Systems shall include all components necessary for intended function when installed as specified in the manufacturer's instructions.

6.1.2 A product or system that is not assembled by the manufacturer as a complete unit shall include a list identifying all parts needed to form a complete system. All parts shall be marked or otherwise identified in the instructions. Any special tools required to complete the assembly shall be provided.

6.2 Mechanical protection

6.2.1 Louvers and other openings in the ultimate enclosure shall be constructed and located to reduce the risk of unintentional contact with hot surfaces or with moving parts that may cause a risk of injury to persons. In determining compliance with this requirement, parts such as covers, panels, or grilles used as part of the enclosure are to be removed unless tools are required for their removal.

6.2.2 The degree of protection required by 6.2.1 depends upon the general design and the intended use of the product. The location where the product ordinarily will be used is considered when judging the acceptable degree of exposure of moving parts. Other factors taken into consideration in judging the acceptability of exposed moving parts are:

a) The degree of exposure;

b) The sharpness of the moving parts;

c) The likelihood of unintentional contact with the moving parts; and

d) The speed of movement of those parts.

6.2.3 Moving parts that may cause injury to persons, such as fan blades or blower wheels, shall be guarded or enclosed so that the minor dimension of any opening does not exceed the values in 6.2.4 and 6.2.6. Parts required for guarding shall be secured by means dependent upon tools for their removal unless the guard is required to be in place in order for the product to function.

6.2.4 The distance from an opening to the moving part shall be in accordance with Table 6.1, but the minor dimension of the opening shall not, in any case, exceed 1 inch (25.4 mm). For an opening having a minor dimension intermediate between two of the values included in the table, the distance from the opening to the moving part shall be not less than that found by appropriate interpolation between the corresponding values in the table. The minor dimension of the opening is determined by the largest